

1820.02 Water Conservation Measures – Sierra Vista Sub-watershed Overlay Zone

The following water conservation measures shall be required of all residential and non-residential properties in the Sierra Vista Sub-watershed, as defined by the Arizona Department of Water Resources and delineated on County maps and, when a building permit is required, be subject to plan review and inspections:

A. New Construction – Residential:

All interior plumbing in new residential construction, consisting of one-to-four units, attached or detached, shall meet the following requirements:

1. All toilets shall be WaterSense labeled.
2. 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.
3. **Evaporative Coolers:** 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. New or replacement evaporative coolers shall not be single-pass coolers.
4. Water softeners, if installed, must meet NSF/ANSI requirements.
5. Drinking water treatment systems, if installed, shall meet NSF/ANSI requirements (such systems shall yield at least 85 gallons of treated water per 100 gallons processed).
- 4-6. 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.
7. **Hot water on demand:** In new construction, a hot water system will be installed to provide hot water on demand at the point of use in sinks and baths/showers.
 - a. All hot water fixtures shall be WaterSense labeled. Insulation for hot-water pipe with a minimum thermal resistance (R-value) of R-4 shall be applied to the following:
 - (1) Piping larger than 3/8-inch nominal diameter.
 - (2) Piping located outside the conditioned space.
 - (3) Piping located under a floor slab.
 - (4) Buried piping.
 - (5) Supply and return piping in recirculation systems including branches to each fixture.
 - b. The following shall apply to all hot water distribution systems:
 - (1) Plan sets shall clearly demonstrate that the water usage limit specified herein is met for all hot-water fixtures except tubs and garden tubs.
 - (2) Nominal 3/8-inch line is required for all faucet and lavatory fixtures.
 - (3) One of the following systems is required:
 - (a) Whole-house manifold:
 - (1) 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.

(b) Demand-Controlled (On-Demand) Hot Water Recirculating systems:

(1) 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.

(2) 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.

(3) A dedicated return line shall be used with a minimal line size of nominal 3/4-inch diameter.

(c) 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 County Zoning Inspector.

(d) Alternative systems may be considered and approved by the County Zoning Inspector 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:

(1) 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.

(2) 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.

(3) 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.

(4) New technology that improves upon any of the above, as determined by the County Zoning Inspector.

8. **Gray water plumbing:** New residential construction shall have gray water line(s) plumbed to stub out, and to be capped and clearly marked so as to permit the optional use of gray water by residents. The gray water plumbing must connect at least two plumbing fixtures, and preferably those that produce the most gray water without compromising the efficient evacuation of the black water pipes.

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.

2. All new public, commercial, multi-family residential common-use, and industrial building restroom remodels or retrofits shall convert existing urinals to waterless urinals. All applicable plumbing codes shall apply.

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. Kitchens in which dishwashers are installed must use Energy Star[®] rated dishwashers.

- 4-5. **Commercial Laundry Facilities:** All laundry facilities intended for public use such as laundromats, hotel guest laundries or multi-family housing laundry rooms will be equipped with Energy Star[®] qualified commercial clothes washers rated equal to or below the lowest current Energy Star[®] Water factor. This provision applies to initial establishment of new laundry facilities and on replacement of existing equipment due to normal wear and tear or other loss.
- 2-6. The use of air-cooling misters is prohibited in commercial and industrial developments.
- 3-7. Water softeners, if installed, must meet NSF/ANSI requirements.
8. Drinking water treatment systems, if installed, shall meet NSF/ANSI requirements (such systems shall yield at least 85 gallons of treated water per 100 gallons processed).
- 4-9. 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 (HUD), 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 County Zoning Inspector and permitted in lieu of the use of independent-unit metering:
- (1) Short hot-water line run distances (core plumbing systems).
- (2) Ratio Utility Billing Systems (R.U.B.S. – as allowed under applicable state law).
10. 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.
11. **Artificial Water Features:** New artificial water features such as ponds, lakes, water courses, and other types of decorative water features are prohibited in any new commercial construction or in common user areas of multi-family housing unless their sole source is harvested rainwater. This provision does not pertain to required storm water detention/retention facilities, holding ponds used for treated effluent being used for permitted irrigation purposes, or permitted swimming pools and spas. 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 recirculated.
12. **Outdoor Sprinkler Systems:** Any new installation or replacement of an automatic outdoor sprinkler system shall also include the installation of a rain or humidity sensor that will override the irrigation cycle of the sprinkler system when rainfall has occurred in an amount sufficient to negate the need for irrigation at the scheduled time. Where there are multiple areas with a sprinkler system watered from one controller, the sensor must be installed at the largest area.
13. **Landscaping:** Any new landscaping proposing irrigation installation or re-installation in a median or similar strip of permeable surface less than fifteen feet in any horizontal dimension, adjacent to a roadway, sidewalk, parking area or other paved or impermeable area, shall be irrigated by a subsurface (drip), non-sprinkling irrigation system.

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