

## DEVELOPMENT CODE

### **ARTICLE 151.16** **WATER CONSERVATION**

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#### **Section 151.16.001**

##### **Purpose**

Being that the City of Sierra Vista is committed to conserving water, the following goals are established:

- A. To reduce the rate of depletion of groundwater resources in order to ensure the availability of water for future use.
- B. To assist in reducing overall per capita water use.
- C. To reduce yard irrigation and irrigation-related waste.
- D. To reduce irrigation water usage without sacrificing landscape quality by using lower water use plants, improved design and planting practices, different watering practices, and better irrigation system design and maintenance.
- E. To encourage voluntary water conservation for existing single-family residences while requiring conservation on all other properties.
- F. To establish rebate programs that would provide incentives in the form of rebates for conversion to water saving devices.

#### **Section 151.16.002**

##### **Water - Saving Plumbing Fixtures**

- A. New Construction; Interior Plumbing. All interior plumbing in new buildings, including all residential uses, shall meet the following requirements:
  - 1. Toilets shall not use more than 1.6 gallons per flush, including toilets with flush valves.

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2. Shower heads shall be designed to use no more than 2.5 gallons per minute at a pressure of 80 psi.
3. Kitchen faucets and replacement aerators shall be designed to deliver no more than an average of 2.5 gallons of water per minute at a pressure of 80 psi. Lavatory faucets and replacement aerators shall be designed to deliver no more than an average of 2 gallons of water per minute at a pressure of 80 psi. Alternatively, kitchen and lavatory faucets shall be equipped with permanent flow control devices that allow delivery of no more than an equivalent average of water at a pressure of 80 psi.
4. Evaporative cooling systems and decorative fountains shall be equipped with water recycling or reuse systems.
5. All new hot and cold water pipes shall be insulated during construction where they are located over ceiling or within walls. An acceptable method of insulation includes running all lines through blanket or blown insulation in the ceiling and on the internal side of the insulation within all walls. If on-pipe insulation is utilized it shall consist of a minimum R-4 rating. Cold water lines running underneath the slab do not require insulation. Copper hot water lines running underneath the slab require insulation with a minimum R-4 rating.
6. All new residential construction consisting of four or fewer residential units shall include hot water recirculating systems. In addition to complying with all applicable International Plumbing Code requirements, such systems shall meet the following requirements:
  - a. A dedicated return line shall be utilized. The return line shall consist of CPVC, PEX, copper, or approved equivalent, and shall be minimum  $\frac{3}{4}$  inch diameter if copper is utilized. The dedicated return line shall be insulated to a minimum standard of R-4.
  - b. The system shall include one or both of the following time/temperature controls:
    - (1) A pump on-off switch shall be provided at a minimum of one fixture location. Remote on-off switches may also be utilized.
    - (2) A timer that is programmable to a minimum of two cycle times per day.

Alternative water-saving devices, such as point-of-use water heaters, super insulation methods, or short hot-water line run distances, may be considered by the Director and permitted in lieu of the use of a recirculating system.

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7. 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. All hot-water pipes shall be insulated at a minimum R-4 rating.

Alternative water-saving methods such as super insulation, short hot-water line run distances, or ratio utility billing systems (as allowed under applicable state law) may be considered by the Director and permitted in lieu of the use of a recirculating system or independent-unit metering.

8. Should the homebuilder install a clothes washer, then the clothes washer must be Energy Star rated and have an Energy Star Water Factor of 8 or less.
9. New single-family construction shall not offer evaporative coolers as the only source of cooling.

### B. Commercial, Industrial and Public Development.

1. Lavatory faucets shall be equipped with a mechanism that causes the faucets to close automatically after delivering no more than an average of one quart of water.
2. Waterless urinals shall be installed in all new public, commercial, multi-family residential common-use, and industrial buildings where urinals are utilized. All applicable plumbing codes shall apply.
3. Existing public, commercial, multi-family residential common-use, and industrial building restroom remodels or retrofits shall convert existing urinals to waterless urinals.
4. All new commercial car wash facilities shall utilize water recycling systems which recycle a minimum of 75 percent of the water utilized.
5. No automatic toilet flushing fixtures (without sensors) shall be allowed in new or retrofit construction.

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6. New commercial kitchens installing dishwashers must install Energy Star rated dishwashers (EPA to publish in Spring 2007).
  7. All facilities installing commercial clothes washers are required to install Energy Star rated commercial clothes washers with a Water Factor of 8 or less.
- 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.

### **SECTION 151.16.003**

#### **Water Conservation Guidelines**

1. To the extent feasible, spray irrigation on city owned property during the months of April through October must occur between the hours of 4:00 a.m. and 9:00 a.m. This restriction serves as a guideline for landscape watering on non-city owned property. This restriction shall not apply to drip irrigation and low precipitation bubblers, hand watering, or watering of containerized plants and plant stock.
2. To the extent feasible, all spray irrigation on city owned property during the months of November through March must occur between the hours of 10:00 a.m. and 3:00 p.m. This restriction serves as a guideline for landscape watering on non-city owned property. This restriction shall not apply to drip irrigation and low precipitation bubblers, hand watering, or watering containerized plants and plant stock. This restriction shall not apply to golf courses or parks that are in regular use or in use for a special event during these hours.
3. To the extent feasible, all city owned properties other than parks and golf courses shall water no more than every other day.
4. Restrictions in division (1), (2) and (3) above do not apply to the following:
  - a. Outdoor irrigation necessary for the establishment of newly sodded lawns and landscaping within the first 30 days of planting, or watering of newly seeded turf within the first year of planting, or after top dressing and fertilizing, or after cutting turf;
  - b. Irrigation necessary for one day only where treatment with an application of chemicals requires immediate watering to preserve an existing landscape or to establish a new landscape;
  - c. Water used to control dust or compact soil;

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- d. Visually supervised operation of watering systems for short periods of time to check system condition and effectiveness.
5. Automatic shutoff nozzles are recommended for use on any hoses used for hand watering, car washing or other outdoor uses.
6. To the extent possible, outdoor swimming pools should be covered when not in use for a period greater than 5 days.
7. Charity car washes are encouraged to utilize commercial car washing facilities which either recycle their water or which discharge all water into the city's sanitary sewer system.
8. To the extent feasible, hot water heaters shall be located in proximity to the most frequently utilized plumbing fixture outlets.
9. The potential for using harvested water should be evaluated and, when practical, incorporated into landscape design. Such design shall be consistent with the requirements of the development code and the Surface Water Plan as currently adopted or subsequently amended.
10. All public, commercial, multi-family residential common use area, and industrial facilities utilizing washing machines, including but not limited to commercial laundry facilities, schools, health clubs, motels and fire stations, are encouraged to utilize washing machines which incorporate the most current water-saving design features available.

### **SECTION 151.16.004**

#### **Water Use Regulations – All Property**

##### **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 of Community Development. 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 of Community Development.

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3. The water source utilized for irrigation shall consist of reclaimed wastewater, harvested rainwater or an alternative water supply other than groundwater, to the extent feasible.
  4. All new golf course development shall only irrigate the turf with reclaimed water and shall limit turf areas to the extent feasible consistent with state of the art "target-type" golf course design standards. Turf area shall be limited 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 151.16.004(b)(7) below and except for holding ponds utilized for treated effluent being used for permitted irrigation purposes.
  6. All parks and golf courses shall be approved as conditional uses.
- B. Design Regulations. The following regulations apply to all new development, and to expansions or major renovations at existing city owned parks, city and non-city owned golf courses, and city owned athletic fields.
1. With the exception of temporary irrigation systems needed to establish low water use plants, spray irrigation shall not be used on slopes greater than four feet of horizontal distance per 1-foot vertical change (4:1).
  2. All existing disturbed slopes and all man-made slopes shall receive erosion control from plantings and/or terracing. Concrete, asphalt, or any other water and air impervious paving/cover will be allowed only where it is the most appropriate methodology and where no other practical alternative exists.
  3. Plants that require spray irrigation or a mowing frequency of more than three times per year shall not be used in street medians, except that spray irrigation may be used in street medians for up to 36 months where the primary objective is to reclaim disturbed areas with low water use plants.
  4. Spray irrigation shall not be used to apply water to any area within eight feet of a street curb or storm sewer inlet. These areas may be irrigated by drip, bubbler, soaker, or sub-surface irrigation systems.
  5. Sprinkler heads shall be installed at least eight inches away from impermeable surfaces.
  6. No spray irrigation shall be used in areas less than ten feet in any dimension excepting within residential properties, or where such an area is contiguous with adjacent property so that the dimension totals ten feet minimum. Within parking lots no spray irrigation shall be used on any

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area less than 15 feet in any dimension. These areas may be irrigated by drip, bubbler, soaker, or sub-surface irrigation systems.

7. Ponds, fountains, wetlands, marshes, water features for wildlife habitat, 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 of Community Development. Multiple water features on the same property will be considered together to determine surface area. Flowing water used in fountains, waterfalls and similar features shall be re-circulated.

### C. Irrigation System Standards.

The following standards apply to all expansions or major renovations at existing parks, golf courses and athletic fields, and to all new development except single family residential. The standards serve as voluntary guidelines for single-family residential development. In general, irrigation systems shall be designed to be site-specific, reflecting plant type, soil type, infiltration rates, slopes, and prevailing wind direction.

1. Irrigation systems shall be designed to be in conformance with all provisions of this article. Temporary irrigation systems (allowed for no longer than 1 year) shall not be required to meet these standards.
2. Application equipment for which the manufacturer specifies flow rates in gallons per minute (gpm) shall not share a control valve with equipment for which the manufacturer specifies flow rates gallons per hour (gph).
3. Irrigation systems shall be controlled by an automatic controller equipped with the following features:
  - a. Two or more independent programming schedules;
  - b. Capable of programming run times in one minute increments and displaying the run time as a numeric display;
  - c. Total program memory retention.
  - d. Ability to be fitted with and the use of an external rain switch interrupter and soil moisture sensor.

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4. No intentional over spray is allowed where it may obstruct pedestrian traffic on a city required pedestrian walkway.
  5. Irrigation systems shall be designed such that water pressure at the sprinkler or emitter is not more than 20 percent in excess of the manufacturer's maximum recommended pressure range for that device. Pressure may be regulated by design or by the installation of a pressure regulating device or devices.
  6. Irrigation systems shall be designed to minimize low head line drainage.
- D. Use of Misters: The use of misters is prohibited in commercial and industrial developments.
- E. Wasting water is prohibited.