

Palm Desert Municipal Code

Chapter 24.04

WATER-EFFICIENT LANDSCAPE

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24.04.010 Purpose and intent.

A. The purpose of this chapter is to establish minimum water-efficient landscape requirements for newly installed and rehabilitated landscapes. It is also the purpose of this chapter to implement these minimum requirements to meet the State of California Code of Regulations Title 23, Water Division 2, Department of Water Resources Chapter 2.7 Model Water Efficient Landscape Ordinance and the State of California Water Conservation in Landscaping Act, Reference: Sections 65591, 65593, 65596 Government Code.

B. Coachella Valley Water District (CVWD) has created a water-efficient landscape ordinance in compliance with the Department of Water Resources Model Water Efficient Landscape Ordinance; Attachment A of Ordinance 1302.1 Landscape and Irrigation System Design Criteria (CVWD Ordinance). It is the intent of the city council to defer technical irrigation review and approval process to CVWD consistent with the CVWD Ordinance. The city will have full authority over aesthetic (plant choice, spacing, and design) review.

C. It is the intent of the city council to promote water conservation through the planning, design, installation, and maintenance of landscapes by the use of climate-appropriate plant material and efficient irrigation as well as to create a Palm Desert landscape theme through enhancing and improving the physical and natural environment.

D. These provisions are supplementary and additional to the subdivision and zoning regulation of this code and shall be read and construed as an integral part of the regulations and controls established thereby. (Ord. 1201 § 1, 2010)

24.04.020 Definitions.

The words used in Section 0.00.020 of the CVWD Ordinance have the meanings set forth below.

Antidrain Valve or Check Valve. A valve located under/in a sprinkler head to hold water in the system to eliminate drainage from the lower elevation sprinkler heads.

Application Rate. The depth of water applied to a given area, usually measured in inches per hour and is also known as precipitation rate (sprinklers) or emission rate (drippers/microsprayers) in gallons per hour.

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

Automatic Controller. Electronic or solid-state timer capable of operating valve stations to set the days, time and length of time of a water application.

Backflow Prevention Device. A safety device used to prevent pollution or contamination of the water supply due to the reverse flow of water from the irrigation system.

Beneficial Use. Water used for landscape evapotranspiration.

Billing Units. Units of water (100 cubic feet = 1 billing unit = 748 gallons = 1 CCF) for billing purposes. To convert gallons per year to one hundred cubic feet per year, divide gallons per year by seven hundred forty-eight (748 gallons = 100 cubic feet).

Conversion Factor (0.62). Is considered the number that converts the maximum applied water allowance from acre-inches per acre to gallons per square foot. The conversion factor is calculated as follows:

$$(325,851 \text{ gallons}/43,560 \text{ square feet})/12 \text{ inches} = (0.62)$$

325,851 gallons = one acre-foot

43,560 square feet = one acre

12 inches = one foot

Desert Landscape. A desert landscape using native plants spaced to look like a native habitat.

Distribution Uniformity. Is the measure of how evenly sprinklers apply water. The low-quarter measurement method (DULQ) utilized in the irrigation audit procedure is utilized for the purposes of these criteria. These criteria assume an attainable performance level of seventy-five percent DULQ for spray heads, eighty percent DULQ for rotor heads and eighty-five percent DULQ for recreational turf grass rotor heads.

District. The Coachella Valley water district.

Drip Irrigation. A method of irrigation where the water is applied slowly at the base of plants without watering the open space between plants.

Ecological Restoration Project. Is a project where the site is intentionally altered to establish a defined, indigenous, historic ecosystem.

Effective Precipitation or Usable Rainfall. The portion of total natural precipitation that is used by the plants, usually assumed to be three inches annually. Precipitation or rainfall is not considered a reliable source of water in the desert.

Electronic Controllers. Are time clocks that have the capabilities of multiprogramming, water budgeting and multiple start times.

Emission Uniformity. Is the measure of how evenly drip and microspray emitters apply water. The low-quarter measurement method (EULQ) utilized in the landscape irrigation evaluation procedure is utilized for the purposes of these criteria. These criteria assume ninety percent EULQ for drippers, microsprays and pressure compensating bubblers.

Emitter. Drip irrigation fittings that deliver water slowly from the watering system to the soil.

Established Landscape. The point at which new plants in the landscape have developed roots into the soil adjacent to the root ball.

Establishment Period. Is the first year after installing the plant in the landscape.

Estimated Annual Total Applied Water Use (Total of All Hydrozones). The annual total amount of water estimated to be needed by all hydrozones to keep the plants and water features in the landscaped area healthy and visually pleasing. It is based upon such factors as the local evapotranspiration rate, the size of the landscaped area, the size and type of water feature, the types of plants, and the efficiency of the irrigation system. The estimated annual total applied water use shall not exceed the maximum applied water allowance (MAWA).

Estimated Total Water Use (By Hydrozone). The portion of the estimated annual total applied water use that is derived from applied water to a specified hydrozone.

Evapotranspiration or ET. The quantity of water evaporated from adjacent soil surfaces and transpired by plants expressed in inches during a specific time.

ET Adjustment Factor. A factor of 0.5 that, when applied to reference evapotranspiration, adjusts for plant factors and irrigation efficiency, two major influences upon the amount of water that needs to be applied to the landscape. A combined plant mix with a site-wide average 0.38 is the basis of the plant factor portion of this calculation. The irrigation efficiency for purposes of the ET adjustment factor is 0.75. Therefore, the ET adjustment factor $(0.5) = (0.38/0.75)$.

Finished Grade. Grade height after surface mulch covering has been installed.

Flow Rate. The rate at which water flows through pipes, valves and meters (gallons per minute or cubic feet per second).

Hardscape. Concrete or asphalt areas including streets, parking lots, sidewalks, driveways, patios and decks.

Head-to-Head Coverage. One hundred percent sprinkler coverage of the area to be irrigated, with maximum practical uniformity.

High Flow Check Valve. A valve located under/in a sprinkler head to stop the flow of water if the spray head is broken or missing.

Hydrozone. Is the portion of the landscaped area having plants with similar water needs that are served by a valve or set of valves with the same schedule. A hydrozone may be irrigated or non-irrigated. For example, a naturalized area planted with native vegetation that will not need supplemental irrigation (once established) is a non-irrigated hydrozone.

Infiltration Rate. The rate of water entry into the soil expressed as a depth of water per unit of time (inches per hour).

Invasive Plant Species. Species of plants not historically found in California that spread outside cultivated areas and can damage environmental or economic resources.

Invasive species may be regulated by county agricultural agencies as noxious weeds. Noxious weeds are any weed designated by the weed control regulations in the Weed Control Act and identified on a regional district noxious weed control list. Lists of invasive plants are maintained at the California Invasive Plant Inventory and USDA invasive noxious weeds database.

Irrigation Efficiency. The measurement of the amount of water beneficially used divided by the amount of water applied. Irrigation efficiency is derived from measurements and estimates of irrigation system characteristics and management practices. The minimum irrigation efficiency for purposes of these regulations is 0.75 or seventy-five percent. Greater irrigation efficiency can be expected from well-designed and maintained systems.

Landscaped Area. Is the entire parcel area less the building footprint, driveways, non-irrigated portions of the parking lots, hardscapes (such as decks and patios), and other nonporous areas. Water features are included in the calculation of a site's landscaped area.

Landscape Irrigation Audit. A process to perform site inspections, evaluate irrigation systems and develop efficient irrigation schedules.

Lateral Line. The water delivery pipeline that supplies water to the emitters sprinklers from a valve.

Local Agency. Is the city, county, or water purveyor responsible for adopting and implementing the ordinance. The local agency is also responsible for enforcement of the ordinance, including, but not limited to, approval of a design review, permit, plan check, or inspection of a project.

Main Line. Is the pressurized pipeline that delivers water from the water source to a valve or outlet.

Maximum Applied Water Allowance (MAWA). For design purposes, the upper limit of annual applied water for the established landscape area as specified in Division 2, Title 23, California Code of Regulations, Chapter 7, Section 702. It is based upon the area's reference evapotranspiration, ET adjustment factor, and the size of the landscaped area. The estimated applied water use shall not exceed the maximum applied water allowance (MAWA).

Microirrigation. See Drip irrigation.

Mulch. Any organic materials such as leaves, bark, straw or inorganic material such as pebbles, stones, gravel, decorative sand or decomposed granite left loose and applied to the soil surface to reduce evaporation.

Native Plants. Native plants are low water using plants that are: (1) indigenous to the Coachella Valley and lower Colorado Desert region of California and Arizona; (2) native to the southwestern United States and northern Mexico; or (3) native to other desert regions of the world, but adapted to the Coachella Valley.

Natural Grade. Grade height of native soil before application of surface mulch.

Operating Pressure. The pressure at which an irrigation system's sprinklers, bubblers, drippers or microsprays are designed to operate, usually indicated at the base of an irrigation head.

Overhead Sprinkler Irrigation Stations. Sprinklers with high flow rates (spray heads, impulse sprinklers, gear rotors, etc.) that are utilized to apply water through the air to large irrigated areas.

Overspray. The water which is delivered beyond the landscaped area onto pavements, walks, structures or other non-landscape areas. Also known as hardscape applications.

Plant Factor. A factor that, when multiplied by reference evapotranspiration, estimates the amount of water used by plants. For purposes of these criteria, the average plant factor of very low water using plants ranges from 0.01 to 0.10, for low water using plants the range is 0.10 to 0.30, for moderate water using plants the range is 0.40 to 0.60, and for high water using plants, the range is 0.70 to 0.90. Reference: Water Use Classifications of Landscape Species III (WUCOLS III).

Pressure Compensating (PC) Bubbler. An emission device that allows the output of water to remain constant regardless of input pressure. Typical flow rates for this type of bubbler range between 0.25 gpm to 2.0 gpm.

Pressure Compensating Screens/Devices. Small screens/ devices inserted in place of standard screens/devices that are used in sprinkler heads for radius and high pressure control.

Qualified Professional. Is a person who has been certified by their professional organization or a person who has demonstrated knowledge and is locally recognized as qualified among landscape architects due to longtime experience.

Rain-Sensing Device. A system which automatically shuts off the irrigation system when it rains.

Record Drawing or As-Built. A set of reproducible drawings which show significant changes in the work made during construction and which are usually based on drawings marked up in the field and other data furnished by the contractor.

Recreational Area. Areas of active play or recreation such as golf courses, sports fields, school yards, picnic grounds, or other areas with intense foot or vehicular traffic.

Recreational Turf Grass. High traffic turf grass that serves as a playing surface for sports and recreational activities. Athletic fields, golf courses, parks and school playgrounds are all examples of areas having recreational turf grass.

Recreational Turf Grass ET Adjustment Factor. A factor of 0.82 that, when applied to reference evapotranspiration, adjusts for the additional stress of high traffic on recreational turf grass and the higher irrigation efficiencies of long-range rotary sprinklers. These are the two major influences upon the amount of water that needs to be applied to a recreational landscape. A mixed cool/warm season turf grass with a seasonal average of 0.7 is the basis of the plant factor portion of this calculation. The

irrigation efficiency of long-range sprinklers for purposes of the ET adjustment factor is 0.85. Therefore, the ET adjustment factor is $0.82 = 0.7/0.85$.

Recycled Water/Reclaimed Water. Treated or recycled wastewater of a quality suitable for non-potable uses such as landscape irrigation. Recycled water is not for human consumption.

Reference Evapotranspiration or ETo. A standard measurement of the environmental parameters which affect the water use of plants, using cool season grass as a reference. ETo is expressed in inches per day, month or year and is an estimate of the evapotranspiration of a large field of cool-season grass that is well watered. Reference evapotranspiration is used as a basis of determining the maximum applied water allowances so that regional differences in climate can be accommodated. For purposes of these criteria, CVWD Drawing No. 29523 will be used for ETo zones.

Rehabilitated Landscape. Any re-landscaping project in which the choice of new plant material and/or new irrigation system components is such that the calculation of the site's estimated water use will be significantly changed. The new estimated water use calculation must not exceed the maximum applied water allowance (MAWA) calculated for the site using a 0.5 ET adjustment factor.

Riparian Plants. Riparian plants are high water using and water-loving plants that are found growing naturally along flowing rivers and lake shores. They may also be native to wet swampy areas with high water tables or poor drainage.

Runoff. Irrigation water which is not absorbed by the soil or landscape to which it is applied and which flows from the planted area.

Service Line. Is the pressurized pipeline that delivers water from the water source to the water meter.

Smart Controller. Weather-based or soil moisture-based irrigation controls that monitor and use information about environmental conditions for a specific location and landscape (such as soil moisture, rain, wind, the plants' evaporation and transpiration rates and, in some cases, plant type and more) to automatically control when to water and when not to, providing exactly the right amount of water to maintain lush, healthy growing conditions.

Soil Moisture-Sensing Device. Is a device that measures the amount of water in the soil.

Soil Texture. The classification of soil based on the percentage of sand, silt and clay in the soil.

Sprinkler Head. A device which sprays water through a nozzle.

Static Water Pressure. Is the pipeline or municipal water supply pressure when water is not flowing.

Station. An area served by one valve or by a set of valves that operate simultaneously.

Turf. A surface of earth containing mowed grass with roots.

Valve. A device used to control the flow of water in the irrigation system.

Water Feature. Any water applied to the landscape for non-irrigation, decorative purposes. Fountains, streams, ponds and lakes are considered water features. Water features use more water than efficiently irrigated turf grass and are assigned a plant factor of 1.1 for a stationary body of water and 1.2 for a moving body of water.

Water System. The network of piping, valves and irrigation heads.

WUCOLS III. Water Use Classifications of Landscape Species III. (Ord. 1201 § 1, 2010)

24.04.030 Applicability.

This chapter applies to:

- A. All new and rehabilitated landscaping for public agency projects and private development projects including, but not limited to, industrial, commercial and recreational projects;
- B. Developer-installed landscaping in single-family and multifamily projects;
- C. New construction landscapes which are homeowner-provided and/or homeowner-hired in single and multifamily residential projects with a total project landscape area equal to or greater than five thousand square feet;
- D. Existing landscapes are limited to Section 24.04.170. (Ord. 1201 § 1, 2010)

24.04.040 Applicability—Exemptions.

The following are exempt from the provisions of this chapter:

- A. Homeowner-provided landscaping at single-family and multifamily projects; having a total project landscape area of less than five thousand square feet;
- B. Cemeteries;
- C. Registered historical sites as determined by the city council;
- D. Ecological restoration and mined-land reclamation projects that do not require a permanent irrigation system; and
- E. Plant collections, excluding typical landscaped areas, as part of botanical gardens and arboretums open to the public. (Ord. 1201 § 1, 2010)

24.04.050 Landscape documentation package.

A. One copy of the landscape documentation package conforming to this chapter shall be submitted to the city. All development projects pursuant to Section 24.04.030 shall submit two copies of a preliminary landscape design plan for review and approval. Preliminary approval of the development, specifically the landscape design plan, shall be granted by the architectural review commission prior to submittal of the landscape documentation package to the director of public works. No person, either as property owner, contractor, landscape architect or otherwise subject to the provisions of this chapter shall cause landscape construction work to begin without having an approved package or permission from the director of public works.

B. All requirements for the landscape documentation package are found in Section 0.00.030 of the CVWD Ordinance. (Ord. 1201 § 1, 2010)

24.04.060 Water-efficient landscape worksheet.

The water-efficient landscape worksheet is a required element of the landscape documentation package. A sample water-efficient landscape worksheet can be found in Appendix B of the CVWD Ordinance. (Ord. 1201 § 1, 2010)

24.04.070 Soil management report.

A. In order to reduce runoff and encourage healthy plant growth, a soils management report shall be completed by the project applicant, or designee.

B. The requirements for the soil management report are found in Section 0.00.040D of the CVWD Ordinance. (Ord. 1201 § 1, 2010)

24.04.080 Landscape design plan.

A. For efficient use of water, a landscape design plan shall be carefully designed and planned for the intended function of the project.

B. The landscape design plan shall be submitted as part of the landscape documentation package and include all requirements found in Section 0.00.030B of the CVWD Ordinance.

C. The landscape design plan shall incorporate design criteria found in the current addition of the city's "Desert Flora, Design Manual" publication. (Ord. 1201 § 1, 2010)

24.04.090 Irrigation design plan.

A. For the efficient use of water, an irrigation system and its related components shall be planned and designed to allow for proper installation, management, and maintenance.

B. The irrigation design plan shall be submitted with the landscape documentation package and include all requirements found in Section 0.00.030E of the CVWD Ordinance. (Ord. 1201 § 1, 2010)

24.04.100 Irrigation scheduling.

Irrigation schedules shall be submitted as part of the landscape documentation package and shall comply with Section 0.00.040(E)(2) of the CVWD Ordinance. (Ord. 1201 § 1, 2010)

24.04.110 Landscape and irrigation maintenance.

A regular maintenance schedule satisfying the following conditions shall be submitted with the certificate of completion:

A. Landscapes shall be maintained to ensure water efficiency. A regular maintenance schedule shall include, but not be limited to, routine inspection, adjusting and repairing irrigation equipment; aerating and dethatching turf areas; replenishing mulch; fertilizing; pruning, weeding, and removing any obstruction to emission devices in all landscaped areas.

B. Whenever possible, repair of irrigation equipment shall be done with the originally specified materials or their equivalents.

C. Operation of irrigation systems outside the normal watering window is allowed for auditing and system maintenance.

D. Landscape and irrigation maintenance activities shall be pursuant to those described in the current addition of the city's "Desert Flora, Maintenance" publication. (Ord. 1201 § 1, 2010)

24.04.120 Landscape irrigation audits.

Landscape irrigation audits shall be completed for new developments and existing landscape pursuant to Sections 0.00.040A and B of the CVWD Ordinance. (Ord. 1201 § 1, 2010)

24.04.130 Grading design plan.

Grading design plans satisfying the city grading ordinance shall be submitted as part of the landscape documentation package. For the purpose of this code, the grading design plan will be reviewed and shall include, at a minimum, finished configurations and elevations of the landscaped area, including the height of graded slopes, drainage patterns, pad elevations, finish grade, and stormwater retention improvements, if applicable. 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. (Ord. 1201 § 1, 2010)

24.04.140 Certificate of completion.

Certificates of completion shall be certified and submitted to the city pursuant to Section 0.00.040H of the CVWD Ordinance. (Ord. 1201 § 1, 2010)

24.04.150 Public education.

Information regarding the design, installation, and maintenance of water-efficient landscapes shall be provided to all property owners pursuant to Section 0.00.040J of the CVWD. (Ord. 1201 § 1, 2010)

24.04.160 Provisions for existing landscapes.

Provisions for existing landscapes shall be pursuant to Ordinance No. 1302.1, Landscape and Irrigation System Design Criteria, and its associated Attachment A of the Coachella Valley Water District. (Ord. 1201 § 1, 2010)

24.04.170 Nuisance and waste water prevention.

A. Public Nuisance Declaration. Nuisance water is a public nuisance under Section 8.20.020(T)(8). Any violation of this chapter is declared to be a public nuisance and may be abated.

B. Prohibited Acts. The operation of a landscape irrigation system that creates overspray and/or runoff onto impervious surfaces (such as sidewalks, driveways, ditches, gutters, and roadways) in the public right-of-way shall be deemed to create nuisance water when such condition is observed to exist on any three days within a seven-day period.

C. Variances. The city manager or designee may, in writing, grant variances to persons who apply in writing for water uses prohibited by Section 24.05.020 if it is found that a variance is necessary to prevent an emergency condition relating to health and safety, and if the person seeking a variance has demonstrated that he or she has implemented measures in some other manner that achieves the objectives of the chapter.

D. Enforcement. The code compliance division and employees as designated by the city manager shall be responsible for enforcement of the various subsections of this section under their respective authority or as is specifically assigned to them by the city manager. (Ord. 1201 § 1, 2010)

24.04.180 Fees for initial review and program monitoring.

A. For the purposes of meeting its obligations, under this chapter, the following fees are deemed necessary to review landscape documentation packages and monitor landscape irrigation audits and shall be imposed on the subject applicant, property owner or designee.

1. A landscape documentation package review fee will be due at time of initial project application submission to the public works department.

2. The water purveyor may require every five years the project owner/developer to cause a landscape irrigation audit to be completed by a certified landscape irrigation auditor. No city fee will be due for the review of the audit by the director of public works.

3. If a landscape documentation package is not submitted prior to the start of landscape construction work, for those persons required to submit a package, a late submittal fee of twice the review fee shall be required.

B. The city council, by resolution, shall establish the amount of the above fees in this section in accordance with applicable law. (Ord. 1201 § 1, 2010)

24.04.190 Enforcement and penalties.

A. For the purposes of ensuring that persons comply with the provisions of this chapter, the director of public works may, following written notice to subject property owner(s), initiate enforcement action(s) against such property owner(s) or designee(s), which enforcement action may include, but not be limited to, the following:

1. Revocation of a landscape documentation package;
2. Revocation of an approved conditional use permit;
3. Withholding issuance of a certificate of use and occupancy or building permit;
4. Issuance of a stop work order; and
5. Noncompliance penalty as specified in Section 1.12.010 of the city municipal code.

B. In addition to any other remedies for violation of city ordinances in force, the city may bring and maintain any action permitted by law to restrain, correct or abate any violation of this chapter; and in the event that legal action is brought by the city, reasonable attorneys' fees and court costs shall be awarded to the city and shall constitute a debt owed by the violator to the city. The city may place a lien on the affected property in the event any debts so incurred are not timely paid. (Ord. 1201 § 1, 2010)

24.04.200 Appeals.

Decisions made by the director of public works may be appealed by an applicant, property owner(s) or designee(s) of any applicable project to the city council by an application in writing to the city clerk of the city council within fifteen days from the date of notification of decision. (Ord. 1201 § 1, 2010)