



ATTACHMENT B
Existing San Marcos Municipal Code Title 20.330

CHAPTER 20.330 WATER EFFICIENT LANDSCAPE STANDARDS

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Section 20.330.010 Purpose of Chapter

The purpose of this chapter is to establish responsible landscape standards that promote the quality of life in the community and provide areas for active and passive recreation and aesthetic enjoyment and enchantment. Specifically, the provisions of this chapter are intended to do the following:

- A. Implement the Water Efficient Landscape Regulations adopted by the City Council in 2011 for standards for landscape and irrigation design and installation to ensure beneficial, efficient, and responsible use of all available water resources for residence and businesses within the City.
- B. Effectively conserve water consistent with the state's model adopted pursuant to California Government Code Section 65595.
- C. Establish specific standards for landscape and irrigation design and installation to ensure beneficial, efficient, and responsible use of all available water resources for residence and businesses within the City.
- D. Implement a variety of landscaping objectives, including preventing erosion; filtering, treating, and using storm water runoff; and offering fire protection.
- E. Promote landscaping design, pH level, installation, maintenance, and management of landscaping that is water efficient.
- F. Establish that the right to use water is limited to the amount reasonably required for the beneficial use to be served, and shall not extend to waste or unreasonable method of use.

Section 20.330.020 Applicability

- A. The provisions of this chapter shall apply to all of the following landscape projects:

1. New construction and rehabilitated landscapes with a landscape area equal to or greater than 2,500 square feet that require a permit, plan check, or Site Development Plan review:
 - a. for public agency projects and private development projects with a landscape area equal to and greater than 2,500 square feet;
 - b. developer-installed in single-family and multifamily residential projects.
2. New construction or rehabilitation of landscapes that are homeowner-provided and/or home owner hired in single-family and multifamily residential projects with a total project landscape of equal to and greater than 5,000 square feet requiring a building or landscape permit, plan check, or design review.
3. Existing landscapes are limited to Sections 20.330.030 (Water Purveyor Responsibility), 20.330.070(Q) (Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis), and 20.330.070(R) (Water Waste Prevention).
4. Recognizing the special landscape management needs of cemeteries, new and rehabilitated cemeteries are limited to the requirements of sections 20.330.030 (Water Purveyor Responsibility), 20.330.070(C) (Maximum Applied Water Allowance), 20.330.070(K) (Landscape and Irrigation Maintenance Schedule), and 20.330.070(L) (Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis); existing cemeteries are limited to Section 20.330.070(L) (Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis).
5. A model home that includes a landscape area.

B. Exemptions. The following projects and landscapes shall be exempt from the provisions of this chapter:

1. Homeowner-provided and homeowner-hired landscaping at single-family and multifamily residential projects less than 2,500 square feet.
2. Registered local, state, or federal historical sites.
3. Ecological restoration projects that do not require a permanent irrigation system.
4. Mined-land reclamation projects that do not require a permanent irrigation system.
5. Plant collections as part of a botanical gardens and arboretums open to the public.
6. Any single-family residence that is being rebuilt after it was destroyed due to a natural disaster, such as a fire, earthquake, hurricane, or tornado.
7. Landscaping provided by a Community Facilities District (CFD). Coordination with the Planning Divisions and Public Works Department will be required for such items as plan processing, planting and irrigation specifications, inspection, securities, and maintenance period.

Section 20.330.030 Water Purveyor Responsibility

The City may designate the local retail water purveyors, to implement some or all of the requirements contained in this chapter. The City may collaborate with water purveyors to define each entity's specific responsibility relating to this chapter.

Section 20.330.040 Landscape Standards

Landscaping shall be required in a manner that beautifies the community, supports the purposes of this chapter, and uses water in an efficient and responsible manner. Landscape areas and materials shall be designed, installed, and properly maintained in compliance with this chapter and the following standards.

A. General Standards Applicable to All Zones. All landscape areas shall be as follows:

1. Planned as in integral part of the overall project design and not simply located in excess space after structures and parking areas have been planned.
2. Designed in a manner considerate of pedestrian access to sidewalks and structures.
3. A minimum width of five (5) feet to properly accommodate for tree growth. Width may be reduced if the landscape area only contains a mixture of ground cover and shrubs, or if otherwise approved by the Director.
4. Include a combination of trees, shrubs, and groundcover appropriate to the setting, solar exposure, and design of the site, and include a mixture of evergreen and deciduous trees.
5. All areas not devoted to building coverage, walkways, parking, or driveways shall be landscaped.
6. Where healthy mature trees exist on a site, maximum effort in site planning and landscape design shall be given for tree retention; trees shall be protected during construction.

B. Residential Zones. All landscape designs, including common open space and landscape setbacks, within multifamily residential Zone development (R-2 and R-3) and PRDs shall incorporate drought-tolerant and native plant palettes to enhance the visual aesthetics of a project while conserving current water supplies and reducing normal water consumption for purposes of irrigation. In addition to the general provisions and process of this chapter, the following standards shall apply:

1. All setbacks shall be landscaped.
2. Greater intensity of landscaping shall be installed at the end of buildings, along street frontages, and side/rear setbacks and adjacent to two (2)-story buildings.
3. All landscape shall be consistent with energy and resource conservation efforts prescribed by California Building Code requirements.
4. Larger specimens of shrubs and trees are encouraged along the site periphery, particularly along setback areas adjacent to public streets.
5. Locate vegetation to screen parking areas and private first floor areas and windows from second story units.
6. Landscaping shall include a combination of size of materials.
7. Landscaping shall be complimentary to building design and architectural treatment.

C. R-MHP Zone Standards. The following standards shall apply to all new development, and expansions of ten percent (10%) or greater of the development area, within the R-MHP Zone:

1. Landscaping shall be required for the entire setback area between all required solid masonry walls and property lines abutting public ROW(s), except for the area required for accessways to the park.
2. With the front setback area, between the required masonry wall and the public ROW, tree planting shall be as follows:
 - a. A minimum of one (1) twenty-four (24)-inch box tree shall be planted at a maximum spacing of twenty (20)-foot intervals within five (5) feet of the required wall; a bio-barrier shall be installed when tree is planted adjacent to a wall or sidewalk/walkway.
 - b. Variations in the tree planting requirements in setback areas may be permitted in effective use with existing trees and vegetation to provide an adequate landscaped buffer between the park and adjoining ROWs.
3. Landscaping along all streets and boundaries shall be limited to a height of not more than three and one-half (3.5) feet within twenty (20) feet of any open vehicular access way to the park.

D. **Parking Area Requirements.** The following standards shall apply to all new development in the Commercial (C), Public Institutional (PI), and Industrial (L-I, I, I-2) Zones.

1. Except for those areas devoted to driveways and/or pedestrian walkways, all off-street parking areas or structures abutting a public street or sidewalk shall be bound by a planting strip or appropriate permeable drainage treatment with minimum widths established by Site Development Plan Review standards or permit application review, and shall comply with ADA standards. The design shall include a method to ensure separation between landscaping and vehicles.
2. For any required parking area of more than ten (10) spaces, landscaping shall be installed and maintained as follows:
 - a. All required parking setbacks shall be landscaped.
 - b. The landscape plan shall be prepared by a licensed landscape architect.
 - c. Landscaped areas shall be evenly dispersed throughout the parking lot and shall include a combination of trees, shrubs, and ground cover, emphasizing drought-tolerant landscaping.
 - d. Parking lots shall be required to provide trees for shade at a minimum of one (1) tree for every five (5) parking spaces, in planters or landscaped islands evenly distributed throughout the parking lot. Trees shall be selected from the City's approved planting list, shall be a minimum twenty-four (24)-inch box size, and designed to achieve a goal of fifty percent (50%) shade requirement within fifteen (15) years of planting.
 - e. Tree planters shall have a minimum interior dimension of five (5) feet and/or shall be sized to accommodate the selected species of tree growth.
 - f. To increase the parking lot landscaped area, an additional three (3) feet of the parking stall may be landscaped with low growth, hardy landscaping in lieu of paving.

- g. To increase the parking lot landscape area, a two (2)-foot landscaped overhang area may be provided as part of the eighteen (18)-foot minimum length of a parking space, provided the total depth of such overhang area is in accord with the specifications of Table 20.340-3. Such overhang area shall not be considered as part of the landscaping requirement. In no case shall such overhang be considered part of a required walkway or sidewalk width.
 - h. Landscape irrigation shall be provided per the requirements of this chapter.
 - i. Parking area landscaping requirements may be reduced if a developer provides substitute open areas as approved by the Director. Substitute areas may include reflection pools, lawns, and similar landscape features.
3. Parking Area Screening.
- a. Parking lots shall be screened from major public streets and adjacent residential land uses with plants, low walls fences, or grade changes that is a minimum of three (3) feet in height.
 - b. Interior property lines between parking lot areas and an existing or proposed residential development shall require a six (6)-foot-high decorative masonry wall.

Section 20.330.050 Landscape Documentation Package Submittal Milestones

Prior to final approval of the Landscape Documentation Package, the Planning Division must obtain approval from the local water purveyor to verify that the water budget calculations specified in the Landscape Documentation Package meet the water allocation specified by the local water purveyor.

- A. **Prior to Construction.** Prior to construction, Planning Division shall do the following:
- 1. Provide the project applicant a copy of the Landscape Regulations and procedures for design review, plan checks, or permits. Copies of the reference Evapotranspiration Table, Water Efficient Landscape Worksheet, Water Budget Calculation Sheet, a Certification of Completion form shall be provided in the landscape application form.
 - 2. Review the Landscape Documentation Package submitted by the project applicant.
 - 3. Approve or deny the Landscape Documentation Package.
 - 4. Complete the design review, approved the plans, and issue a permit.
 - 5. Upon approval of the Landscape Document Package, submit an electronic copy of the Water Efficient Landscape Worksheet to the local retail water purveyor.
- B. **During Construction.** During construction, the project applicant shall do the following:
- 1. Maintain an approved Landscape Documentation Package at the job site.
 - 2. Maintain an approved copy of the Landscape Permit and a record the date of the approval of the landscape Permit.
- C. **Post Completion.** Upon completion of all landscape design, the project applicant shall do the following:
- 1. Obtain a Certificate of Completion signed by Planning Division.

2. Submit an electronic copy of the approved Landscape Documentation Package along with the record drawings, and an electronic copy of the Water Efficient Landscape Worksheet to the local retail water purveyor.
- D. **On-Going Responsibility.** The applicant's on-going responsibility after Planning Division signs off the Certificate of Completion is to contact the local retail water purveyor, or a certified landscape irrigation auditor, and secure a landscape audit that will include a recommended irrigation schedule.
- E. **Establishment Period.** The first eighteen (18) months after the City approves planting shall be considered as the "establishment period" for the landscape plant materials. A bond or cash deposit will be submitted to the City, prior to issuing a Landscape Permit and held until a final inspection is conducted by the City to verify the landscape is thriving in a healthy manner. It will be the responsibility of the developer/owner to contact the City a minimum of thirty (30) days prior to end of the eighteen (18) months for the final inspection.

Section 20.330.060 Landscape Documentation Package Elements

The Landscape Documentation Package shall include following elements:

- A. **Project information.** Project information regarding the landscape project shall contain all the following:
1. Date of submittal.
 2. Project applicant's full name.
 3. Project address and/or assessor parcel number(s).
 4. Total existing and proposed landscape area in square feet.
 5. Define project type (e.g. new, rehabilitated, public, cemetery, owner-installed).
 6. Adjacent land uses and zoning designations.
 7. Approximate location and quantity of all proposed and existing specimen trees.
 8. Location of all existing and proposed storm, sanitary, and utility lines. Root barriers shall be required when trees are planted within five (5) feet (or as directed by the local water purveyor) of public water and sewer mains.
 9. Location of all existing and proposed contours two (2)-foot minimum.
 10. Location of proposed and existing buildings, structures and paved areas.
 11. Landscape Plans must be drawn to scale, and in cases where a grading permit is required, both landscape and grading plans must be the same scale.
 12. Provide a planting schedule with proposed plant material names (common and botanical), quantity, size, and spacing, and any special planting notes. Size of plants should be describing the actual size at the time the planted is installed.
 13. Separate landscape plan(s) submittal will be required for:
 - a. Community Facilities District (CFD) Areas.
 - b. Privately Owned Landscape Areas.

- c. Homeowners' Association (HOAs).
 - d. Master Development Associations.
 - e. Master Retail Associations.
 14. Landscape plans must address all BMPs, coincide with grading plans, address brush management Zones, and address biological constraints.
 15. The landscape plan must also address any sight visibility triangle issue if applicable.
 16. All hardscape, i.e., decorative paving, scored concrete, trellis design, location of monument sign and other special design items must be addressed on the landscape plans.
 17. Water supply type (e.g., potable, recycle, or well, and identify the local retail water purveyor if the applicant is not served by a private well).
 18. Completed checklist of all documents in the Landscape Documentation Package.
 19. Project contacts to include contact information (name, address, and phone number) for the project applicant, landscape architect, contractor, and property owner.
 20. Applicant/property owner signature and date with the following statement: "I agree to comply with the requirements of the Water Efficient Landscape Regulations and submit a complete Landscape Documentation Package."
- B. **Water Efficient Landscape Worksheet.** See section 20.330.070 (Water Efficient Landscape Worksheet) for full worksheet information. The worksheet shall include the following:
1. Hydrozone Information Table
 2. Water Budget Calculations
 3. Maximum Applied Water Allowance (MAWA)
 4. Estimated Total Water Use (ETWU)
- C. **Soil Management Report.**
- D. **Landscape Design Plan.**
- E. **Irrigation Design Plan.**
- F. **Grading Design Plan.**
- G. **Fuel Management Plan.** Establish a meeting with the Fire Marshal early in the design process to determine if a Fuel Management Plan (FMP) is required. The fuel management area shall be design with the appropriate plant species recognized under the FMP.
- H. **Biological Constraints Plan.** If it is determined that the project site is located in a biologically sensitive area, the following shall apply:
1. The landscape plans shall be reviewed and approved by a certified biologist for:
 - a. Compatible plants that are not considered invasive.
 - b. Confirm the boundary of the biological constraint area.
 - c. Arrange for the biologist to be present for the preconstruction meeting to discuss any constraints with developer.

- d. Have the biologist assist the civil engineer in stacking the construction buffer area.
 - e. Submit a copy of all Agency Permits, a copy of an approved Property Assessment Records (PAR) and maintenance plan prior to any grading activity.
- I. **Screening of Utilities/Equipment.** A utility plan must be submitted with the site plan prior to recording easements in an effort to coordinate placement of all utilities.
 - 1. Mechanical equipment, such as cooling towers, air compressors, pool pumps, transformers, sprinkler pumps, satellite dish antennae, etc., must be adequately screened.
 - 2. Screening shall exceed the vertical height of the equipment being screened by at least six (6) inches. A three (3)-foot open area shall be maintained around such equipment to facilitate repairs.
- J. **Landscape Maintenance/Terms.** All plants shall be maintained in a healthy and thriving condition. Initially, it shall be the responsibility of the developer to maintain (water and weed) all slopes where required by the provisions of this chapter until such time as the property is occupied by reason of lease or purchase, at which time the responsibility for such maintenance shall be transferred to a mandatory Community Association. Covenants, Conditions, and Restrictions of the subject tract shall provide for acceptance of the responsibility for maintenance by the Community Association.
 - 1. Maintenance shall include restoration of any portion of a slope area affected by installation of walls, fences, pools and the like.
 - 2. A special brochure or maintenance plan shall be prepared by the responsible landscape architect for the purpose of instructing the lessee or purchasers of the property and any landscape maintenance company working on the property on the proper maintenance and watering of landscape slopes, and these landscape brochures or maintenance plan must be submitted and approved by the Planning Division prior to issuance of a building permit or as directed by the Director.

Section 20.330.070 Water Efficient Landscape Worksheet

A project applicant shall complete the Water Efficient Landscape Worksheet that contains two (2) sections (worksheet provided in landscape application).

- A. **Hydrozone Information Table.** A Hydrozone Information Table for the Landscape project provided in the landscape application handout from the Planning Division.
- B. **Water Budget Calculation.** A Water Budget Calculation (provided in the landscape application in Planning Division) for the landscape project. For the calculation of the maximum Applied Water Allowance and Estimated Total Water Use, a project applicant shall use the ETo values from the reference Evapotranspiration Table provided in the landscape application handout from the Planning Division. Water budget calculations shall adhere to the following requirements:
 - 1. The plant factor used shall be from Water Use Classification of Landscape Species (WUCOLS) published by the California Department of Water Conservation. The plant

factor ranges from 0 to 0.3 for low water use, 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 Area shall be identified and its water use calculation as described below.
4. Evapotranspiration Adjustment Factor (ETAF) for Special Landscape Area Water Allowance shall not exceed 1.0. ETAF for existing; nonrehabilitation landscape is 0.8.

C. **Maximum Applied Water Allowance Equations (MAWA).** MAWA and estimate total water usage calculations shall be performed for all landscape project subject to this chapter consistent with Table 20.330-1.

Table 20.330-1
Maximum Applied Water Allowance Equations

Equation	Assumptions
Maximum Applied Water Allowance (MAWA) Landscape projects maximum applied water allowance shall be calculated using this equation:	
$MAWA = (ET_o)(0.62)[0.7 \times LA + SLA]$	MAWA = Maximum Applied Water Allowance (gallons per year) ET_o = Reference Evapotranspiration (inches per year). 0.7 = ET Adjustment Factor LA = Landscape Area includes Special Landscape Area (square feet) .62 = Conversion Factor (to gallons per square foot) SLA = Portion of the landscape area identified as Special Landscape Area (square feet) 0.3 = the additional ET Adjustment Factor for Special Landscape Area (1.0 - .07 = .03).
Estimate Total Water Use (shall not exceed MAWA) Estimate total sum of the Estimated Total Water use calculations for all hydrozones shall not exceed MAWA.	
$ETWU = \frac{PF \times HA}{(ET_o)(0.62)(IE + SLA)}$	EYWU = Estimated Total Water Use per year (gallons) ET_o = Referenced Evapotranspiration (inches) PF = Plant Factor from WUCOLS (see section 20.330.040(B).) HA = hydrozone Area [high, medium, and low water use areas] (square feet) SLA = Special Landscape Area (square feet) .062 = Conversion Factor IE = Irrigation Efficiency (minimum (0.71)

D. **Soil Management Report.** In order to reduce runoff and encourage healthy plant growth, a soil management report shall be completed as follows:

1. The soil management plan shall be prepared by a licensed landscape architect, licensed civil engineer, or a licensed architect.
2. Submit soil sample 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; and
 - b. The soils analysis shall include:
 - i. Soil texture

- ii. Infiltration rate determined by laboratory test or soil texture infiltration rate table
- iii. pH level
- iv. Total soluble salts
- v. Sodium level
- vi. Percentage of organic matter
- vii. Recommendations about the soil amendments may be necessary to foster plant growth and plant survival in the landscape area using efficient irrigation techniques

3. The project applicant shall comply with one (1) of the following:

- a. If the project does not exceed the movement of greater than fifty (50) cubic yards of dirt, the soil analysis report shall be submitted to Development Services as part of the Landscape Documentation Package.
- b. If greater than fifty (50) cubic yards of dirt is moved, the soil analysis report shall be submitted accompanied by the Certificate of Completion.
- c. The soils analysis report shall be readily available to the professionals preparing the landscape and irrigation design plans.
- d. The project applicant shall submit documentation verifying implementation of the soil analysis report recommendations to Development Services with the Certificate of Completion.

E. **Landscape Design Plan.** For efficient use of water, a landscape plan shall be carefully designed and planned for the intended function of the project. A landscape design plan meeting 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 total landscape area does not exceed the maximum Applied Water Allowance. To encourage the efficient use of water, the following is highly recommended:
 - i. Protection and preservation of native species and natural vegetation;
 - ii. Selection of water-conserving plant species and turf species;
 - iii. Selection of canopy shading; and
 - iv. Selection of plants base on disease and pest resistance.
- b. Each hydrozone shall have plant materials with similar water use, with the exception of plants with mixed water use. For hydrozones with plants of mixed use, refer to Section 20.330.070(G) (Hydrozone Design) for more information. Plants shall be selected and planted appropriately based upon their adaptability to climate, geologic, and topographical conditions of the project site. To encourage the efficient use of water, the following is highly recommended:
 - i. Use the Sunset Western Climate Zone that takes into account temperature, humidity, elevation, terrain, latitude, and varying degrees of continent and marine influence on local climate.

- ii. Recognize the horticulture attributes of plants (i.e., mature plant size, invasive surface roots) to minimize damage to property or infrastructure (e.g., building, sidewalks, power lines).
 - iii. Consider the solar orientation for plant placement to maximize summer shade and winter solar gain.
 - c. Turf is not allowed on slopes greater than twenty-five percent (25%) where the toe of the slope is adjacent to an impermeable hardscape and where twenty-five percent (25%) means one (1) foot of vertical elevation change for every four (4) feet of horizontal length (rise divided by run x 100 = slope percent).
 - d. A landscape design plan for projects in fire-prone areas shall address fire safety and prevention. A defensive space or Zone around the Zone a building or structure is required per Public Resources Code Section 4291(a) and (b). Avoid fire-prone plant materials and highly flammable mulches.
 - e. The use of invasive and/or noxious species is prohibited.
 - f. Invasive species of plants shall be avoided especially near parks, buffers, greenbelts, water bodies, and open spaces because of their potential cause to harm to environmentally sensitive areas.
 - 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 an effect of prohibiting the use of low-water use plants as a group (Civil Code Section 1358.8).
2. Water Features. Re-circulating water shall be used for water features. Water features must comply with San Diego County Department of Environmental Health standards. Surface area of a water feature shall be included in the high water use hydrozone area of the water budget calculations.
- a. Mulch and Amendments:
 - i. A minimum four (4)-inch layer of mulch shall be applied on all exposed soil surfaces of planting areas except in turf area, creeping or rooting groundcovers or direct seeding applications where mulch is contraindicated.
 - ii. Stabilizing mulching products shall be used on slopes.
 - iii. The mulching portion of the seed/mulch slurry in hydro-seeded applications shall meet the mulching requirements.
 - iv. Soil amendments shall be incorporated according to recommendations of the soil report and what is appropriate for plants selected (see section 20.330.070[D] [Soil Management Report]).
 - b. The landscape design shall at a minimum contain the following:
 - i. Delineate and label hydrozone by number, letter, or other method.

- ii. Identify each hydrozone as low, moderate, highwater use, or mixed water-use. Temporarily irrigated areas of the landscape shall be included in the low water use hydrozone for the water budget calculation.
- iii. Identify recreation areas.
- iv. Identify areas permanently and solely dedicated to edible plants.
- v. Identify areas irrigated with recycled water.
- vi. Identify type of mulch and application depth.
- vii. Identify soil amendments, type, and quantity.
- viii. Identify type and surface area of water features.
- ix. Identify hardscapes (pervious and on-pervious).
- x. 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 plans and examples include the following:
 - 1. Infiltration beds, swales and basins that would 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.
- xi. Identify any applicable rain harvesting or catchment technologies (e.g., rain gardens cisterns).
- xii. The landscape design shall have the following statement: "I have complied with the criteria of this chapter and applied them for the efficient use of water in the landscape design plan."
- xiii. The signatures of a licensed landscape architect, licensed landscape contractor, or any other applicable landscape professional, person, licensed or unlicensed, as listed in the Business and Professions Code, California Code of Regulations, or Food and Agricultural Code.

F. **Irrigation Design Plan.** For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufacturer 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. Automatic irrigation controllers utilizing either evapotranspiration or moisture sensor data shall be required for irrigation scheduling in all irrigation systems.
- 2. The irrigation system shall be designed to ensure that the dynamic pressure at each emission device is within the manufactures recommended pressure range for optimal performance:

- a. 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.
 - b. 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 design stage. If the measurements are not available at the design stage, the measurement shall be conducted at installation.
3. Sensors (rain, freeze, wind, etc.) either integral or auxiliary, that suspend or alter irrigation operation during unfavorable weather conditions such as rain or a freeze shall be required on all irrigation systems, as appropriate for local climate conditions. Irrigation should be avoided during windy or freezing weather or during rain.
4. Manual shut-off valves (such as gate valves, 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 break) or routine repair.
5. If separate water meters are proposed, backflow prevention devices shall be required to protect the water supply from contamination by the irrigation system. A project applicant shall contact the San Diego County Department of Environmental Health for additional backflow prevention requirements.
6. High flow sensors that detect and report high flow conditions created by system damage or malfunction are recommended.
7. 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.
8. Relevant information from the soil management plan, such as soil type and infiltration rate, shall be used when designing irrigations systems.
9. The design of the irrigation system shall conform to the hydrozones of the landscape design plan.
10. The irrigation system must be designed and installed to meet, at a minimum, the irrigation efficiency criteria as described in section 20.330.070(C) (Maximum Applied Water Allowance Equations).
11. The project applicant shall inquire with the retail water purveyor about peak hour water operating demands (on the water supply system) or water restrictions that may impact water availability or water pressure and could compromise the effectiveness of the irrigation system.
12. In mulched planting areas, the use of low volume water irrigation is required to maximize water infiltration into the roots.
13. Sprinkler heads and other emission devices shall have matched precipitation rates, unless otherwise directed by the manufactures specifications.

14. Head to head coverage is recommended. However, sprinkler spacing shall be set to achieve distribution uniformity using the manufactures specifications.
15. Swing joints or other riser-protection components are required on all risers subject to damage that are adjacent to high traffic areas.
16. Check valves or anti-drain valves are required for all irrigation systems.
17. 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 technology.
18. Overhead irrigation shall not be permitted within twenty-four (24) inches of any non-permeable surface. Allowable irrigation within the setback from a non-permeable surface 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:
 - 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 strict adherence to irrigation system design criteria in section 20.330.070(F)(7) (Irrigation Design Plan). Prevention of overspray and runoff must be confirmed during irrigation audit.
19. Slopes greater than twenty-five percent (25%) shall not be irrigated with an irrigation system with a precipitation rate exceeding three-quarter (0.75) inch per hour. This restriction may be modified if the landscape designer specifies 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.
20. The irrigation design plan shall contain the following statement: "I have complied with the criteria of this chapter and applied them accordingly for the efficient use of water in the irrigation design plan."
21. Provide the signature of a licensed landscape architect, certified irrigation designer, licensed landscape contractor, or any other applicable landscape professional person, authorized to design an irrigation system as listed in the Business and professional Code, California Code of Regulation, or Food and Agriculture Code.

G. Hydrozone Design.

1. Each valve shall irrigate a hydrozone with a similar site, slope, sun exposure, soil conditions, and plant materials with similar water use.
2. Sprinkler heads and other emission devices shall be selected based on what is appropriate for the plant type within that hydrozone.
3. Where feasible, trees shall be place on separate valves from shrubs, groundcovers, and turf.

4. Individual hydrozones that mix plants of moderate and low water use or moderate and high water use, may be allowed if:
 - a. Plant factor calculation is based on the proportions of the respective plant water uses and their plant factor or
 - b. The plant factor of the higher water using plant is used for calculations.
5. Individual hydrozones that mix high and low water use plants shall not be permitted.
6. On the landscape design plan and irrigation design plan, hydrozones 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 (provided in the landscape application handout from the Planning Division). This table can also assist with pre- and final inspections of the irrigation system and programming the controller.
7. If proposed, show location and size of separate water meters for landscape.
8. Show 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 devices.
9. Show the static water pressure at the point of connection to the public water supply.
10. Describe the flow rate (gallons per minute), application rate (inches per hour) and design operating pressure (pressure per square inch) for each station.
11. Indicate if there is recycle water being used for the irrigation system and if so, as specified in section 20.330.070(N) (Recycled Water).
12. For the efficient use of water, an irrigation system shall meet all the requirements listed in this section and the manufactures specifications. 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.
13. Weather-based irrigation controllers or soil moisture-based controllers or other self-adjusting irrigation controllers shall be required for irrigation scheduling in all irrigation systems.

H. Grading Design Plan.

1. For efficient use of water, grading of a project site shall be designed to minimize soil erosion, runoff, and water waste. A grading design plan shall be submitted as part of the Landscape Documentation Package. A comprehensive grading plan shall be prepared by a civil engineer, that satisfies this requirement.
2. The project applicant shall submit a landscape grading plan that indicates finish configurations and elevations of the landscaping area, including the following:
 - a. Height of graded slopes
 - b. Drainage patterns
 - c. Pad elevations
 - d. Finished grade

- e. Storm water retention improvements, if applicable
- 3. Prevent excessive erosion and runoff by BMP design.
- 4. The grading design plan shall contain the following statement: "I have complied with the criteria of this chapter and applied them accordingly for the efficient use of water in the grading design plan" and the signature of a licensed professional as authorized by law.

I. Certificate of Completion.

- 1. The Certificate of Completion (sample provided in landscape application) shall include the following information and documentation:
 - a. Date
 - b. Project name
 - c. Project applicant name, telephone, and mailing address
 - d. Project address and location
 - e. Property owner name, telephone number, and mailing address
 - f. 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 Document Package
 - g. Irrigation audit report, see section 20.330.070(L) (Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis)
 - h. Parameters used to set the controller; see section 20.330.070(H)(2) (Grading Design Plan)
 - i. Landscape and irrigation maintenance schedule; see section 20.330.070(K) (Landscape and Irrigation Maintenance Schedule)
 - j. Soils analysis report and documentation verifying implementation of soil report recommendations; see section 20.330.070(D) (Soil Management Report)
- 2. The project applicant shall do as follows:
 - a. Submit the signed Certificate of Completion to the Planning Division for review.
 - b. Ensure that electronic copies of the approved Certificate of Completion are submitted to local retail water purveyor and property owner or his/her designee.
- 3. The Planning Division shall do the following:
 - a. Receive the Certificate of Completion from the project applicant.
 - b. Approved or deny the Certificate. If the Certificate of Completion is denied, the Planning Division shall provide information to the project applicant regarding reapplication, appeal or other assistance.

J. Irrigation Scheduling.

- 1. For efficient use of water, all irrigation schedules shall be developed, managed, and evaluated to use the minimum amount of water required to maintain plant health. Irrigation schedules shall meet the following criteria:
 - a. Irrigation scheduling shall use automatic irrigation systems controllers.

- b. Overhead irrigation shall be scheduled for between 6:00 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 (2) shall apply. Operation of the irrigation system outside of the normal watering window is allowed for auditing and system maintenance.
 - c. 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 MAWA. Actual irrigation schedules shall be based on current time reference evapotranspiration data (e.g., CIMIS or soil moisture sensor).
- 2. Parameters used to set the controller shall be developed and submitted for each of the following:
 - a. The plant establishment period;
 - b. The established landscape; and
 - c. Temporary irrigated areas.
- 3. Each irrigation schedule shall consider for each station all of the following that apply:
 - a. Irrigation interval (days between irrigation)
 - b. Irrigation run times (hours or minutes per irrigation event to avoid runoff)
 - c. Number of cycle starts required for each irrigation event to avoid runoff
 - d. Amount of applied water scheduled to be applied on a monthly basis
 - e. Application rate setting
 - f. Root depth setting
 - g. Plant type setting
 - h. Soil type
 - i. Slope factor setting
 - j. Shade factor setting
 - k. Irrigation uniformity or efficiency setting

K. Landscape and Irrigation Maintenance Schedule.

- 1. Landscape 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 any obstruction to emission devices. Operation of the irrigation system outside of 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.

L. 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, as described in section 20.330.020 (Applicability).
 - a. The project applicant shall submit Certificate of Completion to the Planning Division along with a certification statement from the landscape architect certifying that the landscaping and irrigation system have been installed according to the approved plans.
 - b. The Planning Division shall administer programs that may include, but not be limited to, irrigation water use analysis, irrigation audits and irrigation surveys for compliance with the maximum applied water allowance.

M. Irrigation Efficiency. For the purpose of determining the 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 average landscape irrigation efficiency of 0.71.

N. Recycled Water. The installation of recycled water irrigation systems shall allow for the current and future use of recycled water, unless a written exemption has been granted as described in section 20.330.100 (Waivers Application & Review Procedure). Otherwise, irrigation systems must comply with San Diego County Department of Environmental Health standards.

1. Landscape using recycled water are considered Special Landscape Areas. The ET Adjustment Factor for Special Landscape Areas shall not exceed 1.0.
2. All recycled water irrigation systems shall be designed and operated in accordance with all applicable local and state laws.

O. Storm Water Management. Storm water management practices minimize runoff and increase infiltration that recharges groundwater and improves water quality. Implementing storm water best management practices into landscape and grading design plans to minimize runoff and to increase on-site retention and infiltrations are encouraged.

1. Project applicants shall refer to both the City's Storm Water Program Manager and Regional Water Quality Control Board for information on any storm water regulations and storm water management plans.
2. Rain gardens, cisterns, and other landscape features and practices that increase rainwater capture and create opportunities for infiltration, on-site storage, and any other means of storm water management as required by the City Engineer.

P. Public Education. The City shall provide information to owners of new, single-family residential homes regarding design installation, management and maintenance of water efficient landscapes. The owners shall contact the local retail water purveyor for additional information.

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

Q. Irrigation Audit, Irrigation Survey and Irrigation Water Use Analysis.

1. For all existing landscape installed before January 1, 2010, that are one (1) or more acres, the City shall administer programs to encourage irrigation water use analysis, 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 landscape. The Maximum Applied Water Allowance for existing landscape shall be calculated as: $MAWA = (0.8)(ET_o)(LA)(0.62)$.
2. For all existing landscape installed before January 1, 2010, that do not have a meter, the local agency shall administer programs to encourage irrigation surveys and irrigation audits to evaluate water use and provide recommendations as necessary in order to prevent water waste.
 - a. Maximum Applied Water Allowance for existing landscapes shall be calculated as $MAWA = (0.8)(ET_o)(LA)(0.62)$.
 - b. The audits shall comply with the Irrigation Association Certified landscape Irrigation Auditor training Manual (2204) or the most current edition.
 - c. All landscape irrigation audits shall be conducted by a certified landscape irrigation auditor.

R. Water Waste Prevention. The City and the local retail water purveyors, in concert with the Regional Water Quality Control Board, shall discourage water waste resulting from inefficient landscape irrigation by prohibiting runoff from leaving the target landscape due to, low head drainage, overspray, or other similar conditions where water flows onto adjacent property, non-irrigated areas, walks, roadways, parking lots or structures. Penalties for violation of these prohibitions shall be administered by agencies appropriately authorized.

S. Effective Precipitation. Effective Precipitation (twenty-five percent [25%] of annual precipitation) in tracking water use and may use the following equation to calculate maximum Applied Water Allowance: $MAWA = (ET_o - Eppt)[(0.7 \times LA) + (0.3 \times SLA)]$.

Section 20.330.080 Landscape Bonds/Cash Deposit/Letter of Credit

A special Landscaping Performance Bond, Cash Deposit, or Letter of Credit in an amount established by the Director and in a form approved by the City Attorney, shall be posted by the developer to guarantee that the planting will become permanently established. This bond will become effective upon certification that all landscape is planted per the approved landscape plan and will be held by the City for minimum of

eighteen (18) months unless it can be proven that the landscape is thriving in a healthy condition under an approved maintenance plan.

Section 20.330.090 Violations and Penalties

A. **Violations.** Violations shall be considered as follows:

1. Removal of existing mature landscape without approval by the City.
2. Damage to existing mature landscape.
3. Any person who violates any of the provisions of this chapter shall be punishable by a fine under chapter 1.12 and chapter 1.14 of this Code.
4. Each such person shall be guilty of a separate offense for each and every day during any portion of which any violation is committed, continued or permitted by any such person.
5. In addition to receiving any fines or other monetary remuneration, the City shall have the right to seek injunctive relief for any and all violations of this chapter and all other remedies provided by law or in equity.
6. The retail water purveyors shall establish and administer penalties for water waste violations, which can lead to restrictions on irrigation water deliveries.

B. **Penalties.** The City may establish and administer penalties to the project applicant for noncompliance with this chapter, to the extent permitted by law.

Section 20.330.100 Waivers Application & Review Procedure

The City may administratively waive or modify one (1) or more requirements of this chapter when unusual circumstances make their strict application impossible, and upon a determination that the waiver or variance is consistent with the purpose and intent of this chapter.

A. **Waiver Application.** Applications for waiver shall be submitted to the Director. Application for waiver shall include the following information:

1. Name of applicant.
2. Address or location of site, including Assessor's Parcel Number.
3. Calculations of the total area of the site to be landscaped.
4. A minimum of eight (8) photographs of the site, four (4) looking into the property and four (4) looking out from the property from each cardinal direction.
5. An explanation of the reason for the waiver request.

B. **Waiver Review Process.** The Director shall review the application and upon determination of one (1) of the following findings, may grant a waiver:

1. Practical difficulties make the strict application of this chapter feasible.
2. The waiver is consistent with the purpose and intent of this chapter.
3. Full compliance with the requirements of this chapter would not materially contribute to the objectives of water conservation.

Section 20.330.110 Conflict, Enforcement, and Interpretation

In the event of a conflict between this chapter and another chapter of this Zoning Ordinance, the more restrictive shall apply.

Section 20.330.120 Appeal Process

A Landscape Permit is required if a developer or property owner is proposing landscape designs under this chapter. The decision of the final decision-making body or official is final and effective ten (10) calendar days after adoption or the resolution or written decision, unless within such ten (10)-day period the applicant or any other interested party or person files a written appeal utilizing the same appeal procedure to the other permits that are processed concurrently with the Landscape Permit. If no other discretionary permits are being processed concurrently with the Landscape Permit, then the appeal procedures in chapter 20.545 (Appeals and Revocations) shall apply.