

# Non-Functional Turf

2023 Summary of Programs and Policies



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## INTRODUCTION AND BACKGROUND

There is growing interest in saving water by limiting what has come to be known as “non-functional turf” (NFT). This is especially true in the Western United States, where climate change and persistent drought are straining water supplies. The Alliance for Water Efficiency (AWE) has been tracking these developments and working alongside members and partners to increase information sharing and capacity building about NFT programs. AWE recognizes that not every community will want to limit or replace traditional turf grass with less water-intensive landscapes depending on its climate, water supplies, and other factors. There are a range of promising approaches to limiting outdoor watering, including landscape irrigation efficiency improvements, water budgets, low water use turf varieties, education, and more. However, these approaches are outside the scope of this report.

### WESTERN DROUGHT AND THE CRB

Over 30 water agencies signed a [joint memorandum of understanding \(MOU\)](#) in late 2022, committing to take additional actions to increase water efficiency to help protect and conserve water in the Colorado River Basin (CRB). Among several other strategies, the signatories agreed to implement NFT programs. AWE facilitated a series of regular meetings of the CRB MOU signatories in the second half of 2023. Based on what was discussed in these meetings and the information AWE has gathered from its broader policy, programming, and educational work, AWE prepared this report to share a few of the key takeaways about the types of programs created to limit turf grass in the Western United States.

The Western United States, and particularly the CRB, have increasingly been experiencing [droughts](#) and [extreme temperatures](#) as a result of climate change, and while rain and snow provided some limited relief from drought in 2023, the general trend is expected to continue. Additionally, water supplies were limited even before climate change, and population and economic growth continue and require adequate water supplies. This has spurred additional federal, state, regional, and local efforts to promote water efficiency and conservation, including the creation of the CRB MOU. Much of the focus has been on outdoor water use, given that it makes up a large percentage of average and peak municipal water use. The primary outdoor water use commitment in the CRB MOU is to:

“Introduce a program to reduce the quantity of non-functional turf grass by 30% through replacement with drought- and climate-resilient landscaping while maintaining vital urban landscapes and tree canopies that benefit our communities, wildlife, and the environment.”

### WHAT IS NON-FUNCTIONAL TURF (“NFT”)?

Turf is shorthand for turf grass of the type found covering lawns, landscaped areas around commercial spaces and roads, parks, ball fields, golf courses, etc. Local and state efforts to define NFT have generally focused on whether the turf has a recreational function. The limits and definitions placed on NFT typically exclude turf at existing single-family homes.

Example definitions include:

- **CALIFORNIA:** [AB 1572](#), which became law in 2023, will prohibit “the irrigation of non-functional turf located on commercial, industrial, and institutional properties, other than a cemetery, and on properties of homeowners’ associations, common interest developments, and community service organizations or similar entities ....” Note that private residential properties are not covered. The law defines NFT as: “any turf that is not functional turf, and includes turf located within street rights-of-way and parking lots.” And functional turf is in turn defined as “a ground cover surface of turf located in a recreational use area or community space. Turf enclosed by fencing or other barriers to permanently preclude human access for recreation or assembly is not functional turf.”
  
- **SOUTHERN NEVADA WATER AUTHORITY:** SNWA developed a definition of NFT as required by [AB 356](#), and the following simplified version is available on [SNWA’s website](#) – non-functional turf is “an irrigated grass area not providing functional use. Areas of non-functional turf include, but are not limited to:
  - **Streetscape turf**  
Grass located along public or private streets, streetscape sidewalks, driveways and parking lots, including turf within a community, park and business streetscape frontage areas, medians, and roundabouts.
  - **Frontage, courtyard, interior and building-adjacent turf**  
Grass in front of, between, behind or otherwise adjacent to a building or buildings located on a property not zoned exclusively for single-family residence, including maintenance and common areas.
  - **Certain HOA-managed landscape areas**  
Turf managed by a homeowner association that does not provide a recreational benefit to the community or that otherwise does not qualify as functional turf, regardless of property zoning.”
  
- **CITY OF TUCSON, AZ:** [Ordinance 12005](#), which was passed by the city in 2023, uses the term ornamental turf, which it defines as:
  - a. Grass areas with any single dimension of eight (8) feet or less.
  - b. Grass areas exceeding a 4:1, or twenty-five percent (25%), slope.
  - c. Grass areas that are not accessible by paved pathways and/or are restricted by physical barriers that prohibit accessibility.
  - d. Grass areas installed closer than ten feet to a street and/or in front entryways to residential neighborhoods or subdivisions unless associated with active recreational activities.
  - e. Grass areas that are not utilized for active recreational purposes.
  
- **ALBUQUERQUE BERNALILLO COUNTY WATER UTILITY AUTHORITY:** ABCWUA is actively working on a comprehensive strategy aimed at reducing 30% of non-functional turf within its service area. Through an inclusive community engagement process, ABCWUA is formulating a precise definition of non-functional turf that considers unique community characteristics and incorporates feedback from the community.
  
- **COACHELLA VALLEY WATER DISTRICT:** CVWD uses the State of California’s drought emergency regulatory definition of non-functional turf is turf that is solely ornamental and not regularly used for human recreational purposes or for civic or community events.

Non-functional turf does not include sports fields and turf that is regularly used for human recreational purposes or for civic or community events.

**IN DEFINING NFT**, some issues have drawn more attention and, at times, disagreements, including (a) variance provisions and procedures to address unusual or hardship circumstances; (b) the recreational value of turf areas where dogs are frequently walked, such as along neighborhood roads, compared to dog parks; and (c) the recreational value of turf areas at or near multifamily properties and consideration of green space needs of low- and moderate-income residents.



(Examples of NFT, Photos Courtesy of City of Peoria, AZ and Las Vegas Valley Water District)

### WHAT TYPES OF APPROACHES ARE USED TO LIMIT NFT?

There are many approaches to limiting NFT that are under development or in the early stages of implementation. Some of the major categories include:

- **LIMITS/BANS ON USING SPECIFIED WATER SOURCES FOR IRRIGATING EXISTING NFT.**

Examples include:

- [AB 1572](#) in California re: using potable water; and
- [AB 356](#) re: using Colorado River Basin water

- **LIMITS OR BANS ON INSTALLING NEW NFT OR OTHER TYPES OF INEFFICIENT TURF.**

Examples include:

- [Draft Bill 6 in the Colorado General Assembly](#);
- City of Aurora, CO [Section 138-191 of the City Code](#) enacted in 2023
- Washington County Water Conservancy District, UT [Water Efficiency Requirements](#) – Landscaping from October 2023

- **INCENTIVE PROGRAMS FOR REPLACEMENT OF EXISTING NFT.** Local examples have been

common for some time and are increasingly common. States have started funding turf transformation programs, including:

- \$1.5 million in Colorado ([HB22-1151](#));
- \$8 million in Utah ([SB 118](#))
- \$29.7 million in Arizona in 2023 via the Water Conservation Grant Fund ([SB1740](#))

- **DEMONSTRATION PROJECTS ON GOVERNMENT-OWNED PROPERTIES LIKE PARKS, BUILDINGS, AND ROAD MEDIANS.** Lafayette, CO, recently [announced](#) demonstration projects at seven municipal facilities).

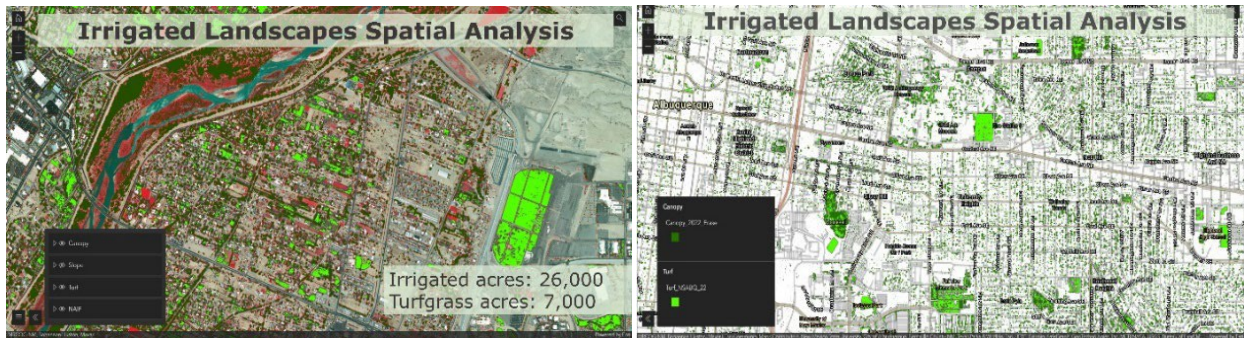


(Example of NFT Conversion to a Desert Landscape, Photos Courtesy of Coachella Valley Water District)

### HOW MUCH TURF (AND NFT) IS THERE?

To measure progress towards reducing NFT or reaching water savings targets, mapping out and measuring the existing turf areas is an important early step.

- **A THRESHOLD QUESTION FOR COMMUNITIES IS WHETHER THEY NEED THE POLICY AND DEFINITION OF NFT (OR SIMILAR TERM) ESTABLISHED BEFORE BEGINNING MAPPING.** One successful approach is to begin mapping all turf, regardless of whether it's NFT, as soon as resources allow. This is beneficial because it allows the full scope of turf and related water use to be understood, and the mapping and related data provide context for policy decision-making about how to define and limit NFT.
- **TURF MAPPING EFFORTS ARE TYPICALLY LOCAL, UTILITY-LED EFFORTS,** but there may be state and regional collaboration opportunities as well. If neighboring utilities have already begun the process, then sharing information and mapping methods may help jump-start the process in new utility service areas.
- **MOST COMMONLY, UTILITIES CREATE GIS-BASED MAPS OF TURF USING TOOLS AND DATA SETS LIKE AERIAL IMAGERY, [LIDAR data from USGS](#), [Nearmap Map Browser](#) (for oblique imagery), [eCognition 10.1](#), Google Earth 3D, Google Street View, [national land cover data from USGS](#), regional land use and land cover data sets (often available from regional commissions), and [Eagle Aerial](#).**
- **RECENT MAPPING EFFORTS INCLUDE:**
  - **[Metropolitan Water District of Southern California's turf dashboard](#)** created by Planetscape AI. This dashboard calculates the square footage in Metropolitan's service area by land use category which allows the agency to combine categories to determine total NFT square footage.
  - **[Albuquerque Bernalillo County Water Utility Authority, in collaboration with the University of New Mexico Earth Data Analysis Center, is conducting a spatial analysis initiative](#)** on irrigated landscapes in its service areas. The main goal is to classify these landscapes, focusing on identifying non-functional turf.



(Photos of Irrigated Landscapes Spatial Analysis, Courtesy of ABCWUA)

### HOW MUCH WATER DOES TURF USE AND HOW MUCH CAN BE SAVED?

Water use and savings will depend on the mix of turf types and climate in a given utility’s service area. Many utilities have developed service-area-specific water use and water savings metrics. For example, the Coachella Valley Water District estimates the potential savings from converting turf grass to desert landscape is approximately 55.8 gallons per square foot of turf converted. For utilities that have not done this yet, resources like the following reports provide valuable information about both water use and potential savings.

For residential turf replacement programs, [AWE’s Landscape Transformation Study: 2018 Analytics Report](#) found that average water savings ranged from 11 to 76 gallons/square foot annually. AWE is currently conducting a similar study for large, non-residential landscapes, which will provide additional data on water savings from landscape transformation and irrigation optimization.

### WHAT TO PLANT INSTEAD OF NFT?

Once NFT has been removed, there is continued work and exploration of what should be installed in its place, including things like plants, trees, hardscapes, and artificial turf. Pertinent resources include AWE’s [Sustainable Landscapes: A Utility Program Guide](#) and related [materials](#).



(Transforming Landscapes, Photos Courtesy of Metropolitan Water District of Southern California)

In recent trends, the following topics that have been receiving increasing attention:

- **DESERT FRIENDLY LANDSCAPING:** Many regions in the West have developed local guides for what to plant in a desert that will be pleasing to the eye and limit water use. For example, Coachella Valley Water District publishes a book, [Lush and Efficient](#), which is a guide to desert friendly landscaping in the Coachella Valley.
- **NATIVE GRASSES: IN** Colorado, there has been an emphasis on replacing cool-season turf with native grasses. In 2023 a working group released a document titled “[Colorado Native and Water Wise Grass Guide for Installation and Maintenance](#),” and Colorado Springs Utilities launched a [turf replacement program offering native grass](#) seeds to customers.
- **TREE HEALTH:** As turf replacement programs ramp up, there has been a greater recognition of how turf replacement could negatively affect tree health and otherwise increase urban heat. Some utilities, like [Albuquerque Bernalillo County Water Utility Authority](#), have long-standing “treebate” programs to help mitigate urban heat issues. Utilities like [Southern Nevada Water Authority](#) and Metropolitan Water District of Southern California have joined them in launching “treebate” programs to support the planting of trees alongside their turf replacement programs. Many central Arizona cities offer grass removal rebates that require plant coverage and encourage trees.

Several cities also have separate tree rebates for residents that can be combined with grass removal or a stand-alone rebate. Mesa, Tempe, and Peoria all offer incentives for planting desert trees. Peoria requires a sign-off for commercial grass removal rebates that they read and understand the BMPs of removing grass, which include tree protection. Some turf replacement programs have also added conditions and recommendations for protecting existing trees, including limiting mechanical removal around trees, leaving some grass below trees, and limiting hardscape near trees.

- **ARTIFICIAL TURF:** Replacing living turf grass with artificial turf has become increasingly common. While utilities have sometimes approved and encouraged this practice based on local conditions and policy preferences, there are other utilities and communities where this practice is being called into question or prohibited. In late 2022, the Western Resources Advocates put together a report examining this practice – “[Is Artificial Turf a Beneficial Water Conservation Tool in the West?](#)”.

## FUNDING – FEDERAL, STATE, AND LOCAL

The U.S. Bureau of Reclamation (Reclamation) has grant programs that can support water efficiency and conservation, and funding awarded under this program for turf replacement projects has been increasing. For example:

- 11 turf replacement programs were funded by Reclamation’s [2023 WaterSMART Water and Energy Efficiency Grants](#) program.
- More states are also funding turf replacement programs, including \$1.5 million in Colorado ([HB22-1151](#)) and \$8 million in Utah ([SB 118](#)).
- While there is no comprehensive report or registry of local utility turf replacement programs and their funding levels, the number of programs being announced has increased, and general activity among AWE members has increased, which strongly suggests that overall funding has increased as well.

## LOOKING AHEAD

Spurred by the CRB MOU, drought in many parts of the West, and sustained focus on water efficiency, 2023 was a big year for non-functional turf and related landscape transformations. With so much good work underway, it was impossible to cover all of it in this report, so we chose to summarize the current work with some representative examples.

The momentum for landscape transformation is expected to grow in 2024 and beyond. Because the data, policies, and programs are evolving, staying up to speed of what is happening throughout the West is important to AWE and its members. While geographies, landscapes, climates, and politics differ from place to place, information sharing is critical to developing sound, defensible, and effective approaches. AWE is committed to supporting its members in this process, so please reach out to [office@a4we.org](mailto:office@a4we.org) if we can assist you in this work.





#### About the Alliance for Water Efficiency

The Alliance for Water Efficiency (AWE) is a nonprofit organization dedicated to the efficient and sustainable use of water. AWE supports water conservation practitioners from over 500 member organizations, including water utility agencies, businesses and corporations, governmental agencies, nonprofits, and researchers, to advance the adoption of water-efficient practices, appliances, and programs across North America.

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