

CITY OF MERCED

"Gateway to Yosemite"



September 30, 2010

Mr. Peter Brostrom
California Department of Water Resources
Water Use and Efficiency Branch
P.O. Box 942836
Sacramento, CA 94236-0001

RE: Water Efficient Landscape Ordinance

Dear Mr. Brostrom,

Per Mr. Alemi's letter of August 30, 2010, attached is a copy of the City of Merced's Water Efficient Landscaping and Irrigation Ordinance, adopted by Ordinance #1841. If you have any questions, please don't hesitate to call me at (209) 385-6858 or by email at espinosak@cityofmerced.org.

Sincerely,

A handwritten signature in cursive script, appearing to read "Kim Espinosa".

Kim Espinosa
Planning Manager

cc: Ken Rozell, Deputy City Attorney IV

**Merced, California, Code of Ordinances >> Title 17 - BUILDINGS AND CONSTRUCTION >>
Chapter 17.60 - WATER EFFICIENT LANDSCAPING AND IRRIGATION >>**

Chapter 17.60 - WATER EFFICIENT LANDSCAPING AND IRRIGATION

Sections:

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- 17.60.030 - Standards of landscape design/implementation.
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| 17.60.010 - Purpose, authority and intent.

Landscaping under this chapter is intended to:

- A. Enhance the environmental value and physical appearance of development in the city.
- B. Improve the environmental performance of development by: reducing heat, glare and noise; promoting the percolation of storm water, aid in improving air quality; and buffering potentially incompatible land uses from one another, and;
- C. Promote the conservation of water and preservation of water quality by requiring drought tolerant plant material in landscaping and the retention of existing natural vegetation, thereby reducing the need for irrigation, pesticides, herbicides, and fertilizers.

(Ord. 1841 § 1 (part), 1993).

| 17.60.020 - Applicability.

Whenever landscaping or landscaping and irrigation plans are required by a condition of approval of a development project, the following landscape and irrigation system design and specifications shall apply.

(Ord. 1841 § 1 (part), 1993).

| 17.60.030 - Standards of landscape design/implementation.

- A. Plan preparation. It is required that a licensed landscape architect or a licensed landscape contractor be employed in preparing the landscape and irrigation plans.
- B. Plant materials. The selection of plant materials should include both evergreen and deciduous trees, shrubs and attractive dust and erosion-preventing ground cover. It is required that at least ninety percent (90%) of the plants selected in non-turf areas be well-suited to the climate of the region, be drought tolerant, and require minimal water once established in the landscape. Up to ten percent (10%) of the plants may be of non-drought tolerant variety as long as they are grouped together and can be irrigated separately. Attention shall be given to the function of the plants, their appearance, height, spread, growth rate, moisture requirements, potential root damage, disease and permit susceptibility, climatic adaptability, soil type, slope, and degree of maintenance required.
- C. Plant coverage. Landscaping shall be provided as specified in the conditions of approval of the development project. Turf shall be limited to thirty percent (30%) of the total landscaped area. Exceptions may be granted on a project by project basis. Plants shall be properly spaced and

sized that, when mature, they will fulfill their designated function. Shrubs shall be a minimum one (1) gallon in size and trees shall be a minimum of fifteen (15) gallons. Although a reasonable number of growing seasons will be allowed for full plant coverage to develop, interim ground cover may be provided during this period. Interim cover of surfacing materials may consist of rocks, gravel, wood mulch or chips, or any other acceptable material. Mulches should be a minimum of three inches (3") thick when used as an interim measure in non-ground cover areas and a minimum of two inches (2") thick in ground covers.

- D. Plant maintenance. Automated irrigation systems shall be provided to assure efficient water use with a minimum of labor and water waste. Irrigation controllers must have multiple cycle capabilities and rain sensing override switches. Plant material must be maintained in a healthy condition. Unhealthy plants shall be replaced. Planters shall be kept free of all weeds, debris and trash.
- E. Planter construction. All planter areas shall provide positive drainage away from paved areas. They shall have either a minimum six inch (6") raised concrete or treated wooden curb erected behind sidewalks and pavement areas, or shall be recessed two inches (2") below adjoining paved area with a minimum 4:1 slope away from paved edge to provide protection to the landscaping and control water runoff, silt, and erosion onto the pavement. All planters constructed adjacent to buildings or structures shall be so designed to avoid irrigation water intrusion into or on that adjacent building or structure. The size and location of planter areas shall be specified on the approved plot plan or conditions of approval. The minimum width of a shrub planter bed shall be forty (40) inches, twelve (12) inches for a ground cover planter, and sixty (60) inches where trees are planted, measured from the inside of curbing or acceptable permanent border.
- F. Compacted soils. Prior to the planting of any materials the compacted soils surrounding a building site shall be returned to a friable condition. Friable condition shall mean returning the soil to an easily crumbled or loosely compacted condition down to a minimum depth per planting material requirements, whereby the root structure of the newly planted material will be allowed to spread unimpeded.

(Ord. 1841 § 1 (part), 1993).

17.60.040 - Landscape plan specifications.

- A. The landscape plan shall be submitted for review and approval by the city in accordance with the standards of landscape design set forth in this chapter.
- B. One (1) copy of all building elevations and site grading plans or one (1) copy of all building plans shall be submitted together with the landscape plan. The building elevation and site grading plans shall be in sufficient detail to permit determination of the location, width and height of all doors and windows and roof over hangs on all proposed buildings within or adjacent to proposed landscape areas.
- C. The landscape plans shall be legible and drawn to a scale no smaller than one (1) inch equals twenty (20) feet. Maximum sheet size on all drawings shall be 24" x 36".
- D. The landscape plans shall include property lines, important dimension lines, setback lines, walls and fences, driveways, adjacent street, outline of all structures and adjacent land uses.
- E. The landscape plans shall indicate planting details, and may indicate pre-emergent soil treatment and materials.
- F. The results of soil tests for horticultural suitability shall be submitted with the landscape plan. Soils shall be prepared and/or amended as appropriate.
- G. Sheet plastic and other non-porous material shall not be placed under mulch.
- H. The landscape plans shall include a plant list giving the common and botanical names of plants to be used, container size and quantities of each group of plants. This plant list shall be arranged in legend form with a key symbol assigned to each plant. Each plant shall be identified by a key symbol on the plan. The size of the plant, the quantity to be used shall follow in the legend, as the following example illustrates.

No.	Botanical Name	Common Name	Container Size	Quantity
1.	Campanula isophylla	Italian Bellflower	Flat	6
2.	Eucalyptus polyanthemos	Silver dollar gum	15 gal.	10
3.	Pinus mugu mughus	Mugho pine	1 gal.	14

4.	Ajuga reptans	Carpet bulge	Flat	5
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(Ord. 1841 § 1 (part), 1993).

17.60.050 - Irrigation plan specifications.

- A. Irrigation plans shall be submitted with the landscape plans for review and approval by the city to ensure adequate irrigation coverage and compliance with city requirements. The irrigation system shall be designed with water conservation in mind. Wind direction, surface drainage, soil type and application method shall be considered.
- B. The irrigation plan shall indicate electrical power point of connection, the water system point of connection and size, water pressure available and maximum demand of the system in gallons per minute or gallons per hour if appropriate. Reclaimed water may also be used as an alternate irrigation water source if it is supplied through a dual distribution system that conforms to Merced County Health Department Standards.
- C. Irrigation equipment specified must be identified by manufacturer's name and equipment identification number.
- D. Performance data for irrigation heads and emitters including discharge rates, effective diameter and operating pressure shall be listed in the irrigation legend.
- E. All locations of irrigation valves, controllers, hose bibs, quick coupler valves, sprinkler heads, backflow prevention devices, valves, filters, pressure regulators, emitters, rain switches and moisture sensors must be indicated.
- F. Irrigation details must be provided to clarify particular situations. Typical details should include backflow prevention devices, valves, irrigation heads, emitters, filters, pressure regulators, moisture sensors, rain switches, check valves, irrigation controllers and any required enclosures. Manufacturer's specification sheets may be substituted for details.
- G. All irrigation lines must be sized.
- H. Schedule 40 PVC pipe is required under all paved areas. All pipe under paved areas shall be placed in a minimum four-inch schedule 40 PVC pipe sleeve for protection and ease of replacement. Piping must be installed a minimum of twelve (12) inches underground for nonpressure irrigation lines and eighteen (18) inches underground for constant pressure irrigation lines. Emitter distribution tubing may be located at grade.
- I. Irrigation watering schedules for the entire year must be provided on irrigation drawings. These schedules will include an establishment (first twelve (12) months) and post establishment period. Post establishment schedules will be divided into four (4) quarters. Those quarters are winter, spring, summer, and fall.
- J. Pop-up sprinklers in turf areas shall have minimum four inch pop-up height. Sprinkler coverage shall be one hundred (100) percent. Heads shall be placed at a maximum of fifty (50) percent of the diameter of throw (head to head) unless specific justification is provided for greater spacing. Sprinkler heads must have matched precipitation rates within each control valve circuit. Sprinklers and sprays shall not be used in areas less than eight (8) feet wide. Drip and bubblers that do not exceed one and one-half (1.5) gallons per minute per device shall be used.
- Rain switches are required on landscapes of fifty thousand (50,000) square feet or larger and shall be installed as shown on the plans or as directed by the landscape architect or the licensed landscape contractor.
- Irrigation systems shall avoid runoff, low head drainage, over spray, or similar conditions where water flows onto adjacent property, nonirrigated areas, walks, roadways or structures.
- Serviceable check valves are required where elevation differential may cause low head drainage.
- Irrigation controllers must be capable of dual or multiple programming. Controllers must have multiple cycle start capacity and a flexible calendar program. Controllers shall be set to operate when evaporation is at a minimum. Water application rates shall be less than .25 inches per cycle. A minimum of a one-hour period shall be allowed prior to the application of additional water.
- K. Decorative water features shall use recirculating water systems.
- L. Copies of pressure/flow calculations shall accompany the irrigation plans.

(Ord. 1841 § 1 (part), 1993).

17.60.060 - Maintenance.

The landscaping and irrigation system shall be maintained in accordance with the approved landscape and irrigation plan. Maintenance includes removal of weeds, litter or other debris and replacement of dead plant materials.

(Ord. 1841 § 1 (part), 1993).

17.60.070 - Definitions.

- A. "Backflow prevention device" shall mean a safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.
- B. "Check valve" shall mean a valve located under a sprinkler head to hold water in the system so it minimizes drainage from the lower elevation sprinkler heads.
- C. "Emitters" shall mean drip irrigation fittings that deliver water slowly from the system to the soil.
- D. "Friable condition" shall mean returning the soil to an easily crumbled or loosely compacted condition down to a minimum depth per planting material requirement, whereby the root structure of newly planted water conserving plants will be allowed to spread unimpeded.
- E. "Landscaped area" shall mean the total area of the site not covered by buildings, non irrigated portions of parking lots, driveways, patios, plazas, sidewalks, hardcourts, swimming pools, spas and parkway areas.
- F. "Mulch" shall mean any material such as leaves, bark, straw or other materials left loose and applied to the soil surface to reduce evaporation.
- G. "Rain switch" shall mean a system which manually or automatically shuts off the irrigation system when it rains.
- H. "Reclaimed water" shall mean treated or recycled waste water of a quality suitable for nonpotable uses such as landscape irrigation; not intended for human consumption.
- I. "Turf" shall mean a single-bladed grass or sod.
- J. "Water conserving plant" shall mean any plant which exhibits drought tolerant characteristics, that is to say, will, in designed location, survive with limited supplemental water. Cool season grass, hybrid tall type fescues and warm season grasses shall be considered water conserving. A suggested listing of these plants shall be made available by the city and may be added to at the discretion of the city representative upon the recommendation of landscape architects or licensed landscape contractors.

(Ord. 1841 § 1 (part), 1993).
