PIMA COUNTY DEVELOPMENT SERVICES DEPARTMENT



# SCREENING AND BUFFERYARD DESIGN MANUAL

**Final Draft August 30 2023**

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This manual contains references and standards needed to implement the requirements of the Pima County, Arizona, Code of Ordinances, Chapter 18.73, Landscaping, Buffering and Screening Standards.

This document was prepared by McGann and Associates under contract to Pima County Development Services Department to update the former Landscape Design Manual, August 2023.

Cover image provided by McGann and Associates.

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# INTRODUCTION

## FOR BUFFERYARD REQUIREMENTS IN PIMA COUNTY, AZ (SECTION 18.73.040)

## PURPOSE

This manual contains references and standards to implement the requirements of the Pima County (AZ) Zoning Code, Chapter 18.73, Landscaping, Buffering and Screening Standards. The purpose of this chapter is to 1) promote the region's unique desert environment, 2) conserve groundwater and Colorado River water resources by implementing low impact development practices, 3) require a desert-adapted regional plant palette, and 4) protect public health, safety and general welfare.

## OVERVIEW

Within chapter 18.73, Section 18.73.040, Screening and Bufferyard Requirements references the use of bufferyards, defined as landscaping elements, screening devices and physical space, as depicted in this *Screening and Bufferyard Design Manual,* used for reduction of the potentially adverse impacts of adjoining, dissimilar land uses.

The land use zones in the Pima County Code (Chapter 18.05) are ranked according to their intensity, based on the type and degree of nuisance or negative impact the more intensive use is likely to impose on less intensive, adjacent land uses. In these cases, developers shall provide bufferyards, based upon the requirements of this *Screening and Bufferyard Design Manual,* between uses to minimize the negative effects of their dissimilarity.

Planning, design and installation of landscape bufferyards, including stormwater infiltration basins, should be integrated early into the design and engineering of a site. Design for drainage, detention/retention and water harvesting on a site occurs early in the design process, working with the topography and contours of the site; bufferyards and basins should be part of that process. The water harvesting requirement for infiltration basins should be tied into drainage across the site.

The bufferyard standards in this manual specify the width to be dedicated and the density and diversity of planting required, with options for screening, to ameliorate nuisances between adjacent land uses or between a land use and public right-of-way (ROW). The standards also promote appropriate linkages (including but not limited to pedestrian and bicycling connectivity and safe routes) to compatible uses and public ROWs.

The manual also directs the use of water harvesting to increase on-site infiltration to benefit landscaping and reduce off-site drainage and erosion. Stormwater infiltration basins provide supplemental irrigation to landscape plants, which also contributes to shade and cooling, reduced flooding and improved stormwater quality, wildlife habitat and food source, and traffic calming.

The manual provides desert-adapted plant species permitted for use in bufferyards, and those that should especially be avoided or removed if found in the landscape.

## DESIGN MANUAL CONTENT

The *Screening and Bufferyard Design Manual* is divided into the following sections:

- **Bufferyard Requirements** (p. 5) Steps for identifying the required bufferyard by use in **Table 1** and the requisite parameters in **Table 2.**
  - » **Table 1 Required Bufferyard by Use** (p. 6) Places each county zone and ROW type into a Use Category and designates a Bufferyard Type required (A through E) between two Use Categories.
  - » **Table 2 Bufferyard Requirements** (p. 7) Includes canopy tree and understory density planting for each Bufferyard Type option, including a natural undisturbed desert bufferyard option, as well as types of screening.
- **Planting Illustrations** (pp. 8-10) General graphic display of the required planting for all bufferyard types (A - E) and their width options.
- **Screening Requirements** (p. 11) Information on design and materials, types of screening, and optional pedestrian access.
  - » **Screening Illustrations** (p. 12) Allowed types of screening that may be used along with photographic examples.
- **Water Harvesting Requirements** (p. 13) General parameters for stormwater infiltration basins within bufferyards.
  - » **Stormwater Infiltration Basin Illustrations** (p. 14) Examples of a typical water harvesting infiltration basin with general design guidance.
- **Official Regulatory Plant List** (pp. 15-28) Plant species by category, permitted for planting in bufferyards, with basic information about mature plant size and region of origin.
- **The Prohibited Plant List** (p. 29) Plant species that are designated noxious, invasive and/or non-native, which shall not be used within bufferyards, and should be removed if found in the landscape.
- **Appendix** (p. 30) Additional resources on water harvesting, maintenance, and plant information.

## REVISIONS AND EXCEPTIONS

The Planning Director or their designee may approve minor changes to this manual, which will be included in the manual by addendum. The Planning Director or designee may grant exceptions to the requirements of this manual on a project-by-project basis. Review and approval of revisions and exceptions will be based on the Purpose and Overview sections located in the Introduction of this manual.

# BUFFERYARD REQUIREMENTS

The following steps are intended to help determine the type of Bufferyard and provide some additional requirements:

1 Identify the Use Category of the proposed use.

2 Identify the Use Category of the existing land use/zone on adjacent properties, and any adjacent public street, scenic or gateway route and highway. (Scenic Routes are identified in the Pima County DOT Major Street and Scenic Routes Plan. Gateway Overlay Zones are referenced in the Pima County Zoning Code, Chapter 18.78-Gateway Overlay Zone.)

3 Determine the Bufferyard Type required on each boundary (or segment thereof) of the proposed use subject site by referring to the indicated letter designation from **Table 1**.

On adjacent, vacant parcels, the first use to develop shall provide the required bufferyard; the second use shall install any additional plant material and dedicate the land necessary to provide any additional bufferyard between the two uses, if/when the second use develops.

4 Choose an option from **Table 2** for required width, plant densities and screening.

- Bufferyards shall be located on the outer perimeter of a lot or parcel, extending to the boundary line; screening shall be located within the bufferyard, near the more intensive use.
- Bufferyard width may vary or meander, provided that the average bufferyard width is not less than the required width.
- Existing trees and plants in bufferyard may be used to satisfy planting requirements if they are included in the **Official Regulatory Plant List**.

5 Information on plants within the bufferyards should demonstrate meeting requirements for plan review, such as in the following sample table.

BUFFERYARD TYPE A
LENGTH = 350 LF, WIDTH = 10 LF
TOTAL AREA = 3,500 SF

| | REQUIRED | PROVIDED |
|---|---|---|
| TREES: | 11 | 11 |
| SHRUBS: | 21 | 23 |
| OTHER UNDERSTORY | 32 | 40 |

6 If irrigation systems are installed, they shall incorporate drip or other water-saving technology.

# TABLE 1 | REQUIRED BUFFERYARD BY USE

## SEE TABLE 2 FOR MINIMUM BUFFERYARD REQUIREMENTS

| | EXISTING ADJACENT USE/ZONE | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| PROPOSED USE | Low Density Residential | High Density Residential and Mixed-Use | General Commercial | Light Industrial | Heavy Industrial | Park/Other | Street 1 | Street 2 |
| Low Density Residential | None | None | None | None | None | None | A | B |
| High Density Residential and Mixed-Use | C | None | None | None | None | B | E | C |
| General Commercial | C | B | None | None | None | C | E | C |
| Light Industrial | D | D | D | None | None | D | B | D |
| Heavy Industrial | D | D | D | None | None | D | C | D |
| Park/Other | None | None | None | None | None | None | None | C |

## USE CATEGORIES

### Low Density Residential

IR Institutional Reserve
SR Suburban Ranch
SR-2 Suburban Ranch Estate
RH Rural Homestead
SH Suburban Homestead
CR-1 Single Residence
CR-2 Single Residence
CR-3 Single Residence
GR-1 Rural Residential

### High Density Residential and Mixed-Use

TH Trailer Homesite (RV)
CR-4 Mixed-Dwelling Type
CR-5 Multiple Residence
TR Transitional
CMH1 County Manufactured and Mobile Home
CMH2 County Manufactured and Mobile Home
MU Multiple Use

### General Commercial

MR Major Resort
RVC Rural Village Center
CB-1 Local Business
CB-2 General Business

### Light Industrial

CPI Campus Park Industrial
CI-1 Light Industrial/Warehousing

### Heavy Industrial

CI-2 General Industrial
CI-3 Heavy Industrial
115 kV Substation

### Park/Other

Golf Course
Public Park/Garden

### Street 1

Public Street

### Street 2

Scenic Route
Gateway Overlay
Federal and State Highways

# TABLE 2 | BUFFERYARD REQUIREMENTS

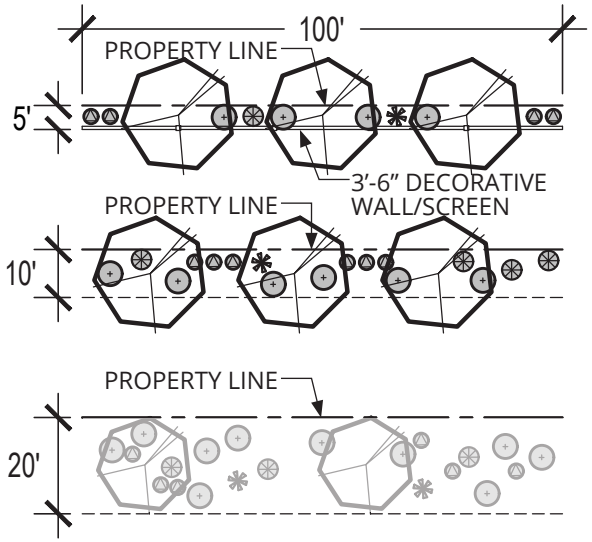
| TYPE | WIDTH | TREES PER 100 FEET* | UNDERSTORY PER 100 FEET* | SCREENING |
|---|---|---|---|---|
| A | Five (5) feet | 3 Canopy Trees | 4 Shrubs<br>6 Cacti & Succulents/Grasses/Subshrubs | 3' 6" Decorative Wall/Screen |
| | Ten (10) feet | 3 Canopy Trees | 6 Shrubs<br>9 Cacti & Succulents/Grasses/Subshrubs | None |
| | Twenty (20) feet Natural Undisturbed Desert | Not Applicable | Not Applicable | Not Applicable |
| B | Ten (10) feet | 4 Canopy Trees | 8 Shrubs<br>10 Cacti & Succulents/Grasses/Subshrubs | 6' Decorative Wall/Screen |
| | Twenty (20) feet | 4 Canopy Trees | 12 Shrubs<br>15 Cacti & Succulents/Grasses/Subshrubs | 6' Decorative Fence |
| | Thirty (30) feet | 4 Canopy Trees | 12 Shrubs<br>15 Cacti & Succulents/Grasses/Subshrubs | None |
| | Forty (40) feet Natural Undisturbed Desert | Not Applicable | Not Applicable | Not Applicable |
| C | Ten (10) feet | 4 Canopy Trees | 10 Shrubs<br>10 Cacti & Succulents/Grasses/Subshrubs | 6' Decorative Wall/Screen |
| | Twenty (20) feet | 4 Canopy Trees | 15 Shrubs<br>15 Cacti & Succulents/Grasses/Subshrubs | 6' Decorative Fence |
| | Thirty (30) feet | 4 Canopy Trees | 20 Shrubs<br>20 Cacti & Succulents/Grasses/Subshrubs | None |
| | Forty (40) feet Natural Undisturbed Desert | Not Applicable | Not Applicable | Not Applicable |
| D | Twenty (20) feet | 4 Canopy Trees | 20 Shrubs<br>10 Cacti & Succulents/Grasses/Subshrubs | 6' Decorative Wall/Screen |
| | Thirty (30) feet | 4 Canopy Trees | 30 Shrubs<br>15 Cacti & Succulents/Grasses/Subshrubs | 6' Decorative Fence |
| | Forty (40) feet | 4 Canopy Trees | 30 Shrubs<br>25 Cacti & Succulents/Grasses/Subshrubs | Not Applicable |
| | Fifty (50) feet Natural Undisturbed Desert | Not Applicable | Not Applicable | Not Applicable |
| E | Ten (10) feet | 4 Canopy Trees | 5 Shrubs<br>8 Cacti & Succulents/Grasses/Subshrubs | 3' 6" Decorative Wall/Screen |
| | Twenty (20) feet | 4 Canopy Trees | 10 Shrubs<br>16 Cacti & Succulents/Grasses/Subshrubs | 6' Decorative Fence |
| | Forty (40) feet Natural Undisturbed Desert | Not Applicable | Not Applicable | Not Applicable |

* Provides minimum required quantities of trees and understory plants from the **Official Regulatory Plant List**. Additional plants from the plant list are permitted.

# PLANTING ILLUSTRATIONS

Illustrations show a 100' bufferyard segment for the widths listed in **Table 2 Bufferyard Requirements,** and provides the required quantity of trees and understory plants. Required screening is included in the illustrations, see Screening Illustrations for more information.

## BUFFERYARD TYPE A



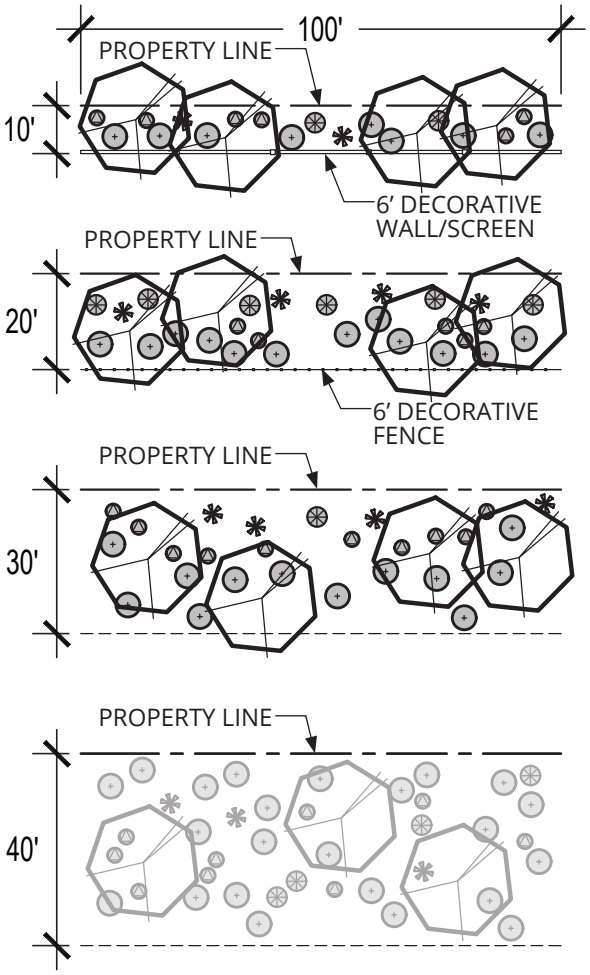

REQUIRED PLANT UNITS

3 Trees
4 Shrubs
6 Cacti & Succulents/Grasses/ Subshrubs

3 Trees
6 Shrubs
9 Cacti & Succulents/Grasses/ Subshrubs

Natural Undisturbed Desert

## BUFFERYARD TYPE B




REQUIRED PLANT UNITS

4 Trees
8 Shrubs
10 Cacti & Succulents/Grasses/ Subshrubs

4 Trees
12 Shrubs
15 Cacti & Succulents/Grasses/ Subshrubs

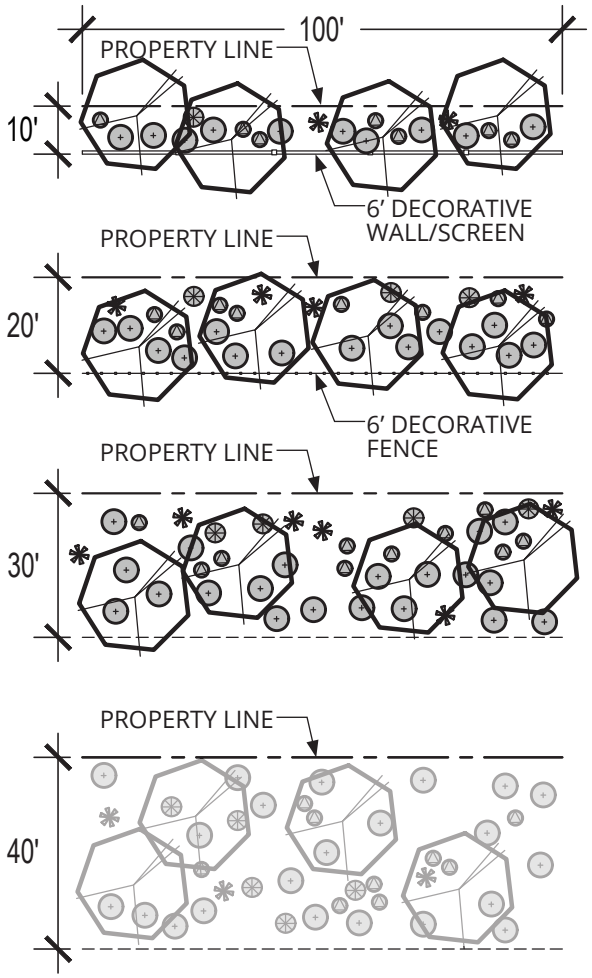
4 Trees
12 Shrubs
15 Cacti & Succulents/Grasses/ Subshrubs

Natural Undisturbed Desert

# PLANTING ILLUSTRATIONS

Illustrations show a 100' bufferyard segment for the widths listed in **Table 2 Bufferyard Requirements,** and provides the required quantity of trees and understory plants. Required screening is included in the illustrations, see Screening Illustrations for more information.

## BUFFERYARD TYPE C




REQUIRED PLANT UNITS

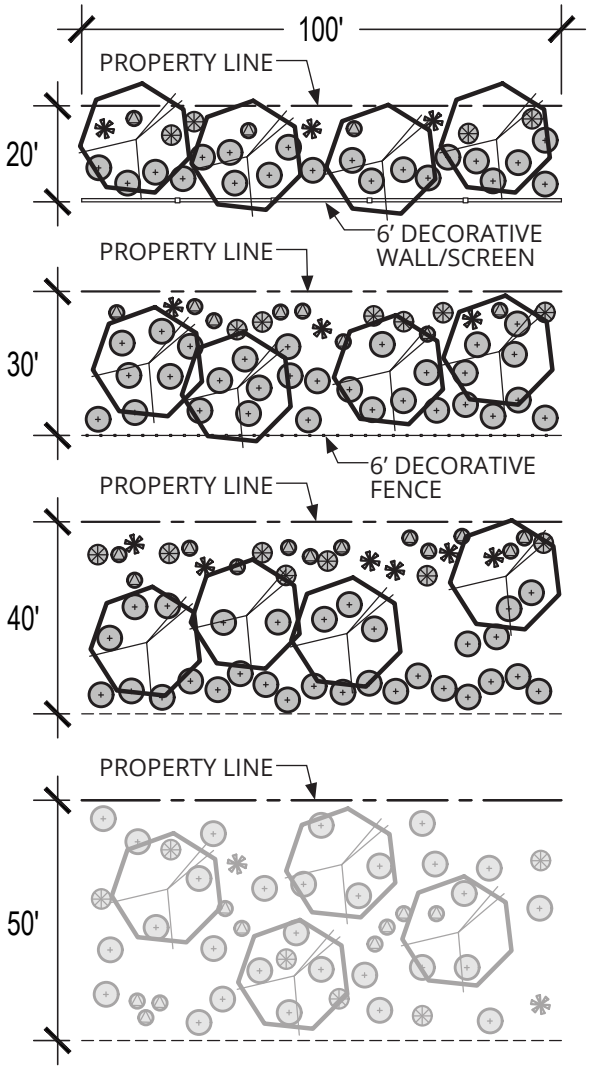
4 Trees
10 Shrubs
10 Cacti & Succulents/Grasses/ Subshrubs

4 Trees
15 Shrubs
15 Cacti & Succulents/Grasses/ Subshrubs

4 Trees
20 Shrubs
20 Cacti & Succulents/Grasses/ Subshrubs

Natural
Undisturbed
Desert

## BUFFERYARD TYPE D




REQUIRED PLANT UNITS

4 Trees
20 Shrubs
10 Cacti & Succulents/Grasses/ Subshrubs

4 Trees
30 Shrubs
15 Cacti & Succulents/Grasses/ Subshrubs

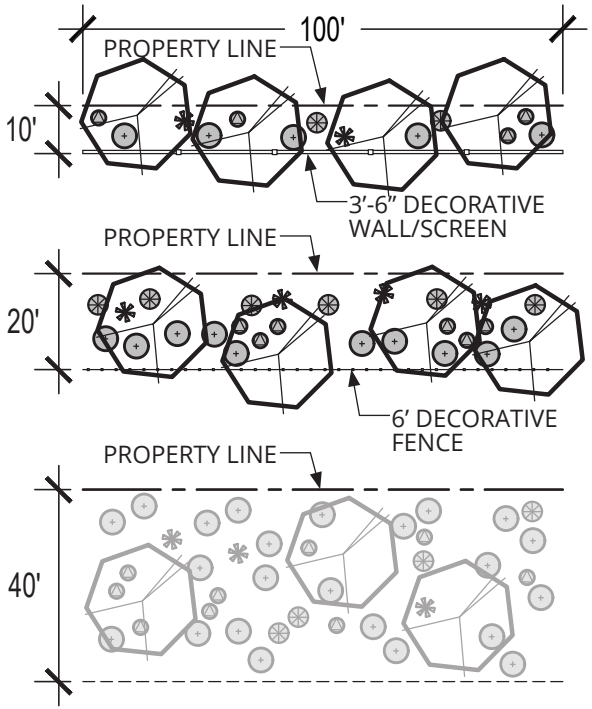
4 Trees
30 Shrubs
25 Cacti & Succulents/Grasses/ Subshrubs

Natural
Undisturbed
Desert

# PLANTING ILLUSTRATIONS

Illustrations show a 100’ bufferyard segment for the widths listed in **Table 2 Bufferyard Requirements,** and provides the required quantity of trees and understory plants. Required screening is included in the illustrations, see Screening Illustrations for more information.

## BUFFERYARD TYPE E




REQUIRED PLANT UNITS

4 Trees
5 Shrubs
8 Cacti & Succulents/Grasses/ Subshrubs

4 Trees
10 Shrubs
16 Cacti & Succulents/Grasses/ Subshrubs

Natural
Undisturbed
Desert

# SCREENING REQUIREMENTS

## PURPOSE

The purpose of screening is to provide an opaque (wall/screen) or see-through (fence) barrier for boundary delineation, exclusion or confinement, security, and to shield views, noise and light trespass.

## SCREENING DESIGN AND MATERIALS

- Screen may use a variety of materials, singly or in combination, but should avoid a uniform, monolithic appearance.
- Screen shall not use chain link (with or without slats), wood, vinyl or plastic, or similar materials that degrade in the desert environment.
- Standard grey CMU walls are prohibited.
- Decorative Wall/Screen is a solid screening that shall be constructed with masonry units, stone or sheet metal to be 100% opaque. Screening must be decorative, which requires the use of stucco, paint, texture, color or other elements, such as columns and caps, that improve the appearance of a block wall.
- Decorative Fences are a permeable screening that shall be constructed with metal posts, rails, and permeable panels or pickets. This does not exclude masonry or concrete columns.

## LOCATION

- All screening shall be built within the bufferyard near the higher intensity use.
- Masonry walls or foundations shall be built outside of infiltration basins.

## OPTIONS

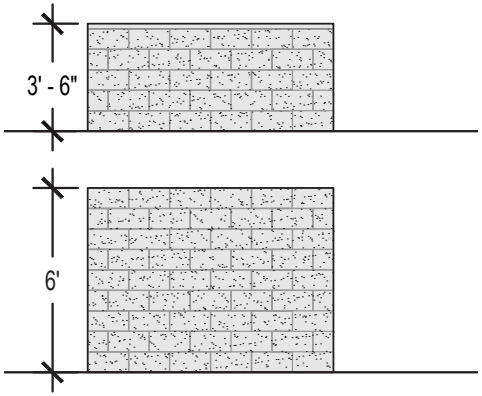
- If pedestrian or bicycle connectivity is provided through a bufferyard to an adjacent site, street or right-of-way, the required wall/screen or fence height can be reduced to 3'-6".

# SCREENING ILLUSTRATIONS

Illustrations show the required screening as determined in **Table 2 Bufferyard Requirements.**

## DECORATIVE WALL/SCREEN

Screen heights shown below meet the requirements for the listed bufferyards. Examples of additional solid screen styles are also shown for reference.




**REQUIRED**

Bufferyard A (5’ Wide)
Bufferyard E (10’ Wide)

Bufferyard B (10’ Wide)
Bufferyard C (10’ Wide)
Bufferyard D (20’ Wide)

DECORATIVE 3’-6” WALL/SCREEN EXAMPLES

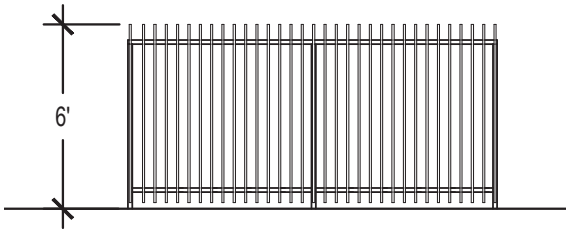


DECORATIVE 6’ WALL/SCREEN EXAMPLES



## DECORATIVE FENCE

The illustration below meets the requirements for the listed bufferyards. Examples of additional permeable screen styles are also shown for reference.




**REQUIRED**

Bufferyard B (20’ Wide)
Bufferyard C (20’ Wide)
Bufferyard D (30’ Wide)
Bufferyard E (20’ Wide)

DECORATIVE 6’ FENCE EXAMPLES



# WATER HARVESTING REQUIREMENTS

Properly functioning stormwater basins depend on infiltration. Basins with infiltration rates greater than 1 inch per hour promote healthy vegetation, create drought resilience, and greatly improve water quality. Good infiltration depends on a good substrate and healthy soils. Application of organic mulch increases water infiltration and promotes soil moisture retention helping plants develop deeper root systems, which improves their stability. Basin bottoms also benefit from root systems of native bunch grass to promote water infiltration and improve soil stability.

Bufferyards must include stormwater infiltration basins as follows:

- Basins are required in all bufferyards, except for natural undisturbed desert bufferyards and bufferyards less than 10 feet wide.
- Organic mulch is preferred in basins to increase water quality and soil health benefits.
- To prevent loss of mulch from basins during larger storm events, consider placing mulch under riprap at least 4 inches in diameter or larger.
- Basins shall not contain fines or crushed rock mulch smaller than ½-inch in diameter.
- Basins shall be stabilized for dust control without impeding infiltration.
- Cacti, succulents, accents and other low-water use species shall be planted outside of the basin or on basin slopes.
- All water harvesting infiltration basins shall be integrated into and coordinated with the civil drainage and grading plan, and shall graphically represent the top of basin and bottom of basin on Improvement Plans, Grading Plans (Chapter 18.81 Grading Standards), and in Landscape Plans (Section 18.73.060 Landscape plan requirements).
- Basins shall be located away from irrigation valve boxes, underground utilities and the like.
- Basins shall meet the following setbacks as measured from the top of the basin slope:
  - » Minimum of 1 foot from pedestrian access path and off-street parking areas
  - » Minimum of 2 feet from back of curb or edge of pavement for streets with on-street parking
  - » Minimum of 10 feet from structures, or minimum setback specified in a geotechnical report for project
  - » Minimum of 4 feet from access space for maintenance

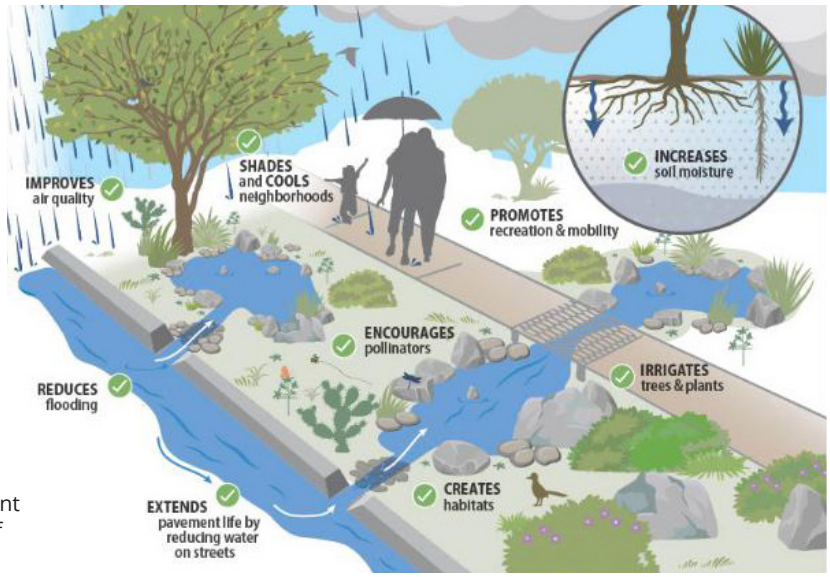



Illustration from Green Stormwater Infrastructure and Low Impact Development Standard Details and Site Guidance, City of Tucson and Pima County, November 2022

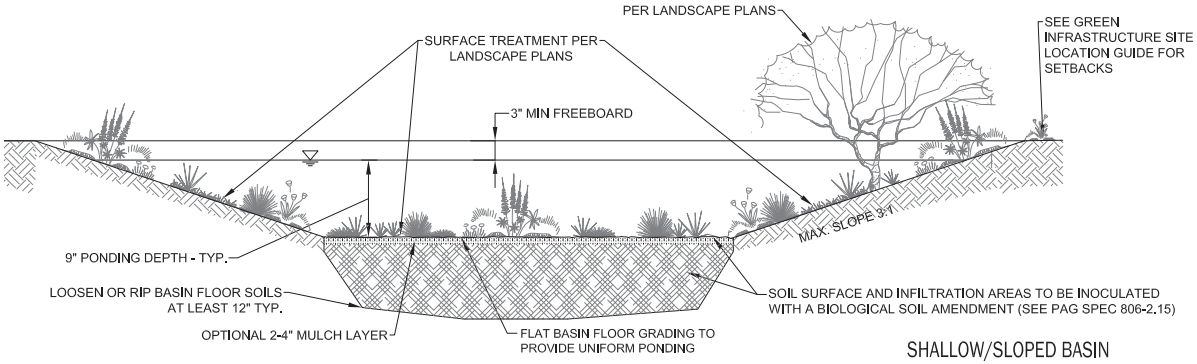
# STORMWATER INFILTRATION BASIN ILLUSTRATIONS

The illustrations below are typical examples of stormwater infiltration basins with general design guidance. More detailed information for water harvesting basins and similar green stormwater infrastructure is available in the county/city manual, Green Stormwater Infrastructure and Low Impact Development Standard Details and Site Guidance.

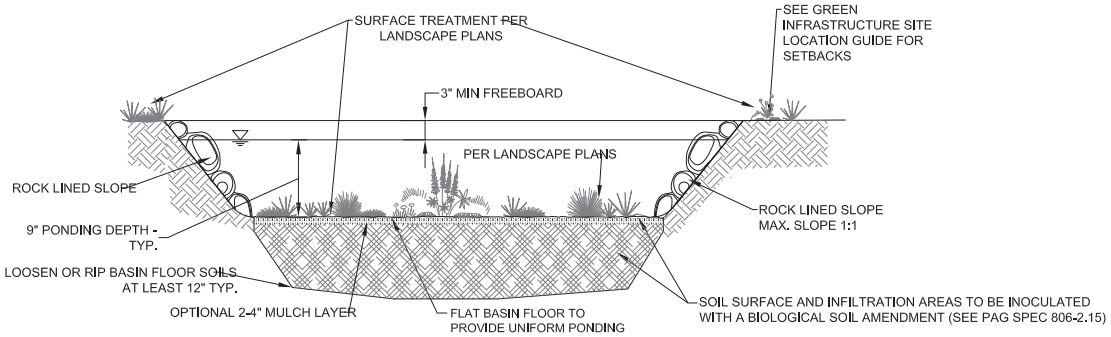
## STORMWATER INFILTRATION BASIN EXAMPLES

### Example Section View

Not To Scale



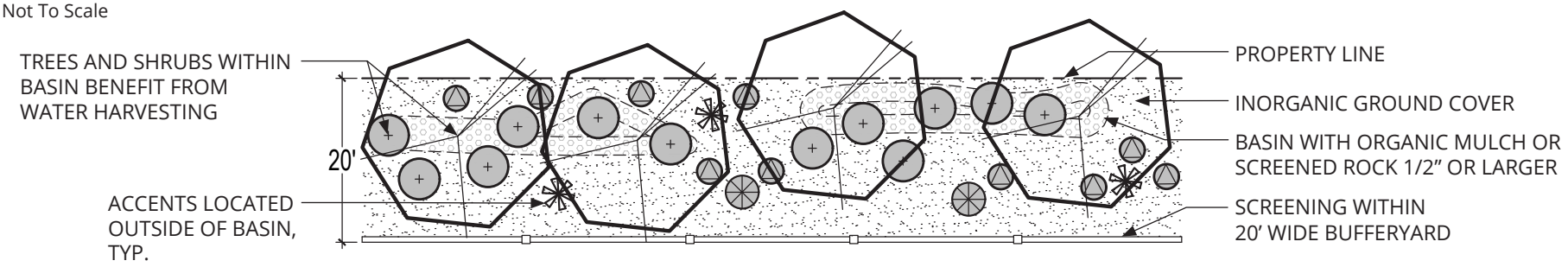

SHALLOW/SLOPED BASIN




STEEP/ROCKED BASIN

### Example Plan View

Not To Scale



# OFFICIAL REGULATORY PLANT LIST

## OVERVIEW

This list of drought resistant, low-water use plants was compiled with the cooperation of recognized experts in the plant nursery, research and landscape design professions. It is recommended by Pima County for all regulatory and privately initiated landscaping requirements.

All plant materials on this list are approved for use in complying with the landscaping, buffering and screening requirements outlined in this ordinance. All cultivars (cultivated varieties) of plants on the list are also automatically approved for use. Hybrids are prohibited.

The materials are further recommended to individual property owners desiring locally available plant materials which offer cost-effective and aesthetically pleasing qualities, and that have been consistently used and proved successful in the eastern Pima County and Tucson area.

The plants on this list can be grown with moderate to no supplemental irrigation once they are established. Occasionally, for good appearance, supplemental irrigation may be applied during the growing season. In addition to the cacti on this list, any cacti salvaged and tagged in compliance with state agricultural and horticultural regulations may be used.

Even though all of the plants on the **Official Regulatory Plant List** meet the Arizona Department of Water Resources (ADWR) standard for low consumption, please check the regulations of the governing jurisdiction to determine whether a particular plant selection meets all locational, aesthetic, or functional requirements. For example, plants used for screening may have to be evergreen, have dense foliage, and grow to required heights. On the other hand, plants used within sight visibility triangles may have height restrictions. In some applications, there may be a requirement for native materials or a “desert or natural appearance.”

The Pima County Planning Director or their designee may approve changes to the plant list, which would be included in the manual by addendum, and may grant exceptions on a project-by-project basis. Review and approval of changes and exceptions will be based on the Purpose and Overview sections located in the Introduction of this manual.

# OFFICIAL REGULATORY PLANT LIST

## KEY TO SYMBOLS

B Buffer Overlay Zone Use

E Evergreen

G Seed Grown or transplant on site only permitted

H Habitat — provide habitat for native birds and insects

M Male only

P Pollinators — provide food for native pollinators

S Semi-hardy — some dieback in a hard frost

T Toxic; may be harmful if eaten. For more information visit www.azpoison.com, or call the Arizona Poison Control Center at 1-800-222-1222.

## NATIVE REGION DEFINITIONS

Chihuahuan Desert (CD) — broadly interpreted to include a large area of north central and northwest Mexico, southwest Texas, southern New Mexico and extreme southeast Arizona

Sonoran Desert (SD) — broadly interpreted to include the arid and semi-arid areas of northwest Mexico, southeast California and most of Arizona south of the Mogollon Rim

* — native to Pima County

Mojave Desert (MD)— broadly interpreted to include the arid areas of southeast California and southwestern Nevada with small portions extending into northwestern Arizona and southwestern Utah

## PLANT CATEGORIES

The plant list organizes species by the following categories:

Cacti and Succulents

Grasses

Shrubs

Subshrubs (Groundcovers, Herbaceous Perennials, Shrubs Smaller Than 3’ x 3’)

Trees

Vines

## CACTI AND SUCCULENTS

| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
|---|---|---|---|---|
| *Agave americana* | Century Plant | 6′ X 10′ | CD | B/H |
| *Agave angustifolia* v. *marginata* | Narrow Leaf Agave | 3′ X 4′ | | B/H |
| *Agave bracteosa* | Squid Agave | 2′ X 2′ | CD | B/H |
| *Agave chrysantha* | Golden Flower Agave | 3′ x 5′ | SD* | B/H |
| *Agave colorata* | Mescal Ceniza | 2′ X 3′ | SD | B/H |
| *Agave desmettiana* | Smooth Agave | 3′ X 3′ | | B/H/S |
| *Agave filifera* | Thread-Leaf Agave | 2′ X 3′ | CD | B/H |
| *Agave geminiflora* | Twin-Flowered Agave | 3′ X 3′ | | B/H |
| *Agave murpheyi* | Murphey's Agave | 3′ X 3′ | SD* | B/H |
| *Agave ocahui* | Ocahui Agave | 2′ X 3′ | SD | B/H |
| *Agave ovatifolia* | Whale's Tongue Agave | 4′ X 5′ | | B/H |
| *Agave palmeri* | Palmer's Agave | 3′ X 4′ | SD* | B/H/P |
| *Agave parryi* | Parry's Agave | 2′ X 2′ | SD* | B/H |
| *Agave parryi* var. *huachucensis* | Huachuca Agave | 3′ X 3′ | SD | B/H |
| *Agave parviflora* | Small Flowered Agave | .5′ X .7′ | SD* | B/H |
| *Agave pelona* | Mezcal Pelón | 2′ X 2.5′ | SD | B/H |
| *Agave schottii* | Schott Agave | 2′ X 4′ | SD* | B/H/P |
| *Agave striata* | Espadín | 3′ X 3′ | MD | B/H |
| *Agave utahensis* | Utah Agave | 1′ X 2′ | MD | B/H |
| *Agave victoriae-reginae* | Queen Victoria Agave | 1′ X 2′ | | B/H |
| *Agave vilmoriniana* | Octopus Agave | 4′ X 6′ | SD | B/H/S |
| *Agave weberi* | Weber Agave | 6′ X 6′ | | B/H |
| *Carnegiea gigantea* | Saguaro | 40′ X 15′ | SD* | B/H/P |
| *Cylindropuntia arbuscula* | Pencil Cholla | 5′ X 4′ | SD* | B |
| *Cylindropuntia bigelovii* | Teddy Bear Cholla | 5′ X 3′ | SD*/MD | B/H |
| *Cylindropuntia versicolor* | Staghorn Cholla | 10′ X 6′ | SD* | B/H |
| *Dasylirion acrotriche* | Green Desert Spoon | 4′ X 5′ | CD | |

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## CACTI AND SUCCULENTS (CONTINUED)

| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
|---|---|---|---|---|
| *Dasylirion leiophyllum* | Green Sotol | 4′ X 6′ | CD | |
| *Dasylirion quadrangulatum* | Toothless Desert Spoon | 4′ X 5′ | CD | |
| *Dasylirion texanum* | Texas Sotol | 5′ X 5′ | CD | |
| *Dasylirion wheeleri* | Desert Spoon | 4′ X 5′ | SD*/CD | B |
| *Echinocactus grusonii* | Golden Barrel Cactus | 3′ X 2′ | | B |
| *Echinocereus engelmannii* | Engelmann Hedgehog | 1′ X 2′ | SD* | B |
| *Echinocereus nicholii* | Golden Spined Hedgehog | 1′ X 2′ | SD* | |
| *Euphorbia antisyphilitica* | Candelilla | 3′ X 3′ | CD | |
| *Euphorbia lomelii* | Lady Slipper | 4′ X 4′ | SD | B/S |
| *Ferocactus cylindraceus* | Compass Barrel | 2′ X 1.5′ | SD*/MD | B/H/P |
| *Ferocactus emoryi* | Coville Barrel | 2′ X 1.5′ | SD* | |
| *Ferocactus wislizeni* | Fishhook Barrel | 2′ X 1.5′ | SD*/CD | |
| *Fouquieria columnaris* | Boojum Tree | 40′ X 3′ | SD | S |
| *Fouquieria macdougalii* | Mexican Tree Ocotillo | 20′ X 20′ | SD | B/S |
| *Fouquieria splendens* | Ocotillo | 16′ X 13′ | SD*/CD/MD | B/G |
| *Hesperaloe campanulata* | Bell Flowering Hesperaloe | 3′ X 3′ | | |
| *Hesperaloe funifera* | Giant Hesperaloe | 5′ X 5′ | CD | |
| *Hesperaloe nocturna* | Night Flowering Hesperaloe | 3′ X 3′ | CD | B |
| *Hesperaloe parviflora* and cultivars | Red Yucca | 3′ X 4′ | CD | P |
| *Lophocereus schottii* | Senita Cactus | 10′ X 10′ | SD | B |
| *Lophocereus schottii f. monstrosus* | Totem Pole Cactus | 10′ X 8′ | | |
| *Mamillaria grahamii* | Graham fishhook | 0.5′ X 1′ | SD*/CD | B |
| *Nolina bigelovii* | Bigelow's Nolina | 6′ X 4′ | SD/MD | B/H |
| *Nolina matapensis* | Tree Beargrass | 20′ X 6′ | CD | B/H |
| *Nolina microcarpa* | Beargrass | 3′ X 6′ | SD* | B/H |
| *Nolina nelsonii* | Blue Nolina | 4′ X 6′ | | H |

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| CACTI AND SUCCULENTS (CONTINUED) | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Nolina parryi* | Parry's Beargrass | 5′ X 5′ | SD/MD | B/H |
| *Opuntia basilaris* | Beavertail Pricklypear | 2′ X 3′ | SD/MD | B |
| *Opuntia engelmannii* | Engelmann's Pricklypear | 5′ X 6′ | SD*/CD/MD | B/H/P |
| *Opuntia ficus-indica* | Indian Fig | 10′ X 10′ | | H |
| *Opuntia macrocentra* | Black-Spine Prickly Pear | 2′ X 3′ | SD*/CD | B/H |
| *Opuntia phaeacantha* | Brown-Spined Prickly Pear | 3′ X 5′ | SD*/CD | H/P |
| *Opuntia santa-rita* and cultivars | Santa Rita Prickly Pear | 4′ X 4′ | SD*/CD | B/H/P |
| *Pachycereus marginatus* | Mexican Fence Post | 7′ X 4′ | | S |
| *Peniocereus greggii* | Arizona Queen of the Night | 6′ X 3′ | SD* | B/H/P |
| *Stenocereus thurberi* | Organ Pipe Cactus | 8′ X 5′ | SD | B |
| *Tephrocactus articulatus* | Pinecone Pricklypear | 3′ X 1′ | | |
| *Yucca baccata* | Banana Yucca | 3′ X 5′ | SD*/CD/MD | B/H |
| *Yucca baileyi* | Navajo Yucca | 4′ X 2′ | | B/H |
| *Yucca brevifolia* | Joshua Tree | 15′ X 8′ | MD | B/H |
| *Yucca constricta* | Buckley Yucca | 5′ X 5′ | CD | B/H |
| *Yucca elata* | Soaptree Yucca | 10′ X 5′ | SD*/CD | B/H |
| *Yucca faxoniana* | Giant Dagger Yucca | 7′ X 4′ | CD | B/H |
| *Yucca glauca* | Soapweed Yucca | 3′ X 3′ | CD | B/H/S |
| *Yucca harrimaniae* | Harriman's Yucca | 1′ X 1.5′ | | B/H |
| *Yucca pallida* | Twistleaf Yucca | 2′ X 2′ | | B/H |
| *Yucca rigida* | Mexican Blue Dagger Yucca | 12′ X 5′ | CD | B/H |
| *Yucca rostrata* | Beaked Yucca | 12′ X 9′ | CD | B/H |
| *Yucca schidigera* | Mojave Yucca | 15′ X 10′ | MD | B/H |
| *Yucca schottii* | Mountain Yucca | 15′ X 4′ | SD | B/H |
| *Yucca thompsoniana* | Thompson's Yucca | 10′ X 5′ | MD | B/H |

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## GRASSES

| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
|---|---|---|---|---|
| *Achnatherum hymenoides* | Indian Ricegrass | 2′ X 2′ | SD*/CD | B |
| *Aristida purpurea* | Purple Three-Awn | 2′ X 1′ | SD*/CD | B |
| *Bothriochloa barbinodis* | Cane Beardgrass | 3′ X 3′ | SD*/CD | B/H |
| *Bouteloua* spp. | Grama Grass | 1′ X 1′ | SD*/CD | B/H |
| *Cathestecum erectum* | False Grama | 0.5′ X 1′ | CD | B |
| *Dasyochloa pulchella* | Low Woollygrass, Fluffgrass | 1′ X 2′ | SD*/MD | |
| *Digitaria californica* | Arizona Cottontop | 2′ X 1.5′ | SD*/CD | B |
| *Eragrostis intermedia* | Plains Lovegrass | 2′ X 1′ | SD*/CD | B |
| *Heteropogon contortus* | Tanglehead | 3′ X 2′ | SD*/SD | B |
| *Hilaria belangeri* | Curly-Mesquite, Curly Mesquite Grass | 0.5′ X 1′ | SD*/CD | B/P |
| *Hilaria mutica* | Tobosagrass | 2′ X 2′ | SD*/CD | B |
| *Hilaria rigida* | Big Galleta, Big Galleta Grass | 3′ x 1′ | SD*/CD/MD | B |
| *Leptochloa dubia* | Green Sprangletop | 3′ X 1′ | SD*/CD | H |
| *Muhlenbergia capillaris* | Regal Mist | 3′ X 3′ | U.S. | |
| *Muhlenbergia dumosa* | Bamboo Muhly | 6′ X 6′ | SD* | B/H |
| *Muhlenbergia emersleyi* | Bullgrass | 4′ X 4′ | SD*/CD | B/H |
| *Muhlenbergia lindheimeri* | Autumn Glow | 5′ X 5′ | CD | |
| *Muhlenbergia porteri* | Bush Muhly | 2′ X 3′ | SD*/CD/MD | B |
| *Muhlenbergia rigens* | Deergrass | 4′ X 4′ | SD*/CD | B |
| *Muhlenbergia rigida* | Purple Muhlenbergia | 5′ X 3′ | SD*/CD | B |
| *Pappophorum vaginatum* | Pappus Grass | 3′ X 2′ | SD* | B |
| *Sporobolus airoides* | Alkali Sacaton | 5′ X 3′ | SD*/CD | B |
| *Sporobolus contractus* | Spike Dropseed | 3′ X 1′ | SD*/CD | B |
| *Sporobolus cryptandrus* | Sand Dropseed | 2′ X 1′ | SD*/CD | B |
| *Sporobolus flexuosus* | Mesa Dropseed | 3′ X 1′ | SD*/CD | B |

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## GRASSES (CONTINUED)

| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
|---|---|---|---|---|
| *Sporobolus wrightii* | Big Sacaton | 5′ X 4′ | SD*/CD | B |
| *Trichloris crinita* | Two-Feather Trichloris | 3′ X 1′ | SD*/CD | B |
| *Tridens muticus* | Slim Tridens | 1.5′ X 0.5′ | SD*/CD | B |

## SHRUBS

| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
|---|---|---|---|---|
| *Abutilon palmeri* | Indian Mallow | 3′ X 4′ | SD* | B/H |
| *Acaciella angustissima* | White Ball Acacia | 5′ X 5′ | SD* | B/H/S |
| *Aloysia gratissima* | Bee Brush | 6′ X 8′ | SD*/CD | B/P |
| *Aloysia wrightii* | Oreganillo | 4′ X 4′ | SD*/CD | B/P |
| *Amsonia grandiflora* | Large-Flowered Blue Star | 3′ X 3′ | SD* | B |
| *Anisacanthus quadrifidus* | Flame Anisacanthus | 5′ X 5′ | CD | P |
| *Anisacanthus thurberi* | Desert Honeysuckle | 6′ X 4′ | SD* | B/H/P |
| *Asclepias linaria* | Pine Leaf Milkweed | 3′ X 3′ | SD* | B/H/P |
| *Asclepias subulata* | Desert Milkweed | 3′ X 3′ | SD*/CD | B/H/P/S |
| *Atriplex canescens* | Fourwing Saltbush | 5′ X 5′ | SD*/CD | B/E/H |
| *Atriplex polycarpa* | Desert Saltbush | 4′ X 4′ | SD* | B/E/H |
| *Baccharis sarothroides* | Desert Broom | 5′ X 5′ | SD* | E/M/P |
| *Bebbia juncea* | Chuckwalla Delight | 3′ X 3′ | SD*/CD | B/P |
| *Berberis haematocarpa* | Red Barberry | 5′ X 5′ | SD* | B/E/H/P |
| *Berberis trifoliolata* | Algerita | 5′ X 5′ | SD* | B/E/P |
| *Buddleja marrubiifolia* | Woolly Butterfly Bush | 5′ X 5′ | CD | B/E/P |
| *Calliandra californica* | Baja Fairy Duster | 5′ X 5′ | SD | B/E/H/P |
| *Calliandra eriophylla* | Fairy Duster | 3′ X 4′ | SD* | B/E/H/P |
| *Canotia holacantha* | Crucifixion Thorn | 10′ X 12′ | SD* | B |
| *Castela emoryi* | Crucifixion Thorn | 10′ X 12′ | SD* | B |

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| **SHRUBS** (CONTINUED) | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Celtis pallida* | Desert Hackberry | 16′ X 10′ | SD*/CD | B/E/H |
| *Condalia globosa* | Bitter Condalia | 8′ X 8′ | SD* | B/E |
| *Condalia warnockii* var. *kearneyana* | Condalia | 8′ X 8′ | SD*/CD | B/E/H/P |
| *Cordia parvifolia* | Little-Leaf Cordia | 6′ X 8′ | SD/CD | B/E/P |
| *Coursetia glandulosa* | Coursetia, Baby Bonnets | 8′ X 12′ | SD* | P/S |
| *Dalea bicolor* var. *bicolor* | Monterrey Blue Dalea | 5′ X 6′ | | E/P |
| *Dalea bicolor* var. *argyrea* | Dalea Bicolor | 4′ X 4′ | CD | B/E/H/P |
| *Dalea frutescens* | Black Dalea | 3′ X 3′ | CD | B/H/P |
| *Dalea pulchra* | Indigo Bush | 6′ X 5′ | SD* | B/E/H/P |
| *Dalea versicolor* var. *sessilis* | Indigo Bush | 4′ X 5′ | SD* | B/E/H/P |
| *Dodonaea viscosa* | Hopseed Bush | 15′ X 12′ | SD*/CD | B/E/S |
| *Encelia farinosa* | Brittlebush | 3′ X 3′ | SD*/MD | B/P/S |
| *Encelia virginensis* | Green Brittlebush | 3′ X 3′ | SD*/MD | P |
| *Ephedra aspera (E. nevadensis)* | Mormon Tea | 5′ X 4′ | SD*/MD | B/E |
| *Ericameria laricifolia* | Turpentine Bush | 3′ X 3′ | SD*/CD/MD | B/E/P |
| *Eriogonum fasciculatum* | Flattop Buckwheat | 3′ X 4′ | SD*/MD | B/E/H/P |
| *Fallugia paradoxa* | Apache Plume | 6′ X 4′ | SD*/CD/MD | B/H/P |
| *Gossypium harknessii* | Wild Cotton | 3′ X 3′ | SD* | B/S |
| *Guaiacum coulteri* | Guayacán | 8′ X 8′ | | E/H/S |
| *Hibiscus coulteri* | Yellow Hibiscus | 3′ X 3′ | SD*/CD | B/P |
| *Holacantha emoryi* | Crucifixion Thorn | 8′ x 8′ | SD* | P |
| *Hyptis albida* | Desert Lavender | 6′ X 5′ | SD* | B |
| *Jatropha cardiophylla* | Limberbush | 3′ X 4′ | SD* | B |
| *Jatropha dioica* | Jatropha | 3′ X 3′ | CD | |
| *Justicia californica* | Chuparosa | 3′ X 4′ | SD* | B/H |
| *Justicia candicans* | Red Justicia | 4′ X 3′ | SD* | E/H/S |

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| **SHRUBS** (CONTINUED) | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Justicia spicigera* | Mexican Honeysuckle | 3′ X 3′ | | E/H/S |
| *Koeberlinia spinosa* | Crown of Thorns | 8′ X 6′ | SD* | B/H |
| *Larrea tridentata* | Creosote Bush | 8′ X 8′ | SD*/CD | B/E/P |
| *Leucophyllum* spp. | Texas Ranger | Varies | CD | E/H/P |
| *Lycium andersonii* | Desert Wolfberry | 5′ X 5′ | SD* | B/H/P |
| *Lycium berlandieri* | Narrowleaf Wolfberry | 5′ X 5′ | SD*/CD | B/H/P |
| *Lycium exsertum* | Thornbush | 5′ X 5′ | SD* | B/H/P |
| *Lycium fremontii* | Fremont's Wolfberry | 5′ X 5′ | SD* | B/H/P |
| *Lycium pallidum* | Desert Thorn | 4′ X 6′ | SD*/MD | B/H/P |
| *Maytenus phyllanthoides* | Mangle Dulce | 12′ X 12′ | | B |
| *Mimosa biuncifera* | Catclaw Mimosa | 6′ X 6′ | SD* | B/H/P |
| *Mimosa dysocarpa* | Velvetpod | 4′ X 5′ | SD* | B/H |
| *Poliomintha maderensis* | Lavender Spice | 3′ X 3′ | | P |
| *Plumbago scandens* | White Plumbago | 3′ X 4′ | SD* | H/P |
| *Rhus microphylla* | Littleleaf Sumac | 8′ X 8′ | SD/CD | B/H/P |
| *Rhus ovata* | Sugar Sumac | 10′ X 10′ | SD | B/E/P |
| *Rhus trilobata* | Three Leaf Sumac | 5′ X 8′ | SD/CD | B/P |
| *Rhus virens* | Evergreen Sumac | 12′ X 12′ | SD*/CD | B/E/P |
| *Ruellia californica* | Sonoran Desert Ruellia | 4′ X 4′ | SD | B/H/P/S |
| *Ruellia peninsularis* | Baja Ruellia | 4′ X 4′ | SD | B/H/P/S |
| *Salvia clevelandii* | Cleveland Sage | 5′ X 5′ | | P/S |
| *Salvia greggii* | Autumn Sage | 3′ X 3′ | CD | B/P/E |
| *Salvia mohavensis* | Mojave Sage | 3′ X 3′ | SD/MD | B/P |
| *Senna lindheimeriana* | Lindheimer Senna | 3′ X 2′ | CD | B/H/P/S |
| *Senna purpusii* | Baja Senna | 6′ X 5′ | SD | B/H/P/S |
| *Senna wislizeni* | Shrubby Senna | 8′ X 8′ | SD/CD | B/H/P |

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| **SHRUBS** (CONTINUED) | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Simmondsia chinensis* | Jojoba | 8' X 8' | SD* | B/E |
| *Sphaeralcea ambigua* | Desert Globemallow | 3' X 3' | SD*/MD | B/H/P |
| *Tecoma stans* | Arizona Yellow Bells | 10' X 8' | SD*/CD | B/S |
| *Trixis californica* | Trixis | 3.5' X 3.5' | SD*/CD/MD | E/P |
| *Vachellia rigidula* | Blackbrush Acacia | 15' X 15' | CD | E/H/P |
| *Vauquelinia californica* | Arizona Rosewood | 15' X 15' | SD* | B/E/H |
| *Vauquelinia corymbosa* | Slimleaf Rosewood | 15' X 15' | CD | E/H |
| *Viguiera stenoloba* | Skeleton-Leaf Goldeneye | 4' X 3' | SD*/CD | P |
| *Ziziphus obtusifolia* | Greythorn | 10' X 8' | SD*/CD | B/H |

| **SUBSHRUBS** (GROUNDCOVERS, HERBACEOUS PERENNIALS, SHRUBS SMALLER THAN 3' X 3') | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Acmispon rigidus* | Shrubby Deervetch | 2' X 2' | SD*/MD | B |
| *Ambrosia deltoidea* | Triangle-Leaf Bursage | 2' X 2' | SD* | B |
| *Ambrosia dumosa* | White Bursage | 2' X 2' | SD* | B |
| *Artemisia ludoviciana* | Prairie Sagebursh | 1' X 3' | SD*/CD | B/H |
| *Bahia absinthifolia* | Desert Daisy | 1' X 0.5' | SD*/CD | B/P |
| *Bahiopsis parishii* | Parish's Goldeneye | 2' X 2' | SD/MD | B/H/P |
| *Baileya multiradiata* | Desert Marigold | 1' X 1' | SD*/CD | B |
| *Berlandiera lyrata* | Chocolate Flower | 2' X 2' | SD*/CD | P |
| *Calylophus berlandieri* | Berlandier's Sundrops | 1' X 3' | CD | |
| *Calylophus hartwegii* | Hartweg's Sundrops | 1' X 2' | SD*/CD | H/P |
| *Chrysactinia mexicana* | Damianita | 2' X 2' | CD | E/P |
| *Dalea capitata* | Yellow Dalea | 3' X 1' | CD | B/E/H/P |
| *Dalea formosa* | Feather Dalea | 2' X 2' | SD*/CD | P |
| *Dalea greggii* | Trailing Dalea | 2' X 4' | CD | B/E/H/P |

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| **SUBSHRUBS** (CONTINUED) | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Datura wrightii* | Sacred Datura | 2′ X 3′ | SD*/CD/MD | B/P/S/T |
| *Dicliptera resupinata* | Arizona Foldwing | 2′ X 2′ | SD*/CD | B/H/P |
| *Eriogonum wrightii* | Wright Buckwheat | 2′ X 2′ | SD*/CD | B/E/H/P |
| *Glandularia gooddingii* | Goodding's Verbena | 1′ X 3′ | SD* | B/P |
| *Gutierrezia sarothrae* | Snakeweed | 2′ X 2′ | SD*/CD | P |
| *Lupinus arizonicus* | Arizona Lupine | 1′ x 1′ | SD/MD | B |
| *Melampodium leucanthum* | Blackfoot Daisy | 1.5′ X 1′ | SD*/CD | P |
| *Menodora scabra* | Rough Menodora | 1′ X 1′ | SD*/CD/MD | B |
| *Oenothera berlandieri* | Mexican Evening Primrose | 1′ X 3′ | CD | S |
| *Oenothera caespitosa* | Tufted Evening Primrose | 1′ X 3′ | SD* | B/P |
| *Oenothera stubbei* | Chihuahuan Primrose | 1′ X 2′ | CD | |
| *Penstemon barbatus* | Beardtongue Penstemon | 1′ X 1′ | SD*/CD/MD | B/P |
| *Penstemon eatonii* | Firecracker Penstemon | 1′ X 1′ | SD* | B/P |
| *Penstemon palmeri* | Palmer Penstemon | 2′ X 2′ | SD*/MD | P |
| *Penstemon parryi* | Parry Penstemon | 1′ X 1′ | SD* | B/P |
| *Penstemon pseudospectabilis* | Canyon Penstemon | 1′ X 1′ | SD*/MD | B/P |
| *Penstemon subulatus* | Little Beardtongue | 1′ X 1′ | SD* | B/P |
| *Penstemon superbus* | Superb Penstemon | 2′ X 2′ | SD*/CD | B/P |
| *Psilostrophe cooperi* | Paper Flower | 2′ X 2′ | SD*/CD/MD | B |
| *Psilostrophe tagetina* | Woolly Paper Flower | 2′ X 2′ | SD*/CD | B |
| *Salvia dorrii* | Mojave Sage | 2′ X 2′ | MD | B/P |
| *Senna covesii* | Desert Senna | 1′ X 1′ | SD* | B/P |
| *Tetraneuris acaulis* | Angelita Daisy | 1′ X 2′ | | E |
| *Thymophylla acerosa* | Dyssodia | 0.5′ X 0.5′ | SD*/CD | B/P |
| *Thymophylla pentachaeta* | Dogweed | 0.5′ X 0.5′ | SD*/CD | B/H/P |
| *Zauschneria californica* subsp. *latifolia* | Hummingbird Trumpet | 2′ x 2′ | SD* | B/P |
| *Zinnia acerosa* | Desert Zinnia | 1′ X 1′ | SD*/CD | B/P |

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| TREES | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Acacia greggii* | Catclaw Acacia | 45’ X 20’ | SD*/SD | E/H/P |
| *Acca sellowiana* | Pineapple Guava | 15’ X 15’ | | E/H |
| *Bauhinia lunarioides* | Chihuahuan Orchid Tree | 10’ X 10’ | CD | H/P |
| *Brahea armata* | Mexican Blue Palm | 30’ X 10’ | SD | B/E/H |
| *Caesalpinia cacalaco* | Cascalote | 15’ X 15’ | | H/P |
| *Celtis reticulata* | Netleaf Hackberry | 30’ X 30’ | SD*/CD | B/H |
| *Cercis canadensis* var. *mexicana* | Mexican Redbud | 15’ X 15’ | CD | H/P |
| *Chilopsis linearis* | Desert Willow | 30’ X 30’ | SD*/CD | B/P |
| *Chitalpa* ‘Morning Cloud’ | Morning Cloud Chitalpa | 25’ X 25’ | | |
| *Condalia globosa* | Bitter Condalia | 15’ X 20’ | SD*/SD | B |
| *Cordia boissieri* | Texas Olive | 15’ X 15’ | CD | E/P/S |
| *Cupressus arizonica* var. *glabra* | Smooth Bark Cypress | 40’ X 20’ | SD* | B/E |
| *Dermatophyllum secundiflorum* | Texas Mountain Laurel | 15’ X 10’ | CD | E/H/P/T |
| *Ebenopsis ebano* | Texas Ebony | 30’ X 20’ | CD | E/H/P |
| *Eysenhardtia orthocarpa* | Kidneywood | 15’ X 10’ | SD*/CD | B/H/P |
| *Eysenhardtia texana* | Texas Kidneywood | 10’ X 8’ | CD | H/P |
| *Fraxinus greggii* | Littleleaf Ash | 15’ X 15’ | CD | E/H/P |
| *Havardia mexicana* | Mexican Ebony | 30’ X 20’ | SD | B/H/P |
| *Havardia pallens* | Tenaza | 30’ X 20’ | CD | H/P |
| *Leucaena retusa* | Golden Ball Lead Tree | 20’ X 15’ | CD | H/P |
| *Lysiloma watsonii* var. *thornberi* | Feather Tree | 20’ X 20’ | SD* | B/H/P/S |
| *Mariosousa heterophylla* | Palo Blanco | 15’ X 15’ | SD | B/P/S |
| *Myrospermum sousanum* | Arroyo Sweetwood | 20’ X 20’ | SD/CD | B |
| *Olneya tesota* | Desert Ironwood | 30’ X 25’ | SD* | B/E/H |
| *Parkinsonia florida* | Blue Palo Verde | 30’ X 30’ | SD* | B/H/P |
| *Parkinsonia microphylla* | Foothill Palo Verde | 20’ X 20’ | SD* | B/H/P |

KEY: B = Buffer Overlay Zone Use, E = Evergreen, G = Seed Grown Only, H = Habitat, M = Male Only, P = Pollinators, S = Semi-Hardy, T = Toxic

## TREES (CONTINUED)

| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
|---|---|---|---|---|
| *Parkinsonia praecox* | Palo Brea | 30′ X 25′ | SD | B/H/P/S |
| *Prosopis glandulosa* var. *torreyana* | Western Honey Mesquite | 30′ X 30′ | SD/CD | B |
| *Prosopis pubescens* | Screwbean Mesquite | 20′ X 20′ | SD*/CD | B/H/P |
| *Prosopis velutina* | Velvet Mesquite | 30′ X 30′ | SD* | H/P |
| *Quercus emoryi* | Emory Oak | 30′ X 20′ | SD*/CD | H |
| *Quercus fusiformis* | Texas Live Oak | 30′ X 30′ | | E/H |
| *Quercus muehlenbergii* | Chinquapin Oak | 30′ X 30′ | CD | H |
| *Quercus oblongifolia* | Mexican Blue Oak | 30′ X 30′ | SD/CD | E/H |
| *Sambucus nigra* subsp. *cerulea* | Mexican Elderberry | 30′ X 20′ | SD*/CD | B/S |
| *Sapindus saponaria* var. *drummondii* | Western Soapberry | 30′ X 30′ | SD*/CD | B/H/P |
| *Senegalia berlandieri* | Guajillo | 15′ X 15′ | CD | E/H/P |
| *Senegalia occidentalis* | Sonoran Cat Claw | 20′ X 15′ | | H |
| *Ungnadia speciosa* | Mexican Buckeye | 12′ X 12′ | CD | B/H/P |
| *Vachellia constricta* | Whitethorn Acacia | 10′ X 10′ | SD* | H/P |
| *Vachellia farnesiana* | Sweet Acacia | 20′ X 20′ | SD*/CD | B/H/P |

## VINES

| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
|---|---|---|---|---|
| *Antigonon leptopus* | Queen's Wreath | 30′ X 15′ | | P/S |
| *Callaeum macropterum* | Yellow Orchid Vine | 20′ X 15′ | SD | E |
| *Cissus trifoliata* | Desert Grape Ivy | 20′ X 20′ | SD | P/T |
| *Dolichandra unguis-cati* | Cat's Claw Vine | 30′ X 15′ | | |
| *Janusia gracilis* | Slender Janusia | 3 X 5′ | SD*/CD | B/H |
| *Lonicera arizonica* | Coral Honeysuckle | 10′ x 10′ | SD* | |
| *Mascagnia lilacina* | Purple Orchid Vine | 15′ X 15′ | CD | E |
| *Merremia aurea* | Yellow Morning Glory Vine | 10′ X 10′ | | |

KEY: B = Buffer Overlay Zone Use, E = Evergreen, G = Seed Grown Only, H = Habitat, M = Male Only, P = Pollinators, S = Semi-Hardy, T = Toxic

| **VINES** (CONTINUED) | | | | |
|---|---|---|---|---|
| BOTANICAL NAME | COMMON NAME | TYPICAL SIZE (H X W) | NATIVE REGION | NOTES |
| *Parthenocissus* spp. | Hacienda Creeper | 15′ X 15′ | | H |
| *Passiflora foetida* | Passion Flower | 20′ X 1′ | | H/P |
| *Vitis arizonica* | Canyon Grape | 20′ X 5′ | SD*/CD | B |

KEY: B = Buffer Overlay Zone Use, E = Evergreen, G = Seed Grown Only, H = Habitat, M = Male Only, P = Pollinators, S = Semi-Hardy, T = Toxic

# PROHIBITED PLANT LIST

Pima County prohibits the use of the following plant species due to invasive characteristics, noxious pollen or other quality that creates a nuisance in the landscape.

| BOTANICAL NAME | COMMON NAME |
|---|---|
| *Ailanthus altissima* | Tree of Heaven |
| *Alhagi pseudalhagi* | Camelthorn |
| *Arundo donax* | Giant Reed |
| *Brassica tournefortii* | Sahara Mustard |
| *Bromus rubens* | Red Brome |
| *Bromus tectorum* | Cheatgrass |
| *Caesalpinia gilliesii* | Yellow Bird of Paradise |
| *Centaurea melitensis* | Malta Starthistle |
| *Centaurea solstitalis* | Yellow Starthistle |
| *Cortaderia* spp. | Pampas Grass |
| *Cynodon dactylon* | Bermuda Grass (excluding sod hybrid) |
| *Digitaria* spp. | Crabgrass |
| *Elaeagnus angustifolia* | Russian Olive |
| *Eragrostis* spp. | Lovegrass (excluding E. intermedia, Plains Lovegrass) |
| *Melinis repens* | Natal Grass |
| *Mesembryanthemum* spp. | Iceplant |
| *Morus rubra* | Mulberry Tree |
| *Nerium oleander* | Oleander |
| *Olea europaea* | Olive Tree (excluding fruitless varieties, such as 'Wilsonii') |
| *Oncosiphon piluliferum* | Stinknet |
| *Parkinsonia aculeata* | Mexican Palo Verde |
| *Peganum harmala* | African Rue |
| *Pennisetum ciliare* | Buffelgrass |
| *Pennisetum setaceum* | Fountain Grass (including purple "sterile" variety) |
| *Prosopis chilensis* | Chilean Mesquite |
| *Salsola* spp. | Russian Thistle |
| *Searsia lancea* | African Sumac |
| *Senna artemisioides* | Feathery Senna |
| *Senna nemophila* | Desert Senna |
| *Senna phyllodinea* | Silvery Senna |
| *Schinus* spp. | Pepper Tree |
| *Schismus arabicus* | Arabian Grass |
| *Schismus barbatus* | Mediterranean Grass |
| *Sorghum halepense* | Johnson Grass |
| *Tamarix* spp. | Tamarisk |

# APPENDIX

## GENERAL MANUALS

- Green Stormwater Infrastructure and Low Impact Development Standard Details and Site Guidance, City of Tucson & Pima County Regional Flood Control District, Tucson, AZ, November 2022
- Low Impact Development and Green Infrastructure Guidance Manual, City of Tucson, Tucson AZ, March 2015
- Design Standards for Stormwater Detention and Retention, Pima County Regional Flood Control District, Tucson, AZ, November 2015

## MAINTENANCE

- Guidelines for the Maintenance of Regulated Riparian Habitat (RRH) for Commercial Property Owners and Homeowners' Associations, Pima County Regional Flood Control District, Tucson, AZ, January 2021
- Drainage Maintenance Guidelines for Homeowners' Associations, Pima County Regional Flood Control District, Tucson, AZ
- Detention Basin Inspection and Maintenance Checklist, Pima County Regional Flood Control District, Tucson, AZ

## INVASIVE / NON-NATIVE / NOXIOUS SPECIES

- Buffelgrass (Pennisetum ciliare) information
- Buffelgrass and Fountain Grass Identification Pocket Guide, 2017
- Grow Native! Don't Plant a Pest-Southeastern Arizona, Arizona Native Plant Society
- Wipe Out Weeds, Pima County Regional Flood Control District, Tucson, AZ
- Taking Action Against Mosquitoes, Pima County Regional Flood Control District, Tucson, AZ

## NATIVE SEED LIST

- Standard Specifications and Details for Public Improvements Section 805 Seeding, Pima Association of Governments