



Arizona Department of Water Resources

Protecting & Enhancing Arizona's Water Supplies For Current And Future Generations

Developing Ordinances to Prohibit Outdoor Water Waste



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INTRODUCTION

In Arizona, a significant portion of outdoor water-use is applied to the landscape. Water used to irrigate landscapes is wasted when it runs off due to application rates that far exceed plant requirements, the inability for soils to absorb the water at the rate applied, or inefficient irrigation systems. Water waste from landscape irrigation (irrigation water waste) occurs in every type of landscape — from single and multi-family homes, to businesses, to cities and towns.

To combat this problem, many Arizona towns and cities have, or are in the process of, implementing ordinances prohibiting irrigation water waste. These ordinances typically apply to both new and existing properties, whether publicly or privately owned.

In addition to prohibiting irrigation water waste, a community may wish to consider implementing regulations or prohibitions on other unnecessary or inefficient water uses such as: ornamental water features, draining swimming pools, outdoor misting systems, and under certain circumstances washing vehicles.

This document provides examples of the information needed to develop an ordinance that prohibits irrigation water waste. The information is drawn from ordinances in effect as of 2018 for the following Arizona towns and cities: Avondale, Chandler, Payson, Peoria, Phoenix, Scottsdale, Tempe, and Tucson. Ordinances vary between communities depending on the dominant irrigation type and delivery system used, e.g., flood-irrigation via ditches or pipes, drip irrigation, and/or sprinklers.



ORDINANCE COMPONENTS TO CONSIDER

When developing an ordinance to prohibit the waste of water, the following components should be considered:

Application of the Ordinance

Definitions of the Terms in the Ordinance

What is Prohibited and Required

Exclusions

Enforcement

Application of the Ordinance

Defines to whom or what the ordinance applies. Entities commonly identified include:

- Person, owner, occupant, lessee, agent, manager, or responsible person
- Firm, corporation, residential, commercial, or industrial facility or operation
- County, state, federal, or municipal or other government facility

Definition of the Terms

Definitions are included so that meanings are clear for the purpose of the ordinance.

Examples:

Berm: a bank of soil used to retain water - a term often used in conjunction with rainwater harvesting or flood irrigation.

Gray water: wastewater that has been collected separately from a sewage flow and that originates from a clothes washer or a bathroom tub, shower or sink but that does not include wastewater from a kitchen sink, dishwasher or toilet.

Harvested rainwater: precipitation (rainwater) that has been collected for irrigation purposes (may be directed through swales to landscaped areas and/or collected and stored in tanks, cisterns, etc. for future irrigation purposes).

Irrigation distribution system: channels, aqueducts, ditches, swales, pipes and fixtures designed to carry irrigation water for plants or a landscape from one place to another.

Irrigation: the application of water to outdoor plants or landscapes by artificial means, including the use of rainwater or gray water for such purposes.

Irrigation water waste or runoff: water that escapes or flows away from the landscape being irrigated, even if such flow is not onto a hard surface.

Potable water: water of sufficient quality to serve as drinking water, whether it is used for drinking or not.

Reclaimed water or treated effluent: water that has been treated or processed by a wastewater treatment plant or an on-site wastewater treatment facility, whether publicly or privately owned and that can be used for irrigation purposes.

Swale: a low place in a tract of land—a term often used in conjunction with rainwater harvesting.

WHAT IS PROHIBITED AND REQUIRED

Once the jurisdiction enacting the ordinance has determined the specific sources of water waste to be included in the ordinance and the relevant terms have been defined, the ordinance describes: a) what is **prohibited** and b) what is **required**.

Examples of Prohibitions

- Allowing the excess use, loss or escape of water through breaks, leaks or other malfunctions in the water user's irrigation distribution system for any period of time after such escape of water should have reasonably been discovered and corrected. The period of time could range from 24 hours to 30 days.
- Overflow or spray that causes erosion damage to public property or public rights-of-way; interferes with pedestrian or automobile traffic; or causes long-term damage due to chronic wastefulness.
- Escape of flood irrigation water in such quantity as to cause water to be wasted through the failure or neglect to properly operate or maintain any irrigation distribution system.
- Escape of irrigation water that results in puddles on hard surfaces.
 - * The source of water may be described, e.g., from pumping, flow, release, escape, or leakage of any potable water from any irrigation distribution system.
 - * The size of puddles may be included, e.g., to a depth greater than $\frac{1}{4}$ inch or over a cumulative surface area greater than 10 square feet.
- Leaks from broken sprinkler heads, valves, or faucets. This may be quantified, e.g., leaks in excess of 0.10 gallons per minute, or a sprinkler head that is spraying more than 10 percent of the spray onto the area surrounding the basin or object being irrigated, onto public property or into the public right-of-way. This may be qualified, e.g., "only applies to emitters or heads designed to deliver more than 1 gallon of water per hour".
- Water running off a landscaped area to another area where it is not beneficially used such as to a street, sidewalk, gutter, alley, storm drain, ditch, public utility easement or public or private parking area, paved or unpaved.
- Irrigation of any area of land through a water application system unless the system is designed and installed to retain all water on the property.



Examples of Requirements (by owner, occupant, lessee, agent, manager or responsible person for any residence, firm, corporation, commercial or industrial facility, or municipal, county, state, or federal facility).

Plumbed Irrigation Systems

- Maintain irrigation systems by replacing damaged or missing spray heads, bubbler heads, drip irrigation emitters and irrigation lines.
- Maintain retention/detention berms, laterals, pipes and valves for urban irrigation.
- Maintain and seasonally adjust automatic irrigation controllers.

Irrigation Conveyance Systems

- Construct the embankments prior to irrigating so that irrigation water cannot escape from the premises.
- Sufficiently maintain the banks of irrigation ditches to retain water.
- Restrict water from irrigation ditches to the property of user.
- Close irrigation ports at completion of irrigation.

EXCLUSIONS

Ordinances may also include a description of the situations in which the ordinance does not apply. For example, irrigation water waste prohibitions may not apply to:

- Water that reaches or flows onto adjacent property, public rights-of-way or easements or private easements when caused by vandalism, wind, emergencies, natural disasters, storm run-off or snowmelt run-off.
- Flow resulting from water utility system failures or malfunctions.

ENFORCEMENT

A range of enforcement options are possible, from issuing a notice, to citations and fines, to discontinuation of water service (if the entity adopting the ordinance is the water provider). The sequence of enforcement may include the following steps:

1. **Complaint** (some providers have a hotline to report violations)
2. **Inspection**
3. **Verbal Notice**

For a first violation, verbal notice of the violation may be given to the water user in person or by telephone. Educational materials on water conservation, including a copy of the ordinance, may be delivered in person or sent by mail.

4. **Written Notice**

The written notice is delivered in person, sent by mail, or posted in a conspicuous place in or around the property. The written notice may include a description of the violation, procedure for compliance, instructions for presenting objections, and other information as appropriate.

5. **Re-inspection**

6. **Close the Complaint**

If violation persists, then

7. **Civil Citation and/or Terminate Water Supply** (if the entity adopting the ordinance is the water provider)

8. **Pay Fine or Court Appearance**

Enforcement Officials

The enforcing official is authorized to make inspections in response to a complaint and issue a written notice. Examples of enforcing officials:

- Code Compliance Manager or Officer
- Water Conservation Coordinator or Specialist
- City Manager or Authorized Designee
- Water Provider Manager

SOURCES OF OUTDOOR WATER WASTE

IRRIGATION SYSTEMS

Provisions may include the following:

- All new irrigation systems (drip, bubbler, spray) shall be efficient. Plants shall be grouped according to the frequency with which they need to be irrigated, and separate valves shall be used to water each zone (or group of plants). The frequency of watering depends on slope, soil texture, exposure, water use requirements by plant type, and plant root depth (e.g., trees need to be watered longer due to deeper roots, but less frequently than shrubs). Irrigation systems shall include automatic rain shut-off devices, and/or automatic controllers that meet certain specifications (e.g., smart controllers that adjust irrigation application based on soil moisture and/or evapotranspiration [ET] from local weather stations or satellite transmissions).
- All new spray irrigation systems, including both in-ground and above-ground sprinkler systems, are prohibited. Exceptions may include situations where water harvested from precipitation is the sole source of irrigation water.
- New multi-family residences, model homes, as well as commercial and industrial developments are prohibited from using potable water for outdoor irrigation. Instead, these facilities are encouraged to construct and maintain rainwater harvesting storage cisterns [above or below ground storage tanks, with or without pumps], catchment areas and distribution systems, and/or use gray water to provide water for landscaping.



CHOICE OF PLANTS FOR LANDSCAPE

Provisions may include the following:

- Limitations on the amount of allowable turf (square footage or percent of total landscaped area) and to certain applications (e.g., recreational uses, playing fields and parks, backyards).
- Requirements to use only approved low-water use plants in certain applications, e.g., medians, rights of way, commercial landscapes, common areas of master-planned communities (usually based on jurisdictional code requirements for developers going through the permit process).



ORNAMENTAL WATER FEATURES

These are typically defined as fountains or ponds, and do not include swimming pools or spas. If allowed at all, provisions may include the following for new ornamental features:

- Ornamental water features shall be designed to be compatible with the concept of water conservation in an arid lands environment.
- Water features with moving water are required to use recirculating pump technology so that the water is recycled through the feature.
- The water feature shall be designed to prevent water seepage or leaking.
- Water features may be used if (some/all) the following conditions are met:
 - * Rainwater is the exclusive water source.
 - * The water feature is designed to prevent water seepage or leaking.
 - * The total water surface area does not exceed a maximum area, e.g., 1 percent of the net site area of the development.
 - * The water feature is located in an interior oasis, e.g., within a building or courtyard.
 - * The sum of the square feet of water surface area plus the square feet of turf area does not exceed the total allowed square feet for the oasis allowance (determined by the jurisdiction –if an oasis area is allowable by code).
 - * The water feature has a capacity of less than a maximum volume, e.g., 500 gallons.



WASHING VEHICLES

Provisions may include the following:

- When using a hand held hose to wash automobiles, trucks, trailers, boats, and other types of mobile equipment, the hose shall be equipped with an automatic shut-off nozzle that completely shuts off the flow of water, even if left unattended.
- Washing vehicles in a driveway in a manner that uses excess water beyond that reasonably necessary for washing and rinsing is prohibited.
- New commercial car washes shall utilize best-available water-recycling technology to recycle a minimum amount of water, e.g., 50 percent of water used for auto washing and rinsing purposes.
- Self serve car washes shall utilize high pressure nozzles that deliver a maximum water flow rate of 3 gallons per minute.



OUTDOOR MISTING

Provisions may include the following:

- New outdoor misting systems for cooling are prohibited in any unoccupied, non-residential areas.
- May be banned entirely.



POOLS, PONDS AND LAKES

Provisions may include the following:

- Restrictions on the number, size and applications of new water play apparatuses such as slides, sprinklers, and wading pools.
- New pools, ponds and lakes with a total water capacity greater than a maximum volume, e.g., 500 gallons, shall require a permit prior to installation.
- New ponds and lakes shall utilize alternative water supplies where feasible, and utilize best available re-circulating technology.



DRAINING SWIMMING POOLS AND SPAS

Provisions may include the following:

- Discharging or allowing water to escape into a city street, other rights-of-way, other city property, and/or other private property is prohibited.

HOSING DOWN OUTDOOR SPACES

Provisions may include the following:

- Automatic shutoff nozzles required for all hoses used for hand watering or other outdoor uses.
- Washing driveways, sidewalks, parking areas, or other impervious surface areas with an open hose or with a spray nozzle attached to an open hose is prohibited.
- Limitations on the hosing down of driveways, sidewalks and other landscape so that the water will run-off into other landscaped areas, but in no event, shall water be used in excess of what is reasonably necessary for washing and rinsing.



WATER OUTLETS AND PLUMBING

Provisions may include the following:

- Consumers shall keep all water outlets closed when not in actual use. All water outlets, including those used in conjunction with hydrants, urinals, water closets, bathtubs and other plumbing fixtures, shall not be left running for any purpose other than the use for which they were intended.
- Property owners are responsible for all leaks, damages (or water consumption) due to leaks, from the service pipes leading from the consumer's side of the meter to the premises served.

WATER TAMPERING

Provisions may include the following:

- No person shall open or close any fire hydrant or stopcock connected with a water system.
- No person shall lift or remove the covers of any gate valves or shut-offs, or tap into the (city or water provider name) water mains or otherwise remove water from (city or water provider name) water works without a permit (except in the case of fire, and then under the direction of the fire department).

EXCLUSIONS TO WATER WASTE ORDINANCES

In addition to the exceptions provided for ordinances that address irrigation water waste and ornamental water features, the following exceptions may be considered for ordinances that address water waste from other sources:

- Water uses that are necessary, e.g., for protection of public health and safety.
- Flow resulting from fire fighting or routine inspection of fire hydrants or from fire training activities.
- Water applied to abate spills of flammable or otherwise hazardous materials.
- Intentional washing of hard surfaces for an explicit public health, safety, or sanitation purpose if approved first (the washing of outdoor eating areas and sidewalks is not included in this exemption).
- Water that reaches or flows onto adjacent property, public rights-of-way or easements or private easements when caused by vandalism, wind, emergencies or natural disasters.
- Flow resulting from a routine inspection or maintenance of the city or town water utility system.
- Water used in the installation, maintenance, repair, or replacement of public facilities and structures including but not limited to, traffic control devices, storm and sanitary sewer structures and road or street improvements.
- Storm run-off, including snowmelt run-off.
- Flow resulting from water utility system failures or malfunctions.
- Incidental run-off caused by vehicle washing (provided that a positive shut-off nozzle is used).
- Periodic draining of swimming pools and spas, unless code requires that these are drained into the sewer.

LINKS TO ARIZONA CITY & TOWN CODES FOR WATER WASTE

Avondale

[Chapter 24. Water, Sewers and Sewage Disposal Article 2. Municipal Water System. Division 1. Generally 24-34 Waste of water prohibited.](#)

Chandler

[Chapter 52 Water Services. Article 2. Irrigation Water](#)

Payson

[Chapter 50 Water. Water Conservation. 50.84. Water Waste](#)

Peoria

[Chapter 25 Water, Sewers, and Sewage Disposal Water Conservation and Drought Management Procedures. 25-53. Water; unnecessary water, turnoffs, water leaks.](#)

Phoenix

[Chapter 37 Water. Article 1. In General. Sec. 37-27. Waste of water; failure of consumer to make repairs to pipes, valves, and fixtures](#)

Scottsdale

[Chapter 49 Waters, Sewers, and Sewage Disposal Article VII. Water Conservation. Sec. 49-249. Leakage, escape of water prohibited.](#)

Tempe

[Chapter 33 Water. Article 6. Water Wasting](#)

Tucson

[Chapter 27 Water. Sec. 27-15. Waste or unreasonable use of water; violation declared a civil infraction](#)



PROHIBITING WATER WASTE: EXAMPLE MEASURES FROM LEAST RESTRICTIVE TO MOST RESTRICTIVE



COMPONENTS	NO RESTRICTIONS	SOMEWHAT RESTRICTIVE	MOST RESTRICTIVE
Irrigation water waste	Water from irrigation is allowed to run-off property.	Water runoff is prohibited if it causes damage to public property. Water run-off is prohibited if it results in puddles greater than a specified size, e.g., 10 feet square.	Irrigation leaks are prohibited. Water runoff (from sprinklers, drip emitters, broken irrigation, or sprayers) in any amount is prohibited.
Irrigation Water Source	Potable (drinking) water can be used for outdoor irrigation.	New multi-family, commercial, and industrial developments are prohibited from using potable water for irrigation. Reclaimed water, gray water, or rainwater must be used instead.	Potable water may not be used for irrigation by anyone, including individuals (single family residences). Reclaimed water, gray water, or rainwater must be used instead.
Types of Irrigation Systems	Any type of irrigation system is allowed.	Sprinklers and drip irrigation systems are allowed, but not flood irrigation.	All new irrigation systems require rain sensors and smart controllers (ET, or weather based). All new irrigation systems are prohibited, unless the irrigation water source is rainwater, gray water or reclaimed water.
Types of Vegetation	Any type of plant may be grown, even those that are water intensive.	Turf and other water-intensive landscapes are limited in size, and to certain applications (such as multi-family or residential back yards only).	Only low water use plants may be planted. No turf or water intensive plants allowed.
Watering Schedule	Plants and yards may be watered at any time, any day.	All outdoor irrigation must comply to a schedule for specific watering days and/or times (Usually in response to a supply issue or drought conditions).	All outdoor irrigation is banned unless the irrigation water source is rainwater, gray water or reclaimed water.
Ornamental Water Features	Water features of any size or design may be constructed.	New water features must use recirculating water technology. Size may be restricted. Source of water may be specified, e.g. gray water.	All ornamental water features are prohibited.

PROHIBITING WATER WASTE: EXAMPLE MEASURES FROM LEAST RESTRICTIVE TO MOST RESTRICTIVE



Misting	Misting is allowed anywhere at any time.	Misting is restricted to public areas where people congregate. Must be turned off when public not present.	All misters are prohibited.
Hosing Down Outdoor Spaces	Hoses may be used at any time and for any purpose.	Businesses are restricted from using hoses to clean sidewalks, driveways, and patios. Water-brooms may be used. All residents must use a nozzle with automatic shut-off.	Hosing down outdoor spaces is prohibited at all times.
Water Play Apparatus	No restrictions on water play slides, wading pools, sprinklers, etc.	Parks and businesses have restrictions on the number and size of their water play apparatus.	All water play apparatuses are prohibited.
Swimming Pools & Spas	No restrictions on swimming pools and spas.	Residential single family pool construction may be restricted or require a permit. Only community pools for new master-planned communities or multi-family complexes may be allowed.	No refilling, emptying, or filling of new pools is allowed (pool construction may be denied or restricted in response to supply limitations or drought).
Washing Vehicles	No restrictions on any type of car wash or water waste at home.	Vehicles may only be washed using a bucket, commercial car wash or hose with automatic shut off nozzle. Commercial car wash must recycle water.	Vehicles may only be washed using a bucket or commercial car wash with recycling systems, and only one time per month.
Ponds and Lakes	No restrictions on any number of or size of artificial lakes or ponds.	Must receive a permit and are limited in size; must use re-circulating technology. New ponds must be lined to reduce losses due to seepage.	All artificial lakes and ponds (except reservoirs or watering holes for animals) are prohibited.

For additional information on water conservation:

new.azwater.gov/conservation

(602) 771-8585



SAMPLE ORDINANCE FOR CITIES, TOWNS AND COUNTIES IN ARIZONA

Please note that the following template is presented for informational purposes only. Each city, town, and/or county is encouraged to develop an ordinance that best meets their specific needs. As applicable, this template could be utilized by irrigation districts, as well.

Prohibiting Water Waste from Irrigation

ORDINANCE NO. _____

RELATING TO WATER: PROHIBITING WATER WASTE, PROVIDING FOR CIVIL ENFORCEMENT OF SPECIFIED VIOLATIONS OF CHAPTER [#] SECTIONS [#'s] OF THE (*Name of Jurisdiction with authority to institute ordinance or zoning code changes, e.g., city, town, irrigation district or county*)

Section 1.

- A. WHEREAS, the [*City/Town/County*] is located in the [*County, _____ desert region/State of Arizona*] an area of limited water resources; and
- B. WHEREAS, water conservation is vital to the future health, safety and economic well being of the residents of [*the City, Town, County*];
- C. WHEREAS, the [*city/town council/board of supervisors*] understands that water supplies must not be wasted and must be used in an efficient manner;
- D. WHEARAS, the [*City/Town/County*] understands that a significant amount of water is wasted by inefficient, or poorly designed and/or maintained irrigation systems resulting in water waste;

Section 2. Ordaining Clause

BE IT ORDAINED BY THE [*MAYOR AND CITY/TOWN COUNCIL, BOARD OF SUPERVISORS*] OF _____ [*CITY/TOWN/COUNTY*], ARIZONA:

Section ____ Subsection ____ of the _____ [*City/Town/County*] Code is hereby [enacted/ amended/repealed and reenacted] to read as follows:

Section 3. Irrigation Water Waste; Violation Declared a Civil Infraction

This Ordinance shall apply to all water users within the corporate limits of _____ [*City/Town/County*].

No person to which this Ordinance applies shall allow water to escape or flow away from landscape being irrigated, even if such flow is not onto a hard surface.

It shall be a civil infraction for any person, firm or corporation to violate the provisions of this section.

The following activities are prohibited:

Irrigation of any area of land through an irrigation distribution system, unless the system is designed to be efficient and installed to retain all water on the property.

The pumping, flow, release, escape, or leakage of water from any irrigation distribution system onto any hard surface such that water accumulates in such a manner as to create individual puddles in excess of [e.g., 10 square feet in size].

Overflow or spray that causes erosion damage to public property or public rights-of-way, interferes with pedestrian or automobile traffic, causes long-term damage due to chronic wastefulness, or sprays more than [e.g., 10] percent of the spray onto the area surrounding the basin or object being irrigated.

Failure to repair leaks in excess of [e.g., 0.10 gallons per minute] from broken irrigation lines, sprinkler heads, valves, or faucets within [e.g. 24 hours] after discovering the leak.

Section 4. Definitions

Irrigation distribution system: channels, aqueducts, ditches, swales, pipes and fixtures designed to carry irrigation water for plants or a landscape from one place to another.

Irrigation water waste or runoff: water that escapes or flows away from the landscape being irrigated, even if such flow is not onto a hard surface.

Irrigation: the application of water to outdoor plants or landscapes by artificial means, including the use of rainwater or gray water for such purposes.

Section 5. Citation Process

To be determined by city, town, or county as applicable.

Section 6. Exclusions

The article does not apply to:

Water uses that are necessary, e.g., for the protection of public health and safety.

Flow resulting from fire fighting, routine inspection of fire hydrants, or from fire training activities.

Water applied to abate spills of flammable or otherwise hazardous materials.

Intentional washing of hard surfaces for an explicit public health, safety, or sanitation purpose if approved first (the washing of outdoor eating areas and sidewalks is not included in this exemption).

Water that reaches or flows onto adjacent property, public rights-of-way or easements, or private easements when caused by vandalism, wind, emergencies or natural disasters.

Flow resulting from a routine inspection or maintenance of the city or town water utility system.

Water used in the installation, maintenance, repair, or replacement of public facilities and structures including but not limited to, traffic control devices, storm and sanitary sewer structures, and road or street improvements.

Storm runoff, including snowmelt runoff.

Flow resulting from water utility system failures or malfunctions.

Incidental runoff caused by vehicle washing (provided that a positive shut-off nozzle is used).

Periodic draining of swimming pools and spas, unless code requires that these are drained into the sewer.

Section 7. Effective Date

This ordinance shall be effective as of _____[month, day, year].