

DESERT LANDS CONSERVATION GUIDE



Adopted October 5, 2004

DESERT LANDS CONSERVATION GUIDE

The purpose of this guide is to provide design guidelines which promote greater design sensitivity to the unique Sonoran desert. These guidelines apply to property located within the Desert Lands Conservation Overlay District, and are intended to serve as a basis for discussion between City staff and the project designer during site plan and subdivision plat review.

The guidelines are organized by landform type, acknowledging that there are three primary landform types within the Desert Lands Conservation Overlay each having a unique character and set of design challenges.

Size and Description of Desert Lands Conservation Report Submittal Documents

All narrative information should be presented on 8-1/2" x 11" inch paper. All plans and mapped data for the same project should be drawn using the same standard engineering scale at a scale no greater than 100 feet to an inch, and producing an overall drawing not exceeding 30" x 42" in size.

Contents of Submittals

1. Identification and Descriptive Data, including:
 - a. Proposed name of the development;
 - b. Location by section, township and range, referenced by distance and bearing to a section corner or quarter-section corner;
 - c. Name, address, and phone number of the Developer;
 - d. Name, address, and phone number of the person preparing the plan/mapped data; and
 - e. Scale, north arrow, and date of preparation, including revision dates.
2. Project Narrative and Overview, including:
 - a. Size of project, in acres;
 - b. Existing land uses;
 - c. Proposed land uses, including total number of dwelling units, number of dwelling units by net density range, gross building area for non-residential uses, building coverage for non-residential uses, building heights, and required parking; and
 - d. Description of unique site characteristics.
3. Existing Conditions Data Report, including:
 - a. A vertical aerial photograph at the same scale as the native plant inventory, but in no case at a scale less detailed than 1 inch = 400 feet, with the site boundaries clearly marked;
 - b. Plant community identification, including Significant Vegetation Areas and Significant Vegetation Specimens, and their general condition;
 - c. Topography, at 2-foot contour intervals for slopes up to and including 10%, and 10-foot contour intervals for slopes greater than 10%, or larger intervals when slopes and terrain warrant as approved by the City Engineer;
 - d. Drainage, including delineation of the 100 year floodplain as shown on the Flood Insurance Rate Map published by the Federal Emergency Management Agency and floodway limits for drainage ways that serve areas of more than ¼ square miles or which generate an estimated flow rate of more than 500 CFS for the 100 year event;
 - e. Soils report including series, types and phases, as mapped by the U.S. Department of Agriculture, Natural Resources Conservation Services in the published soil survey for Maricopa County; an analysis of accompanying data published for each soil relating to its suitability for construction and septic systems; and identification of any problem soils that exhibit characteristics such as instability, sterility, and expansiveness;
 - f. Geologic formations on the proposed development parcel, other than conservation features, including sink holes and fault lines, based on available published information or upon the results of a geotechnical survey, when required by the City Engineer to ascertain geological conditions not clearly visible;
 - g. Cultural and historic feature inventory, as specified elsewhere in this Article. Detailed location maps of such sites should not be included in the site analysis, but should be available from the archaeologist or consultant for staff review as necessary;

- h. Wildlife/habitat inventory using procedures recommended by the Arizona Game and Fish Department;
- i. Dedicated or planned parks, open space, trails and access points; and existing disturbed areas due to previous burning, scarring, or grading.

Submittals for the Master Conservation Plan

1. Identification of Conservation Features, including:
 - a. Delineation of all Conservation Features;
 - b. Delineation of Natural Open Space areas such that as many Conservation Features are combined into a contiguous area, as possible;
 - c. Identification in general of access points to Natural Open Space areas within the project and immediately adjacent to the project boundaries;
 - d. Identification in general of connections between Natural Open Space areas and Primary and Secondary Washes, open space corridors and/or other regional open space areas;
 - e. Tabulation of the size of each Natural Open Space area, in acres and square feet, and a total of all Natural Open Space proposed for the project; and
 - f. Landform type analysis identifying the landform types existing on the property. The property owner shall prepare a zone map identifying the location and extent of the three landform types as defined in this Article. In areas with mixed landform types, the most predominant landform shall be used.
2. Identification of Native Plants to be preserved, including:
 - a. Delineation of plant types on an aerial photograph of a scale not less than 1"= 400 feet;
 - b. Annotated photographs of representative plant types, size and condition; and
 - c. Narrative stating whether the plant will remain in place, be moved to another location or be destroyed (Any plant with Protected Plant Status that is destroyed must have an explanation detailing why the plant cannot remain in place or be moved).
3. Identification of Conservation and Development Areas, including:
 - a. Conservation Features to be preserved;
 - b. Landform Types;
 - c. Natural Open Space areas;
 - d. Native plants to be preserved in place;
 - e. Naturalized (revegetated) Areas;
 - f. Development Areas, including:
 - i. Locations of Development Pads (areas of mass grading) and/or individual Disturbed Areas;
 - ii. Alignment of Streets, including site visibility triangles, and typical cross-sections;
 - iii. Alignment and classification of Trails, Trail connections, proposed signage and typical cross-sections, for Equestrian Trails, Primary Multi-Use Paths, Secondary Trails, and Bicycle Lanes;
 - iv. Location of storm water management facilities;
 - v. Location of sanitary sewer;
 - vi. Location of water service;
 - vii. Location of improved common areas (private and public); and
 - viii. Delineation of project phasing, if applicable.
4. Identification of Landscape Development Areas including locations of Landscape Character Zones.
 - A. GENERAL
 - a. Techniques such as clustering and concentrating development in small pockets are encouraged to help minimize the impact on the fragile desert environment.
 - b. Communities should be planned around an open space system that provides convenient pedestrian routes with community facilities and transit within reasonable walking distance.
 - c. Design communities with central open spaces and gathering areas for community activities and events.
 - d. New development should utilize colors and materials that blend into the surrounding landscape. Field colors should have a low light reflective value. Residential projects should

provide a color palette that includes several options to provide visual interest and variety. Color diversity should be encouraged and homogenous color schemes that contribute to monotonous appearance are discouraged.

- e. Integrate new residential development with community uses, including shops, work places, schools, parks and civic facilities.
- f. Pedestrian linkages and trails, through developed open space corridors, should be included to link new development with existing facilities.
- g. Planning and design for utility corridors should consider the rehabilitation and salvage of existing plant material to mitigate impacts.
- h. Replacement of indigenous plants is encouraged so that no net loss of habitat function or value occurs. Salvage of indigenous species is encouraged, but not required. Salvaged trees should be placed in buffer areas.
- i. All utilities should be placed underground except when cost prohibitive.

B. GRADING AND DRAINAGE

1. Desert Floor Landform

- a. Master grading plans should be designed to avoid sensitive natural features and vegetation. Total mass grading should be minimized across large sensitive and visually exposed areas of this zone.
- b. Innovative grading solutions are encouraged to minimize retaining walls and steep banks. Cut and fill solutions should balance earth moving. The shape of new grades should be smooth, especially at development edges that need to blend into the natural topography of the gently rolling Desert Floor. Special care should be given to protect and enhance the sensitive desert vegetation.
- c. Developers are encouraged to propose split-level products, as a technique to reduce grading impacts when the gradients have a gently rolling topography.

2. Bajada Landform

Same as Desert Floor, except:

- a. Total mass grading is discouraged across large sensitive and visually exposed areas of the Bajada lands. Site grading may be appropriate in very small lot developments, when the site is not visually exposed, and strong vegetation buffers are integrated with the grading plan to blend into the existing landform.
- b. Special care should be given to protect and enhance the sensitive desert vegetation, especially for site gradients above 5%.
- c. Grading should be integrated with the natural slopes in this area. Design of paths and walks must conform to local and federal accessibility requirements. Gradients above 5% provide unique challenges in this Landform type.

3. Hillside Landform

Same as Bajada, except:

- a. Gradients above 10% in this area are critical. All development should carefully consider soft gentle grades that transition man-made features into the adjacent natural landscape at development edges. Slopes at the edge of all development should be designed with soft flowing lines and side slopes must not exceed 1:5. Appropriate Native Sonoran Zone plant material should be used to soften slope edges adjacent to existing natural areas.

C. RIVERS AND WASHES

1. Desert Floor Landform

- a. Disturbance to larger ephemeral washes should be limited to that required for road and utility crossings. Disturbed areas should be restored using indigenous vegetation so that no net loss of habitat value or function occurs, and should be monitored to ensure success.
- b. Wash conservation corridors should be separated from residential, institutional, commercial and industrial areas by common areas, natural open space, and streetscape with

- predominantly indigenous vegetation.
- c. Road and utility crossings should be perpendicular or nearly perpendicular to washes.
 - d. Roads crossing large washes should be bridged, rather than using culverts.
 - e. Wash corridors should be wide enough to accommodate natural braiding and changes in active channel location. Larger washes should not be artificially channelized. Banks of smaller washes should be stabilized only if no other option exists, by contouring to no more than 3:1 native fill side slopes that are revegetated with indigenous plants at natural species composition and densities.
 - f. Recreational use, such as trails, should be placed in upland buffers adjacent to wash zones.
2. Bajada Landform
Same as Desert Floor.
3. Hillside Landform
Same as Desert Floor, except:
- a. Washes should be crossed only with low flow crossings to facilitate wildlife movement.

D. WILDLIFE HABITAT

1. Desert Floor Landform
- a. Wash conservation corridors should be separated from residential, institutional, commercial, and industrial areas by common areas, natural open space, and streetscape with predominantly indigenous vegetation.
 - b. Residential lots and subdivisions should be fenced or walled to minimize depredation of wildlife by domestic animals and to discourage the movement of larger vertebrate wildlife, such as coyotes and javelina, into these areas.
 - c. Linear utility lines should be placed parallel to but just outside the preserved wash and associated buffer to provide a more gradual transition to developed areas and to extend the functional width of the corridor.
 - d. Utility lines should be buried if possible and revegetated using Indigenous plants so that there is no net loss of habitat function or value.
 - e. Roads crossing large washes should be bridged and the bridge width should be minimized to facilitate movement of wildlife.
 - f. Cluster development should be encouraged to facilitate the provision of natural open space areas at least 2.5 acres in size, where property size permits, linked by natural corridors. Distances between natural open space areas should not exceed 1000 feet, if possible. This will provide habitat and lateral movement opportunities primarily for avian wildlife and smaller reptiles, but not for other not-violent vertebrate wildlife.

2. Bajada Landform
Same as Desert Floor, except:
 - a. Building envelopes and cluster development are encouraged.
3. Hillside Landform
Same as Desert Floor, except:
 - a. Building envelopes and cluster development are encouraged.
 - b. Walls or fences between lots are discouraged because they block wildlife movement.
 - c. Washes should be crossed only with low flow crossings to facilitate wildlife movement.

E. SCENIC RESOURCES

1. Desert Floor Landform
 - a. Low profile development is encouraged with a blend of 1 and 2 story structures.
 - b. One-story buildings should be located adjacent to open space.
 - c. Use of desert pavement or native seeding is encouraged to minimize the extent of decomposed granite.
 - d. Use of alternative building materials such as rammed earth, adobe, or straw bale/stucco that match landforms and color of the landscape is encouraged.
 - e. The immediate foreground should be kept intact through the use of native or enhanced desert vegetation for screening.
 - f. Due to their scarcity, maintaining existing healthy trees and cacti in place is encouraged. If not feasible, they should be replaced according to the original density and species distribution.
2. Bajada Landform
Guidelines same as Desert Floor, except:
 - a. Flat or low sloping roof lines are encouraged with pitches consistent with the degree of slope of the surrounding area.
 - b. The integrity of the middle ground should be maintained by keeping intrusions small in scale and close in color to the natural desert palette.
 - c. The integrity of low hills and other geologic features should be kept intact with adequate buffer from development and the use of rock staining on exposed cuts to mimic a natural weathering color.
3. Hillside Landform
Same as Bajada, except:
 - a. Existing rock outcrops and vegetation should be used to screen development where feasible.
 - b. Stepped foundations are encouraged to accommodate existing slopes rather than completely padding out the development area.

F. CULTURAL RESOURCES

1. Desert Floor Landform
 - a. One or two representative archaeological sites should be developed with significant interpretive facilities and should be accessible to the general public.
 - b. Vegetation surrounding interpretive sites should be maintained in natural condition to retain the original site context.
 - c. Colors and textures of interpretive facilities and structures should adhere to those occurring naturally.
2. Bajada Landform
Same as Desert Floor, except:
 - a. Colors and textures of interpretive facilities should adhere strictly to those occurring naturally.

3. Hillside Landform

Same as Bajada, except:

- a. Sites should be protected and preserved to the extent possible.

G. RECREATION AND PUBLIC FACILITIES

1. Desert Floor Landform

- a. Recreational development in this area should focus on large-scale well-lighted active recreational facilities for community use and encourage connectivity to secured open space and conservation areas. Recreational venues within this area that are in close proximity to urban areas, existing land uses and existing resources should be developed to enhance open space connections, linkages and buffers where appropriate. The existing open space character that should be retained includes views, plant densities, wildlife corridors, and cultural resources.
- b. The planning of new recreational facilities within this zone should be directed towards large scale active playing fields and other large scale high volume uses. Multi use facilities should be encouraged. Where possible other municipal facilities should be developed in conjunction with the recreational facility. Fire stations, schools, youth centers, adult centers, and community centers are some examples of the multi use possibilities that should be encouraged.
- c. Size of facilities should be minimized to reduce impacts on existing vegetation. Grading should be minimized to include only what is necessary to incorporate the active recreational uses. Where possible, encourage progressive grading techniques that can minimize maintenance expenses. Cut and fill balances should be sought.
- d. All facilities should be lighted for evening use and to the required levels of league play. Any facility that incorporates turf should be encouraged to use non-potable water.
- e. Where feasible, onsite standard parking requirements should be modified to encourage pedestrian access to the park through a system of trails and sidewalks.

2. Bajada Landform

- a. Recreational development in this area should focus on small-scale well-lighted active recreational facilities for community use and encourage connectivity to secured open space and conservation areas. Recreational venues within this area should be developed to enhance open space connections, linkages and buffers where appropriate. The existing open space character that should be retained includes views, plant densities, wildlife corridors, and cultural resources.
- b. The planning of new recreational facilities within this zone should be directed towards smaller scale active and passive recreational uses that are appropriate in the more sensitive and hilly terrain. Where possible other smaller scale municipal facilities should be developed in conjunction with the recreational facility. Fire stations, youth centers and adult centers are some examples of the multi use possibilities that should be encouraged.
- c. Grading should be minimized to include only what is necessary to incorporate the active recreational uses. Where possible encourage progressive grading techniques that can minimize maintenance expenses. Cut and fill balances should be sought.
- d. Links to any existing or proposed trail systems should be considered and incorporated.
- e. All facilities should be lighted for evening use. Lighting should be sensitive to Night Sky Ordinances. Facilities should not be lighted to the required levels of League play.

3. Hillside Landform

- a. Recreational development in this area should focus on very small-scale and passive recreational uses that are appropriate in the sensitive foothills areas.
- b. Any proposed recreational facility should attempt to preserve as much of the existing vegetation and habitat as possible.
- c. Grading should be minimized to facilitate the recreational use and encourage progressive techniques such as water harvesting.
- d. Links to any existing or proposed trail system should be considered and incorporated. Where possible the master planning should establish trail systems for passive and active uses.
- e. All lighting must conform to applicable Night Sky Ordinances.
- f. Turf areas should not be incorporated.
- g. Recreation in this area should be considered resource based only and should be open from dawn until dusk. Only very limited areas should be lighted with very low lighting levels.

H. LANDSCAPE CHARACTER

Landscape character zone plant palettes referred to below are found at the end of this section.

1. Desert Floor Landform

- a. The following landscape development areas, whose typical location is depicted on the graphic below, should use the landscape character zone plant palettes as indicated below:



- i. Oasis Areas (enclosed courtyards and similar semi-private areas): Use of Native Sonoran, Sonoran Character, and/or Arid Zone palettes are encouraged.
 - ii. In Transitional Areas (open backyards, commercial and public areas, streetscapes, common areas) plants from the Exotic and Arid Zone palettes should be used in no more than 50% of the landscaped areas, should be placed adjacent to buildings, and should not extend to lot boundaries. A buffer of Native Sonoran and/or Sonoran Character Zone plants should separate Exotic and Arid Zone plantings from lot boundaries. Plantings in common areas should be limited to no more than 50% turf, which must be separated from streetscapes and Buffer Areas with Native Sonoran, Sonoran Character, and Arid Zone plants. Streetscapes should use only Native Sonoran, Sonoran Character, and Arid Zone plants.
 - iii. In Buffer Areas (open areas adjacent to preserved wash corridors and other natural open spaces), only Native Sonoran Zone plants should be used, with a mix of shrubs and trees placed to visually and functionally extend the width of the wash corridor.
- b. Permanent irrigation should be allowed only for Exotic Zone plants. Only temporary

irrigation should be allowed for Native Sonoran Zone shrubs. Permanent irrigation for Sonoran Character and Arid Zone trees and other shrubs should be allowed, with the irrigation regime minimized.

- c. Trees that must be removed for road or utility crossings should be salvaged and replaced nearby in the same wash corridor if possible. Removal of unsalvageable trees should be compensated for by replacement at a comparable plant density. Moved or replaced plants should be irrigated only during the establishment period (5 years maximum) and should provide at least a comparable plant density after 5 years.

2. Bajada Landform

Guidelines same as for Desert Floor, except:

- a. In Oasis Areas, Exotic and Arid Zone plants should cover a total area no greater than the combined footprint of all structures on the lot or parcel, and should be located immediately adjacent to the structures. Exotic and/or Arid Zone plants should be separated from lot boundaries by Native Sonoran and Sonoran Character plantings which should comprise the remainder of the lot.

3. Hillside Landform

Guidelines same as for Desert Floor, except:

- a. In Oasis Areas, Exotic and Arid Zone plants should cover a total area no greater than ¼ of the combined footprint of all structures on the lot or parcel, and should be located immediately adjacent to the structures. Exotic and/or Arid Zone plants should be separated from lot boundaries by Native Sonoran plantings which should comprise the remainder of the lot.
- b. In Transitional Areas, only Native Sonoran Zone plants should be allowed
- c. In Buffer Areas, only Native Sonoran Zone plants should be used.

APPROVED PLANT LISTS

NATIVE SONORAN ZONE

In disturbed areas requiring restoration and/or revegetation and/or in areas where it may be necessary to enhance the existing native vegetation, it is essential to use plant materials native to the Sonoran Desert in order to maintain the vegetative integrity of these areas. The following list of native plants represents plants that are typically found in the desert of the northern Phoenix metropolitan area. Examples of areas where this plant list should be used include wash corridors and other natural open space areas and rights-of-way for major streets.

NOTE: It is believed that this list is a comprehensive listing of all Sonoran Desert plants that are native to the area. For that reason, it is anticipated that this list will not change, except by direct evidence of additional on-site native plants submitted to the City for review and determination.

NATIVE SONORAN ZONE	
TREES	
Cercidium floridum Cercidium microphyllum Chilopsis linearis Olneya tesota Prosopis velutina	Blue Palo Verde Foothill Palo Verde Desert Willow Ironwood Mesquite
SHRUBS	
Acacia greggii	Cat Claw Acacia

<p>Ambrosia ambrosoides Ambrosia deltoidea Asclepias subulata Atriplex canescens Baccharis sarothroides Calliandra eriophylla Canotia holacantha Celtis pallida Encelia farinosa Ephedra aspera Ephedra trifurca Ericameria laricifolia Eriogonum fasciculatum Fouquieria splendens Hyptis emoryi Justicia californica Krameria grayi Larrea tridentata Lycium berlandieri Lycium fermontii Psilotrophe cooperii Simmondsia chinensis Viguiera deltoidea Zizyphus obtusifolia var. Canescens</p>	<p>Canyon Ragweed Triangle Leaf Bursage Desert Milkweed Fourwing Saltbush Desert Broom (male cultivars) Fairy Duster Crucifixion Thorn Desert Hackberry Brittlebush</p> <p>Mormon Tea Turpentine Bush Flatop Buckwheat Ocotillo Desert Lavender Chuparosa White Ratany Creosote Bush Wolfberry Tomatillo Paper Flower Jojoba Golden Eye Greythorn</p>
CACTI/SUCCULENTS/ACCENTS	
<p>Carnegiea gigantean Echinocereus fasciculatus Ferocactus acanthodes Ferocactus wislizenii Mammillaria microcarpa Opuntia acanthocarpa Opuntia bigelovii Opuntia engelmannii Opuntia fulgida Opuntia leptocaulis</p>	<p>Saguaro Hedgehog Cactus Compass Barrel Fishhook Barrel Fishhook Pincushion Buckhorn Cholla Teddy Bear Cholla Engelmann's Prickly Pear Chain Fruit Cholla Desert Christmas Cholla</p>
ANNUAL WILDFLOWERS	
<p>Argemone pleiacantha Eschscholzia mexicana Kallstroemia grandiflora Lupinus arizonicus Lupinus sparsiflorus Orthocarpus purpuracens Pectis papposa Plantago insularis Salvia columbariae</p>	<p>Prickly Poppy Mexican Gold Poppy Arizona Poppy Arizona Lupine Desert Lupine Owl's Clover Chinch Weed Indian Wheat Ghia</p>
PERNNIAL WILDFLOWERS	
<p>Argemone platyceras Baileya multiradiata Dichelostemma pulchellum Dyssodia pentachaeta</p>	<p>Prickly Poppy Desert Marigold Bluedicks Dyssodia</p>

Erigeron divergens Penstemon parryii Senna covesii (Cassia)	Spreading Fleabane Parry's Penstemon Desert Senna
GRASSES	
Aristida purpurea Hilaria rigida Trichachne californica	Purple Three-awn Big Galeta Cotton-top

SONORAN CHARACTER ZONE

There are public areas where it may not be as critical that plant materials used are native to the Sonoran Desert but it is important that plant materials represent plants that are generally native to the southwest deserts or have the appearance of being native to those deserts. The following plant list is an expansion of the above list and includes Sonoran Desert natives as well as non-natives that are representative of southwest deserts. This plant list is to be used for public areas.

NOTE: Although this list is considered comprehensive, it is not exhaustive. In addition, it is anticipated that new plant materials may be added to the list as new plants are introduced to the market. Individuals or organizations are encouraged to suggest additional plant materials for review and evaluation by City staff for possible inclusion on this list.

SONORAN CHARACTER ZONE	
TREES – in addition to those identified above	
Acacia berlandieri Acacia farnesiana Acacia occidentalis Acacia schaffneri Acacia stenophylla Acacia willardiana Bauhinia congesta Caesalpinia cacalaco Cercidium hybrid Cercidium praecox Leucaena retusa Lysiloma microphylla var. Thornberi Pithecellobium flexicaule Pithecellobium mexicanum Pithecellobium pallens Prosopis glandulosa Prosopis pubescens Prosopis torreyana Sophora secundiflora Ungnadia speciosa	Guajillo Acacia Sweet Acacia Sonoran Catclaw Acacia Twisted Acacia Shoestring Acacia Palo Blanco Anacacho Orchid Tree Cascalote Desert Museum Paloverde Palo Brea Golden Ball Lead Tree Desert Fern Texas Ebony Palo Chino/Mexican Ebony Tenaza Honey Mesquite Screwbean Mesquite Texas Mesquite Mescal Bean Mexican Buckeye

SHRUBS – in addition to those identified above

Acacia constricta	White Thorn Acacia
Aloysia gratissima	Bee Bush
Aloysia lyciodes	Bee Bush
Aloysia macrostachya	Sweet-stem
Aniscanthus andersonii	Anderson's Honeysuckle
Aniscanthus quadrifidus	Flame Honeysuckle
Aniscanthus thurberi	Desert Honeysuckle
Artemisia ludoviciana	White Sage
Atriplex hymenelytra	Desert Holly
Atriplex nummularia	Old Man Saltbush
Berberis haematocarpa	Red Barberry
Buddleia marrubifolia	Wooly Butterfly Bush
Caesalpinia gilliesii	Desert Bird of paradise
Calliandra californica	Baja Red Fairy Duster
Calliandra peninsularis	Baja Red Fairy Duster
Canotia holacantha	Crucifixion Thorn
Cassia biflora	Twin Flower Cassia
Cassia wislizenii	Shrubby Cassia
Cordia boissieri	Anacahuita
Cordia parvifolia	Little Leaf Cordia
Dalea bicolor var. Argyraea	Silver Dalea
Dalea frutescens	Black Dalea
Dalea pulchra	Indigo Bush
Dalea versicolor var. Sessilis	Wislizenus Dalea
Dodonaea viscosa	Hopbush
Erythrina flabeliiformis	Southwest Coralbean
Euphorbia antisyphilitica	Candelilla
Gutierrezia microcephala	Snakeweed
Justicia candicans	Red Justicia
Justicia sonorae	Palm Canyon Justicia
Justicia spicigera	Mexican Honeysuckle
Krameria parvifolia	Ratany
Leucophyllum candidum	Silver Sage
Leucophyllum frutescens	Texas Sage
Leucophyllum laevigatum	Chihuahuan Sage
Leucophyllum langmaniae	Sierra Madre Sage
Leucophyllum pruinatum	Fragrant Sage
Leucophyllum revolutum	
Leucophyllum zygophyllum	Blue Ranger
Lotus rigidus	Desert Rock Pea
Mimosa biuncifera	Wait-a-minute Bush
Mimosa dysocarpa	Velvet Pod Mimosa
Rhus microphylla	Desert Sumac
Rhus ovata	Sugarbush
Rhus trilobata	Skunkbush
Ruellia brittoniana	Britton's Ruellia
Ruellia californica	Ruellia
Ruellia peninsularis	Ruellia
Salvia chamaedryoides	Blue Sage
Salvia clevelandii	Chapparal Sage
Salvia greggii	Autumn Sage

Salvia leucophylla Salvia dorrii Tecoma stans Trixis californica Ungradia speciosa Vauguelinia corymbosa Vauguelinia californica	Mexican Bush Sage Desert Sage Yellowbells Trixis Mexican Buckeye Narrow-leaf Rosewood Arizona Rosewood
GROUNDCOVERS	
Atriplex semibaccata Baccharis cv. 'Centennial' Dalea greggii Oenothera berlandieri Oenothera caespitosa Oenothera stubbei Verbena bipinnatifida Verbena goodingii Verbena tenera	Saltbush Centennial Baccharis Indigo Bush Mexican Evening Primrose Trailing Evening Primrose Saltillo Primrose Verbena Gooding's Verbena Moss Verbena
CACTI/SUCCULENTS– in addition to those identified above	
This is a sample list of cacti and succulents that may be appropriate for the area. Other may be appropriate based upon similarity of height, context, texture, and color as well as suitability to the natural environment.	
<i>Agave spp. – sample listing:</i> Agave colorata Agave parryi Agave victorae-reginae Agave vilmoriniana Agave murpheyi <i>Aloe spp. – sample listing:</i> Aloe barbadensis Aloe ferox Aloe saponaria Aloe marlothii Aloe striata <i>Cactaceae – sample listing:</i> Echinocactus grusonii Lophocereus schottii Opuntia basilaris Opuntia violacea Pachycereus marginatus Stenocereus thurberi Dasylirion acrotriche Dasylirion wheeleri Hesperaloe funifera Hesperaloe parviflora Nolina mataeensis Nolina microcarpa Yucca brevifolia Yucca rigida Yucca rostrata	Mescal Ceniza Parry's Agave Royal Agave Octopus Agave Murphy's Agave Medicinal Aloe Tree Aloe Tiger Aloe Tree Aloe Coral Aloe Golden Barrel Senita Beavertail Prickly Pear Purple Prickly Pear Mexican Organ Pipe Arizona Organ Pipe Green Desert Spoon Sotol, Desert Spoon Red Hesperaloe Tree Bear Grass Bear Grass Joshua Tree Blue Yucca Beaked Yucca
ANNUAL WILDFLOWERS – in addition to those identified above	
Gaillardia pulchella	Firewheel

Layia platyglossa Lesquerella gordonii Phacelia campanularia	Tidy Tips Yellow Blanket California Bluebell
PERENNIAL WILDFLOWERS – in addition to those identified above	
Allionia incarnata Delphinium amabile Melampodium leucanthum Penstemon baccharifolius Penstemon barbatus Penstemon eatonii Penstemon palmeri Penstemon spectabilis Penstemon superbus Ratibida columnaris Sphaeralcea ambigua Tagetes lemmonii Zinnia acerosa Zinna grandiflora	Trailing Windmills Larkspur Blackfoot Daisy Rock Penstemon Scarlet Penstemon Firecracker Penstemon Palmer’s Penstemon Royal Penstemon Superb Penstemon Mexican Hat, Coneflower Globe Mallow Mount Lemmon Marigold Desert Zinnia Rocky Mountain Zinnia
GRASSES – in addition to those identified above	
Muhlenbergia dumosa Muhlenbergia porteri Muhlenbergia rigens	Giant Muhly Bush Muhly Deer Grass
VINES	
Antigonon leptopus Callaeum macroptera Clematis drummondii Maurandya antirrhiniflora Merremia aurea	Coral Vine Yellow Orchid Vine Virgin’s Bower Snapdragon Vine Yellow Morning Glory Vine/Yuca

ARID CHARACTER ZONE

There are areas where it may not be as critical that plant materials used are native to the Sonoran Desert or representative of the American southwest deserts, but it is important that plant materials are generally compatible with the look of an arid landscape. The following plant list is a broader representation of drought tolerant plants and includes non-natives that are considered appropriate for the area. This plant list is to be used primarily for residential development in private yards.

NOTE Although this list is considered comprehensive, it is not exhaustive. In addition, it is anticipated that new plant materials may be added to the list as new plants are introduced to the market. Individuals or organizations are encouraged to suggest additional plant materials for review and evaluation by City staff for possible inclusion on this list.

ARID CHARACTER ZONE	
TREES – in addition to those identified above	
Acacia aneura Acacia craspedocarpa Acacia saligna Acacia salicina Eucalyptus formanii Eucalyptus spathulata Eucalyptus torquata Geoffroea decorticans Pittosporum phillyraeoides Prosopis alba Prosopis chilensis	Mulga Leather leaf Acacia Blue Leaf Wattle Willow Leaf Acacia Formann’s Eucalyptus Narrow-leaf Gimlet Coral Gum Chilean Palo Verde Willow Pittosporum Argentine Mesquite Chilean Mesquite
SHRUBS – in addition to those identified above	
Caesalpinia mexicana Caesalpinia pulcherrima Cassia artemisioides Cassia nemophila Cassia phyllodinea Eremophila glabra Euphorbia rigida Salvia leucantha	Mexican Bird of Paradise Red Bird of Paradise Feathery Cassia Desert Cassia Silver-leaf Cassia Emu Bush Gopher Plant Mexican Bush Sage
GROUNDCOVERS – in addition to those identified above, for use in private yards only	
Cephalophyllum cv. ‘Red Spike’ Drosanthemum speciosum Gazania rigens Verbena peruviana Verbena rigida	Red Spike Ice Plant Ice Plant Trailing Gazania Peruvian Verbena Sandpaper Verbena
CACTI/SUCCULENTS – In addition to those identified above, for use in private yards only	
Agave americana Cereus hildmannianus Lophocereus schottii Trichocereus candicans Yucca aloifolia Yucca baccata Yucca elata	Century Plant Hildmann’s Cereus Senita Argentine Trichocereus Spanish Bayonet Banana Yucca Soaptree Yucca
ANNUAL WILDFLOWERS – same as identified above	
PERENNIAL WILDFLOWERS – same as identified above	
GRASSES – same as identified above	
VINES – in addition to those identified above, for use in private yards only	
Podranea ricasoliana Bougainvillea sp.	Pink Trumpet Vine Bougainvillea

Exotic Zones

Enclosed courtyard-like spaces may contain plants not included on any of these lists so long as: 1) they are known to grow in the Phoenix area, 2) plants are not visible from outside the property when viewed from the same or lower elevation. However, these plants should be minimized as they are most often high water users and may also produce high amounts of pollen.

Prohibited/Invasive Plants

Certain plants that do well in this region present a distinctly non-desert environment and/or provide potential hazards to the native vegetation, wildlife and landscape due to their invasive nature. The following plants exhibit these characteristics.

PROHIBITED PLANT SPECIES LIST	
TREES	
Brachychiton populneus	Bottle Tree
Eucalyptus sp. (except those specifically identified in Arid Character Zone – see Desert Lands Conservation Guide)	Eucalyptus
Olea sp.	Olive Tree
Parkinsonia aculeata	Jerusalem Thorn/Mexican Palo Verde
Pinus sp.	All species of Pine
Prosopis chilensis (prohibited in parking areas only)	Chilean Mesquite
Rhus lancea	African Sumac
Washingtonia sp.	Fan Palm
SHRUBS	
Oleander sp. (except petite varieties)	Oleander
Thevetia peruviana	Yellow Oleander
GROUNDCOVERS, ANNUALS, PERENNIALS, VINES, ETC.	
Cenchrus ciliaris or Pennisetum cileare	Buffel Grass
Cynodon dactylon (except in private backyards, enclosed courtyards, and public use areas buffered from Native Sonoran Zones by Sonoran Character Zones - see Desert Lands Conservation Guide)	Common Bermuda Grass
Eragrostis lehmanniana	Lehmann’s Lovegrass
Gutierrezia sarothrae	Snakeweed
Hordeum jubatum	Foxtail Barley
Pennisetum sp.	Fountain Grass