

DEVELOPMENT CODE

ARTICLE 151.16 WATER CONSERVATION

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Section 151.16.001

Purpose

The City of Sierra Vista is committed to conserving water, and therefore, the following goals are established:

- A. Reduce the rate of depletion of groundwater resources.
- B. Reduce overall per capita water use.
- C. Ensure compliance with the most current and innovative water-saving conservation fixtures, appliances, and techniques.
- D. Reduce the wasting of water.
- E. Ensure the efficient delivery of hot water in new residential building development.
- F. Ensure that new home development meets or exceeds the Environmental Protection Agency (EPA) WaterSense specifications for residential interior plumbing design and for exterior water-use system design.

Section 151.16.002

Water Use Regulations -- General

- A. New Construction – Residential. All interior plumbing in new construction, consisting of one-to-four units, attached or detached, shall meet the following requirements:
 - 1. All toilets shall be WaterSense labeled.
 - 2. All hot water fixtures shall be WaterSense labeled.

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3. Hot water pipe insulation. Insulation for hot-water pipe with a minimum thermal resistance (R-value) of R-4 shall be applied to the following:
 - a. Piping larger than 3/8-inch nominal diameter.
 - b. Piping located outside the conditioned space.
 - c. Piping located under a floor slab.
 - d. Buried piping.
 - e. Supply and return piping in recirculation systems including branches to each fixture.
4. The installation of a pressure-reducing valve on the house side of the water meter, in an easily accessible location, shall be required for all new single-family residences (preferred location is in the garage or other non-in-ground location). The static service pressure shall be set no higher than 60 pounds per square inch (psi), regardless of input pressure.
5. The following shall apply to all hot water distribution systems:
 - a. Plan sets shall clearly demonstrate that the water usage limit specified herein is met for all hot-water fixtures except tubs and garden tubs.
 - b. Nominal 3/8-inch line is required for all faucet and lavatory fixtures.
 - c. One of the following systems is required:
 - (1) Whole-house manifold.
 - (a) The system shall be designed such that less than 0.38 gallons (6 cups) of water are in the piping between the manifold and any hot water fixture.
 - (2) Demand-Controlled (On-Demand) Hot Water Recirculating systems.
 - (a) The system shall be designed such that less than 0.13 gallons (2 cups) of water are in the piping between the hot water circulation loop after being primed, and any hot water fixture.
 - (b) Pump activation switches shall be permanently mounted on walls in all bathrooms and the kitchen. Remote switches may be used in addition to the permanent switches.
 - (c) A dedicated return line shall be used with a minimal line size of nominal 3/4-inch diameter.

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- (3) Either system, whole house manifold or trunk/branch/demand-initiated pump systems, must deliver hot water to any fixture within 0.6 gallons (9.6 cups). No other systems are permitted without the prior written approval of the Director.
 - (4) Alternative systems may be considered and approved by the Director and permitted in lieu of the use of a manifold or demand-controlled (on-demand) system. These systems may include, but are not limited to:
 - (a) Point-of-use water heaters. Must be located at all bathrooms and at the kitchen. Back-to-back systems sharing one heater shall be considered.
 - (b) Core Plumbing Systems that minimize pipe volume between the hot water source and any hot water fixture to 0.38 gallons (6 cups) or less.
 - (c) Systems that utilize a single-trunk recirculation system with a single length of nominal 3/4-inch piping running from the top of the water heater to each fixture in turn and back to the bottom of the water heater. Such systems shall use an on-demand pump meeting the requirements of item 2 above.
 - (d) New technology that improves upon any of the above, as determined by the Director.
 6. Should the homebuilder install a clothes washer, the clothes washer must be Energy Star qualified and be rated as having less than or equal to the lowest current Energy Star Water factor.
 7. New single-family construction shall not offer evaporative coolers as the only source of cooling. Maximum rate of unit cannot exceed 3.5 gallons of water per ton-hour of cooling.
 8. Water softeners, if installed, must meet NSF/ANSI 44 (including the voluntary efficiency standards in Section 7).
 9. Drinking water treatment systems, if installed, shall meet NSF/ANSI (such systems shall yield at least 85 gallons of treated water per 100 gallons processed).
- B. New Construction -- Commercial, Industrial, Multi-Family, and Public Development.
1. Waterless urinals shall be installed in all new public, commercial, multi-family residential common use, and industrial buildings where urinals are used. All applicable plumbing codes shall apply.

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2. Existing public, commercial, multi-family residential common-use, and industrial building restroom remodels or retrofits shall convert existing urinals to waterless urinals.
 3. All new commercial car wash facilities, including automobile dealerships, shall use water recycling systems which recycle a minimum of 75 percent of the water used. This requirement does not apply to small operation auto detailers or similar uses.
 4. No automatic toilet flushing fixtures without sensors shall be allowed in new or retrofit construction.
 5. Kitchens in which dishwashers are installed must use Energy Star rated dishwashers.
 6. All facilities installing clothes washers are required to install Energy Star qualified commercial clothes washers rated equal to or below the lowest current Energy Star Water factor.
 7. The use of air-cooling misters is prohibited in commercial and industrial developments.
 8. All new multi-family development exceeding four units shall provide independent-unit metering (water meter for each dwelling unit), with the following exceptions:
 - a. Multi-family complexes providing 80 percent or more low- to moderate-income housing units, as defined by the federal office of Housing and Urban Development, may provide alternative water-saving design methods in lieu of the use of independent-unit metering. The burden of proof is on the applicant to show that an equivalent, or greater, water savings will be achieved.
 - b. Alternative water-saving methods to include, but not be limited to the following, may be considered by the Director and permitted in lieu of the use of independent-unit metering:
 - (1) Super insulation.
 - (2) Short hot-water line run distances (core plumbing systems).
 - (3) Ratio Utility Billing Systems (R.U.B.S. – as allowed under applicable state law).
- C. Existing Buildings. In existing buildings or premises in which plumbing installations are to be replaced, such replacement shall comply with all code requirements for water-saving devices.

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Section 151.16.003

Water Use Regulations – Outdoor Areas

A. Water for Parks and Golf Courses.

1. All parks shall use medium- and low-water use plants as per the requirements in Section 151.15.007 or as allowed by the Director. High-water-use turf or other restricted plants shall be allowed only in those areas with heavy usage, such as athletic fields and playgrounds.
2. All golf courses shall use medium- and low-water-use plants as per the requirements in Section 151.15.007 or as allowed by the Director.
3. The water source used for new golf course irrigation shall consist of reclaimed wastewater, harvested rainwater, or an alternative water supply other than groundwater.
4. All new golf course development shall limit turf areas to 5 acres per hole.
5. New ponds, lakes, artificial watercourses, and other types of water hazard areas shall be prohibited except as described in Section 151.16.003 B 1 and 2, except for holding ponds used for treated effluent being used for permitted irrigation purposes.
6. All golf courses shall be approved as conditional uses.

B. Other Areas

1. Ponds, fountains, functional holding ponds, or other reservoirs that are supplied in whole or in part by any water supply shall not exceed 500 square feet of surface area unless approved by the Director.
2. Multiple water features on the same property will be considered together to determine surface area.
3. Flowing water used in fountains, waterfalls, and similar features shall be recirculated.

C. Wasting water is prohibited.

D. Landscaping Requirements. In accordance with the provisions of Article 151.15.

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E. Residential Turf Restrictions. In accordance with the provisions of Article 151.15.

1. The use of turf in new single-family residential development shall be limited to rear yard areas only.