CDD-DESIGN STANDARDS AND POLICIES

Salt River Pima-Maricopa Indian Community

Community Development Department / Planning Services

10.26.2020

TABLE OF CONTENTS

INTRODUCTION

PURPOSE

Inspire creative design excellence and successful quality developments that:

Incorporate cultural and aesthetic values relevant to the contemporary Pima and Maricopa Community and/or the traditional Onk Akimel O'odham and Xalychidom Piipaash cultures,

Respond to the Sonoran desert environment in a sustainable and environmentally sensitive manner and make efficient use of land, infrastructure and resources,

Create an attractive appearance and an environment that is inviting, uplifting to use, visually interesting and comfortable to be in at a human scale, and

Take into consideration the character and context of the site and location, capitalizing on the positive aspects and inner relationships both on and off site while minimizing negative impacts.

The guidelines:

- Describe the Community's expectations of development.
- Provide guidance and resources helpful in responding to the Community's culture, values, vision and desired character.
- Illustrate the intent of the zoning ordinance regulations and development standards.
- Establish minimum principles for design quality and help to ensure their consistent application.
- Ensure that development responds sustainably to the desert environment and makes efficient use of land and resources.
- Protect the investment in the Community through consistently high quality development.

APPLICABILITY

The guidelines apply to all development within the SRP-MIC Community.

Where conflicts exist between the guidelines and zoning ordinance standards, building codes, legal requirements or standards specifically approved for an individual development, those standards take precedence over these guidelines.

The guidelines strive for holistic designs where the various site elements work together each contributing towards the key design concepts of **CONTEXT, SUSTAINABILITY, and CULTURE**.

USE

The SRP-MIC staff and the Design Review Committee (DRC) reference design standards and policies when reviewing the relationship of proposed developments to the site and surrounding area, environmental sustainability and refection of the historic and contemporary culture of the Community.

Applicants are expected to incorporate the applicable concepts into the design of proposed projects. This will facilitate a more efficient review and approval process.

Photos and sketches in this section of the design guidelines and standards manual illustrate design concepts -- they are not intended to be prescriptive. The design solution should apply the applicable concepts in a manner best suited to the particular situation.

The design team members (including the developer, architect, engineer, hydrologist, landscape architect, contractor, planner, and others) are encouraged to become generally familiar with the design guidelines and standards of the other disciplines as well as their own to help them identify creative ways their designs can be well integrated with and contribute toward a contextual, sustainable and cultural design response.

CONFORMANCE

- Construction documents submitted to the SRPMIC Engineering and Construction Services (ECS) Compliance Division are required to conform to plans approved by the Design Review Committee (DRC) and incorporate any stipulations.
- Improvements are required to be maintained in conformance with approved plans.
- Any modifications to plans or improvements or the removal of improvements require prior approval.
- Designs are required to meet the standards in the zoning ordinance, other applicable codes and legal requirements as well as generally conform to the goals and polices of the General Plan.

SRPMIC GENERAL PLAN GOALS

The Community's General Plan goals provide the frame work for the Zoning Ordinance and the Design Guidelines. Development is measured by how well it fits into this picture. The highlighted goals particularly relate to the design aspects of development.

LAND USE ELEMENT

Goal 1.1 To improve community planning capabilities and capacity within Community government.

Goal 1.2 To identify land suitable for residential development to accommodate the housing needs of Community members.

Goal 1.3 To promote the development of People's Village as a Community-oriented focal point of activity for Community members.

Goal 1.4 To protect environmentally sensitive areas in the Community.

Goal 1.5 To protect culturally sensitive areas in the Community.

Goal 1.6 To avoid or mitigate incompatibility between land uses in the Community.

Goal 1.7 To ensure that the built environment is aesthetically pleasing and compatible with the natural surroundings and Pima-Maricopa cultural values.

Goal 1.8 To encourage human-scale design elements in industrial and large-scale commercial developments.

Goal 1.9 To achieve environmental stewardship in the design and construction of all public and private projects.

TRANSPORTATION/CIRCULATION ELEMENT

Goal 2.1 To maximize roadway safety and mobility for Community residents while enhancing the Community's identity and providing access to the commercial areas.

Goal 2.2 To increase transit options and improve service for Community members and visitors.

Goal 2.3 To ensure the development of safe facilities to accommodate non-motorized transportation.

HOUSING ELEMENT

Goal 3.1 To promote new housing opportunities for Community members.

Goal 3.2 To rehabilitate and/or preserve the Community's existing housing stock.

NATURAL RESOURCES ELEMENT

Goal 4.1 To balance land uses and recreation activities with the continued integrity of ecological processes.

Goal 4.2 To support the continued viability of sand and gravel operations in appropriate locations within the Community.

Goal 4.3 To protect the Community's water resources.

Goal 4.4 To provide sustainable range management.

Goal 4.5 To protect and preserve the Community's wildlife habitat areas.

Goal 4.6 To reduce solid waste to maximize use of existing solid waste facilities in the Community.

Goal 4.7 To protect air quality through control of industrial emissions, improved land use management, energy conservation, and transportation planning.

PRESERVATION ELEMENT

Goal 5.1 To balance land development with protection of historic properties and archaeological sites.

Goal 5.2 To preserve unique cultural areas for continued and future use by cultural and traditional practitioners.

COMMERCIAL DEVELOPMENT ELEMENT

Goal 6.1 To promote sustainable commercial development that provides tax revenues to the Community Government, lease income to landowners, and employment opportunities and goods and services to Community Members.

Goal 6.2 To promote human-scale features in commercial and mixed use development to promote pedestrian activity and comfort.

Goal 6.3 To maintain open space and visual qualities in the Corridor.

Goal 6.4 To ensure that new developments are compatible with surrounding uses and the natural, physical, and environmental character of the area.

Goal 6.5 To preserve identified unique natural resources in the area.

Goal 6.6 Promote disbursement of educational information throughout the Community to expand the knowledge of the surrounding environment and the Community's cultural values.

Goal 6.7 To employ development technology utilizing renewable natural resources.

Goal 6.8 To develop a hierarchy of transportation routes to ensure a community promoting a safe, energy efficient and cost effective system through the provision of alternative methods of transportation.

Goal 6.9 To provide a recreational system integrating natural open space, washes, and unique topographic features compatible with protection of these natural resources.

Goal 6.10 To protect view shed corridors of Red Mountain from the Pima Freeway and throughout the community.

AGRICULTURAL DEVELOPMENT ELEMENT

Goal 7.1 To maintain and expand the Community's agricultural base.

Goal 7.2 To transition to sustainable agricultural practices throughout the Community agricultural areas.

Goal 7.3 Create revenues through agricultural diversification.

INFRASTRUCTURE DEVELOPMENT ELEMENT

Goal 8.1 To properly manage water, wastewater, and reclaimed water within the Community.

Goal 8.2 To capture and convey stormwater drainage in a safe and aesthetic manner.

Goal 8.3 To ensure that non-residential development in the Pima Corridor area contributes its fair share to the development of infrastructure necessary to serve the development.

COMMUNITY FACILITIES ELEMENT

Goal 9.1 To provide adequate parks and recreation facilities for Community residents.

Goal 9.2 To ensure that Community members have access to high quality health care facilities and services.

Goal 9.3 To ensure that Community government facilities and services keep pace with demand.

Goal 9.4 Improve telecommunications and Internet communications systems.

Goal 9.5 To improve the energy resources of the Community.

Goal 9.6 To support the continued expansion and improvement of educational opportunities within the Community.

ECONOMIC DEVELOPMENT ELEMENT

Goal 10.1 To balance economic development in the Community with the cultural, economic, and environmental well-being of the Community.

Goal 10.2 To encourage sustainable economic development.

Goal 10.3 To encourage the development of diverse economic opportunities within the Community.

CULTURAL RESPONSE

Aspects of the rich SRP-MIC history, culture and lands in the overall design of a development is required by the Zoning Ordinance (Article 6.6) and implements the General Plan goal "to ensure that the built environment is aesthetically pleasing and compatible with its natural surroundings and Pima and Maricopa cultural values." Culture is defined as the learned beliefs, values, rules, norms, symbols and traditions that are common to a group of people. The intent of the cultural response element is to create a sense of place for Community, making it unique from neighboring cities.

There are many opportunities to creatively incorporate cultural aspects into the design of the projects site layout, architecture, landscape, hardscape, open space, lighting, signage, furnishings, and public art. Where and how cultural aspects are integrated will vary from project to project.

This section outlines the historical architectural styles of the Pima and Maricopa by describing a vocabulary that architects and designers can use when designing structures within the SRPMIC.

PIMA AND MARICOPA ARCHITECTURE

The Community is comprised of Onk Akimel O'odham "Salt River People" (Pima) and Xalychidom Piipaash "Upriver People" (Maricopa) and they come from a long history of rich culture, life and ties to the land. The Pima trace their ancestry back to the Huhugam people who occupied their original homelands since creation. The Pima continue to occupy their homelands to this day. The Maricopa are a distinct Yuman group that moved to the Gila River area around 1830 and the Lehi area by 1870. They lived and maintained their own villages. The Maricopa architectural style was consistent with all Pima structures by the time they moved to the region.

PRE-CONTACT (A.D. 1 – A.D. 1450)

Hohokam Architecture

Archaeologists refer to period from A.D. 1 to 1450 as the Hohokam period. Settlements during this time were permanent. The structures during this period were **pit houses** characterized by building over a hole or pit. Pit houses are similar to ki's (roundhouses). Clustered Pit houses were built around centralized areas for socializing, commerce and cooking.

The culture evolved architecturally from pit houses to **rammed earth** construction. Rammed earth construction is depicted in Casa Grande which was built by the Huhugam. It was built with mud, similar to adobe construction method, and wood was used for the floors and roofs. Huhugam architecture is a symbol of complexity and durability for its era, especially in their use of natural and local materials, rectangular shaped buildings with simple battered walls for ease of construction, stability and durability, and small and limited number of window openings responsive to minimize heat gain.

Early and Post Contact (A.D. 1450 to Present)

The construction of homes evolved over time. The use of local natural materials was evident in all structural construction. By the time the reservation was established, the architectural style for structures became consistent with Western construction methods with the use of local materials.

Ki' Style home or the round house is a traditional style home used primarily for sleeping and shelter. Most activity was conducted outside during the day. The ki' structure is characterized by vertical natural material such as cottonwood, willow, corn stalks and yucca. The vertical material helped to create a sound wall and the horizontal reeds stabilized the structure. Depending on the season, the ki' structure may or may not have a roof. The ki' emphasized home, stability, natural and quality materials and was environmentally responsive to the desert.

Jacal Style home was a rectangular home with flat roof with similar building materials to the Ki' home. This structural style was influenced by Hispanic settlers and was a more permanent structure than the Ki' style.

Adobe Style home was built after contact with the Spanish and constructed as member's homes through the early 1900s. The structure is characterized by adobe bricks made from local sand mixed with pine driftwood and other salvaged natural materials. The model was style to a simple home. The building's exterior is characterized by natural score lines, rough texture, local material and earth colors.

Sandwich Style home construction type began during the 1920s. The structure was built using rammed earth style method with overlay of wood, saguaro ribs, ocotillo or shrub. The roof was typically flat covered by lightweight beams and brush material. The architectural character emphasizes natural material, horizontal lines and striations, rough textures, uneven lines and the play of shade and shadow.

Ramada or "Vato" is a traditional style shade structure where most of the outdoor activity takes place. It is still an important structure today. The structure historically was built using natural wood beams. The flat roof was lined with ocotillo ribs and brush, such as willow or cottonwood leaves and more recently arrow weed.

Kitchen was a circular structure made of wooden posts and covered with willow and arrow weed. This allowed protection from the wind during outdoor cooking.

DESIGN INSPIRATION

Designers are encouraged draw inspiration from their own research into the cultural values and traditions of the contemporary SRPMIC, creatively incorporating their findings in their design. Possible resources are included at the end of this section.

Some sources for design inspiration include:

- Basketry and Pottery: Colors, artwork, geometric and abstract patterns similar to those used in basketry and pottery.
- Buildings/structures of the past: Reference for earthen materials, organic rough textures, simple and environmentally responsive.
- Environment:
    - Colors, patterns, textures and shapes found in the surrounding desert and its flora and fauna, especially those important to the Pima and Maricopa tribes such, water, cat claw, mesquite pods, cholla buds, saguaro fruit, agave, prickly pear cactus, wolfberry, rabbits, quail, and deer.
    - Use of natural materials.
    - Preservation of the dark night sky.
    - Sustainable use of resources and conservation.

    - Use of shade, creating comfortable microclimates in outdoor spaces.
    - Appreciation of native plants and the informal, natural landscape of the surrounding desert, mountains and rivers. Preserving and replicating this character instilling an appropriate sense of place.
    - Respect for views to significant sites and the mountains such as those of Red Mountain.
- Animals: Symbols related to plants or animals, natural phenomenon, or events especially illustrating their interaction in accordance with traditional stories, legends, myths and songs.
- Social:
    - Objects and patterns used in traditional games, clothing or activities.
    - Usable outdoor spaces for gathering and other activities typically adjacent to a building or a common area surrounded by buildings.

COMMUNITY OUTREACH DESIGN FINDINGS

In 2019, the Community obtained input from the SRPMIC members regarding cultural design within the Commercial Corridors. The questions targeted the use of building material, incorporation of Pima and Maricopa cultures and preferred development intensity.

MATERIALS AND COLORS

Glass, metal and light/white colors are not preferred. The use of metal may be used as an accent material application. Greater preferences were for building elevations to have a smooth finish and to use concrete material with textured patterns. Lighter colors and desert palettes are strongly preferred along with encouraging contrasting light and dark colors.

CULTURAL REPRESENTATION

Incorporation of cultural design features into the building architecture, whether abstract or realistic, is very important. Abstract representation requested for non-literal designs inspired from the culture. Whereas, the realistic representation requests for literal imprinting of Pima baskets and Maricopa pottery graphic designs onto exterior elevations. All cultural application techniques were voted yes with percentage listed below:

- Small cultural designs (95%)
- Abstract basket weave patterns (93%).
- Repeated basket or pottery patterns (88%)
- Realistic large cultural designs (86%)
- Abstract basket symbols (61%)
- Agricultural or desert plant graphics (61%)
- Huhugam design character (56%)
- Sandwich house – bands and layers application (43%)

The sandwich style is an architectural style that is derived from the sandwich house. It represents the layering of the mud on the home structure with cladding of saguaro ribs, ocotillo ribs or wooden beams or boards. In a modern application, this is typically achieved through slump block type application, use of smooth and rough CMU textures, and similar treatments. More realistic applications and design strategies need to be explored to create better cultural representation.

DEVELOPMENT INTENSITY

The preferred a lower development intensity. Preferred maximum building heights are buildings up to 3 stories and single story buildings. Large setbacks were preferred over small setbacks. There was also a strong liking to having an architectural farm character. Water features are also highly preferred.

CULTURAL DESIGN STRATEGIES

Design strategies that have been used to incorporate cultural aspects in a design include:

- Ornament
- Individual Elements
- Modified Continuity
- Paraphrasing
- Symbolic Forms
- References to activities, legends or stories
- Reflection of traditional patterns and colors and natural surroundings

These strategies are described below along with a few examples of how they were implemented. Additional examples are also provided in other chapters of these guidelines.

ORNAMENT

Applying ornament to a building or hardscape such as murals or art work depicting abstract or stylized images of animals, landscapes, persons in traditional activities or dress, traditional crafts or the geometric patterns or design motifs that are readily associated with the culture.

Example:

Design an art mural or sculpture of the Pima and Maricopa culture.

Example:

Integrate basket patterns or pottery patterns into building architectural elements so it's seamless and not tacked on.

INDIVIDUAL ELEMENTS

Introducing a traditional architectural element into modern architecture as an integral part of the overall design solution or introducing a traditional element in a new form.

Example:

Design outdoor spaces similar to a ramada (vato).

Example:

Express a traditional element in a new manner.

MODIFIED CONTINUITY

Replicating traditional building style, using traditional materials and details or similar appearing details, textures and patterns.

Example:

Use earth tones, indigenous to the region.

Example:

Provide deep punched windows or shading devices for all windows to minimize heat gain.

Example:

Texture the building similar to a historic structure.

PARAPHRASING

Borrowing traditional form and structure using modified scale, color, material and other details to fit contemporary design objectives. Solutions are identifiable but not necessarily exact replicas of traditional forms unless traditional forms are intended.

Example:

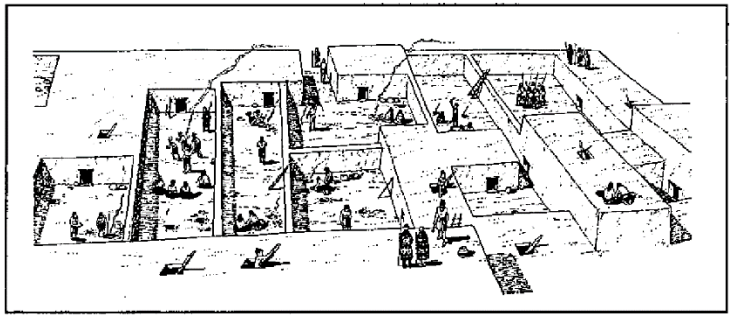
Break down large building massing to a human scale by eliminating flat facades by changing wall plane and change building colors, textures or materials.

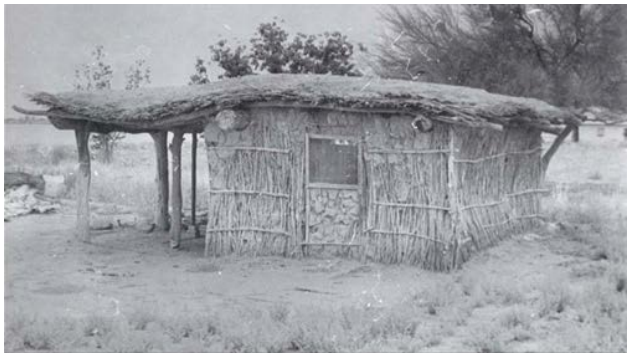
EXAMPLE:

Create a modern take on a traditional element.

SYMBOLIC FORMS

Plans and buildings following traditional, more organic shapes, arrangements, layouts, or patterns such as arranging buildings around common areas, creating useable and shaded outdoor spaces for activities and gathering. Emphasis on design forms and elements that are experienced at a human scale.





Example:

Building entries should be visible to pedestrian and vehicular traffic.

REFERENCES TO ACTIVITIES, LEGENDS OR STORIES

Example:

Reflecting characters depicted in songs, legends, traditional stories or activities using artwork, sculpture, or murals; using abstract likeness of indigenous animals, objects, plants or natural phenomena of significant value to the culture.

REFERENCES TO TRADITIONAL PATTERNS AND COLORS AND NATURAL SURROUNDINGS

Example:

Using abstractions of the artwork and geometric patterns and colors similar to those used in basketry and pottery and/or the colors, patterns, textures and shapes found in the surrounding desert.

Example:

Borrowing from the geological strata and the colors of the environment such as those in Red Mountain.

RESPECT FOR THE O'ODHAM HIMDAG

Design Don't

- Memorialization of individuals. (Living or deceased) Traditionally, the deceased are not memorialized and references to the deceased are traditionally offensive. Any literal images of the deceased should not be insensitively displayed. Some historic photograph displays that include images of people are now considered acceptable by most for educational purposes. It is better to use contemporary images of people with their consent on how their likeness would be used.
- Unofficial, unauthorized or inappropriate use, trivializing or manipulation of the Se'eh'he's Ki (The Man in the Maze).
- Imagery, symbols and artwork of other tribes is not generally well received. The Pima and Maricopa do, however, share many cultural elements with some other AZ tribes. For example, the Gila River Indian Community (GRIC), Ak-Chin, and Tohono O'odham are closely related to the SRPMIC Pima but there are also some differences. The other River Yuman (e.g. Quechan and Mohave) are closely related to the Maricopa of the Salt River but there are also some differences. The Piipaash of the GRIC are culturally considered the same for most purposes.
- Trivialization of sacred animals, eagles, hawks, rattlesnakes, ants, buzzards, owls, or coyotes. Context plays a large role in what is considered acceptable. When cultural elements are utilized in a trivial or immodest manner, it may be considered offensive.
- Placing cultural features in locations where they appear to be of little or lesser importance or are over powered by more dominant commercial features.
- Designs that reflect vanity, pretention, pomposity, ostentation or are purposely made to stand out rather than fit in with and enhance the surrounding area. O'odham and Piipaash traditional cultures are generally modest, and not ostentatious. When it comes to some modern design, however, that may be counter to commercial interests (e.g. Casino).
- Featured use of animal products.
- Females using rattles or males weaving baskets.
- Things that seem like a waste of resources for no purpose like large water features or spraying fountains and unsustainable designs or practices (making unwise use of resources).

Do not appropriate designs derived from cultural influences into commercial uses such as a logo or commercial branding of a product or business.

POTENTIAL RESOURCES

The SRP-MIC Cultural Resources Department, 10227 E. Osborn Rd. Scottsdale, AZ 85256 (480) 362-6325

The Huhugam Ki Museum , 10005 E. Osborn Rd. Scottsdale, AZ 85256 (480)-362-6320

Huhugam Heritage Center, 4759 N. Maricopa Rd. Chandler, AZ 85226 (520) 796-3500

Heard Museum, 2310 North Central Avenue, Phoenix, AZ 85004 (602) 252-8840

INTERNET

http://www.srpmic-nsn.gov/history_culture/

https://en.wikipedia.org/wiki/Pima_people

http://www.bing.com/images/search?q=Pima+Basket+Designs&qs=n&form=QBIRMH&pq=pima+basket+designs&sc=2-19&sp=-1&sk=

http://arizonamuseumofnaturalhistory.org/plan-a-visit/mesa-grande/the-hohokam

HOHOKAM SPECIFIC

Note: In the O'odham language, the term, 'Huhugam', is used in reference to their ancestors. Archaeologists borrowed this term, *spelling it 'Hohokam', and applied it to limited archaeological time frame.*

https://www.phoenix.gov/parkssite/Documents/d_048499.pdf (Houses)

https://www.phoenix.gov/parkssite/Documents/DesertFarmers.pdf (General Information)

https://www.phoenix.gov/parkssite/Documents/d_048520.pdf (Petroglyphs)

http://www.nps.gov/cagr/learn/historyculture/the-ancient-sonoran-desert-people.htm (Casa Grande)

http://arizonaexperience.org/remember/hohokam-canals-prehistoric-engineering (Canals)

PIMA AND/OR MARICOPA SPECIFIC

http://www.srpmic-nsn.gov/history_culture/ (Soon to be updated)

http://www.srpmic-nsn.gov/government/culturalresources/ (New site with growing information)

Wikipedia Search Key Words: "Pima people", "Maricopa people", "Hohokam"

Web Search Key Words: "Hohokam", "Huhugam", "Pima", "O'odham", "Akimel O'odham", "Maricopa", "Piipaash", "Xalychidom"

Image Search Key Words: "Pima basket" "Maricopa pottery", "Hohokam pottery", "Hohokam petroglyphs", "Hohokam shell", "Maricopa Indian", "Pima Indian"

http://www.uapress.arizona.edu/onlinebks/PROPHET/TITLPROP.HTM (An online book on Pima-Maricopa plant use)

BOOKS

The Pima Indians by Frank Russell a good resource for history, myths and tails and illustrations of pottery, basketry, architecture, games.

The Hohokam Desert Farmers and Craftsmen Excavations at Snake town by E. W. Haury

The Pima and His Basket by J.F. Breazeale History and illustrations of many Pima basket patterns.

Pima Indian Legends by Anna Moore Shaw. Many stories and legends of the Pima's.

A Pima Past by Anne Moore Shaw A short history http://www.srpmic-nsn.gov/history_culture/pimapast.asp

The Pima-Maricopa (Indians of North America) Henry F. Dobins, History photographs, paintings, and maps.

The Hohokam Millennium, edited by Suzanne K. Fish and Paul R. Fish. A collection of articles from a diverse group of Hohokam experts, covering a wide range of topics. Includes photographs.

The Hohokam Desert Farmers and Craftsmen Excavations at Snake Town by E. W. Haury. Contains many photos and illustrations from the famous Snaketown site.

The Pima-Maricopa (Indians of North America) by Henry F. Dobyns, History, photographs, paintings, and maps.

Handbook of North American Indians: Vol. 10, Southwest by Alfonso Ortiz & William C. Sturtevart. Includes chapters on the Pima and Maricopa with photographs.

The Pima Indians by Frank Russell a good resource for early Pima history and culture that includes illustrations and photographs

The Pima and His Basket by J.F. Breazeale History and illustrations of many Pima basket patterns.

Pima Indian Legends by Anna Moore Shaw. Many stories and legends of the Pimas.

A Pima Past by Anne Moore Shaw. A short history.

Yuman Tribes of the Gila River by Leslie Spier, a good resource for early Maricopa history and culture that includes illustrations and photographs

Dirt for Making Things: An Apprenticeship in Maricopa Pottery by Mary Fernald and Janet Stoeppelmann. Many illustrations and photographs of Maricopa pottery.

At the Desert's Green Edge: An Ethnobotany of the Gila River Pima by Amadeo M. Rea. Extensive information about Pima plant use, along with cultural information. Maricopa plant use is essentially the same.

From I'itoi's Garden: Tohono O'odham Food Tradition. Most of the information translates to Pima food traditions as well. This book has many beautiful photographs of native food plants, as well as stories, songs and cultural information related to them.

NOTE: Some information may be outdated and derived from archaeological/anthropological perspectives rather than O'odham/Piipaash cultural perspective. Take care to ensure that the sources reflect the cultures of the Pima and Maricopa. Incorporating cultural and tradition into the design is a process of working with the Community and is not viewed as a product. Responses are not given in a quick manner. Taking a slow deliberate receptive approach often results in quicker and better results.

SITE PLANNING

CONTEXT OF SITE AND SURROUNDING ENVIRONMENT

Consider the interrelationship between uses both on and off the site, using location, orientation and layout of the various site improvements to take advantage of supportive relationships and mitigate less compatible aspects. Identify important opportunities and limitations with a physical site analysis.

PLACEMENT OF USES

- Place synergistic uses in proximity, in view of each other, and connect them with pedestrian links.
- Design the space along the business front and between adjacent buildings to support the primary uses or organize buildings around shared useable open spaces such as a courtyard or plaza.
- Avoid isolating a use in its own "island" surrounded by parking. An example is a drive-through restaurant that is a single-use building with a drive-through flanking two or three sides. Forward thinking design incorporates drive-through lane{s} along the back and side of multi-tenant buildings to lessen vehicular and pedestrian conflicts while providing flexible tenant options.
- Plan sites so buildings can be oriented with their longer elevations facing north and south and smaller elevations facing east and west to minimize heat gain.

GAS STATIONS AND DRIVE-THROUGH LANES

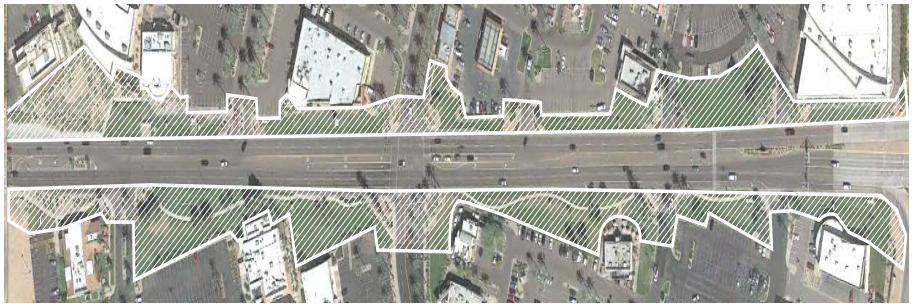
- Orient gas canopies, drive-through lanes, service functions and accessory structures away from the intersection of arterial roadways and public viewing areas.
- Drive-through windows, menu boards, equipment, and associated stacking lanes should be located to minimize impacts on adjacent areas and should be completely screened from public view and the view of adjacent sites.
- Circulation should allow for adequate length of stacking for drive through facilities that do not interfere with the movement of traffic (on or off-site) and/or pedestrian areas. Generally, a minimum of 10 stacking spaces should be provided for restaurant uses.
- Avoid prototypical buildings. Develop building types and expressions to address individual site conditions and SRPMIC contexts.
- Drive-through windows should incorporate architectural canopies consistent with the design theme of the building. Canopies over drive-throughs can help to achieve more variation to building mass, added comfort for users, breakdown of building mass and finished building appearance.

USE OF OPEN SPACE AND LANDSCAPING

- Design open space to be functional and serves a purpose.
- Allocate a generous portion of the required open space to building base areas and design it to support the business. *See Building Base Areas*
- Apply low impact storm water management and multi-use of drainage facilities throughout the site. *See Storm Water Management.*

STREETSCAPE

- Create a lively streetscape with variations in depth using the placement of buildings, parking, internal circulation, detention areas and other site elements.
- Avoid creating the effect of a solid wall of evenly aligned buildings by varying building setback and orientation along street frontages and along continuous building base areas.



- Plan for special features and selected larger plants within required landscape setbacks at major intersections.

VIEWS

- Identify and capitalize on opportunities for views of the mountains from outdoor activity areas and buildings wherever possible.
- Preserve mountain views using view corridors over parking lots, detention areas, open space, or alignments of streets, driveways or walkways. The view preservation of Red Mountain is the most important cultural element for the Community.
- Plan or recognize on-site view corridors created by walkways, driveways, and open spaces and consider placement of public art, landscape features or other attractive features at their focal points.

- Place taller structures and utilities where they will not interfere with views, including views from upper floors.
- Respect the General Plan goal of creating an attractive appearance from the Pima Freeway and preserving views of the mountains and of significant sites from the Pima Freeway. The Pima Corridor Overlay requirements in the Zoning Ordinance may also apply.
- Plan spaces for public art in locations where it will be viewed and appreciated like along major pedestrian circulation routes, building entrances and street intersections.

SITE SCREENING

- Place less attractive areas such as bay doors and service areas out of public view through building orientation or by screening.
- Use landscape or physical features to mitigate less attractive views out of and into the site and of less attractive features like utility or service areas.
- Design screening to blend in with the site or design them creatively to add to the aesthetics of the site or building.
- Avoid placing refuse enclosures in the focal points of driveways or drive aisles or where their doors are adjacent to pedestrian walkways or facing main arterials or site entrances. Where these are visible from public areas use similar materials and design details as the building on the enclosure and consider using decorative gates.
- Avoid placing backflow preventers, transformers and other apparatus in parking lot landscape islands. Instead place them in less conspicuous places where landscaping is more robust and can hide unsightly equipment.
- Design screening to blend in with the site or design creatively to add to the aesthetics of the site or building.
- Incorporate cultural expression where appropriate.
- Use decorative walls and gates when they are visible from a street or public area.

BUILDING BASE AREAS

Use a generous portion of the open space, as required by the Zoning Ordinance, in the base area to provide a landscaped setting that relates to the building scale and architecture and that supports the use.

In areas that will be used by pedestrians:

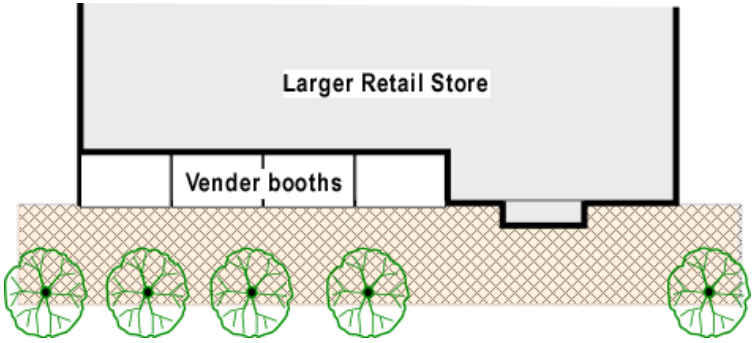
- Create usable outdoor areas that support the use of the building, that facilitate social interaction and that will be attractive to use.
- Define outdoor spaces using various vertical, horizontal and overhead design elements.
- Provide greater detail and ornamentation, sense of semi enclosure, gateways and passages, public art and nearby focal points.
- Employ extensive use of shade for outdoor comfort, heat reduction and energy efficiency. Where trees are used allow room for the expected width of tree canopies at maturity.

Consider the interplay between the base area and the bottom floor façade of the building, the building footprint and building orientation.

- If the building is used for a retail sales, allow adequate space for window shopping, outdoor displays or sidewalk sales plus an unobstructed pedestrian pathway a minimum of five (5) feet in width across the frontage. If the building is a hotel or restaurant consider providing an outdoor patio for relaxing or dining. For office uses consider outdoor meeting space or employee break areas.
- Locate outdoor seating areas in pedestrian areas away from parking lots and drive aisles.
- Consider the orientation of the spaces,
- Arrange buildings to create usable shaded areas for outdoor uses.
- Use trees to shade windows particularly on the east and west facing elevations.
- Place trees and shade structures where they will effectively shade pedestrian areas during the hottest times of the day and year. Relate the mature scale of the landscape to the architecture, placing trees in front of walls that have less detail.
- Allow adequate space for the mature size of tree canopies.
- Consider creating Vender Booths along the front of larger uses or external access to services to bring life and shoppers to the store front.

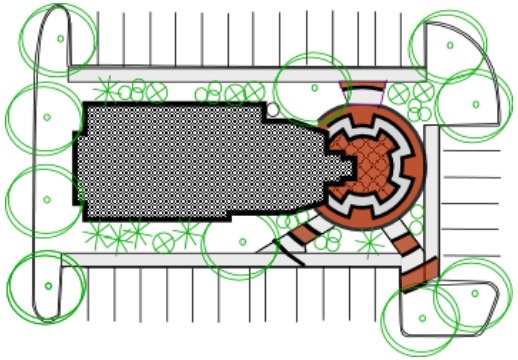
ENTRY AREA TRANSITION

- Plan space at entrances for special features to identify and add interest to the entryways.

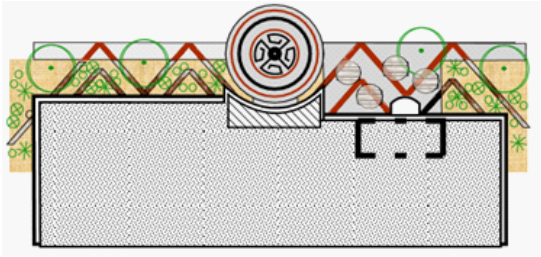


- Providing a transition from open to semi-enclosed to enclosed space.
- Blur the line between indoors and outdoors.
- Emphasize attractive details and ornament at human scale.
- Use a twelve to sixteen foot high awning, portico or similar structure to shelter the entry walkway.
- Plan an unobstructed pathway a minimum width of eight (8) feet to the entrance.

Base areas are excellent locations to incorporate cultural expression in locations where they can be appreciated close up. They can be incorporated into the overall design in many ways:



- As public art pieces, preferably produced by local Pima and Maricopa artists..
- Light fixtures, wall treatments, murals, signage, and patterns in hardscapes or created in ground covers of landscapes.
- Street furniture, plant pots, benches, tables, trash receptacles, drinking fountains, bike racks
- Abstract bold geometric patterns suggestive of the culture like those found in traditional basketry and pottery into paving patterns, murals, wall textures, etc.



- Symbolic references to the natural, animal, spiritual and/or human worlds.
- Create usable shaded outdoor spaces with an informal character for activities related to the use and/or for sitting, waiting, meeting or gathering. Features that promote social interaction and a connection to natural features.

BUILDING BASE AREA PARAMETERS

The base area around a building is part of the required open space and there are specific dimensional requirements that are described in the Zoning ordinance.

HOW TO DETERMINE BASE AREA REQUIREMENTS.

Measure the perimeter of the building foundation footprint excluding the perimeter along service areas such as driveways to delivery doors but including walled outdoor storage areas.

Multiply that length by the required square feet per foot found in the Zoning Ordinance.

The result is the minimum area around the base of the building required to be developed with landscaping including pedestrian and other improvements that support the use. Examples include pedestrian walkways, outdoor shopping areas, patios, seating areas,

dining areas, recreation facilities, landscaped areas and public art features.

Required minimum depths of entry transition improvements at primary and secondary entrances are described in Article 6 of the Zoning Ordinance.

BASE AREA IMPROVEMENTS

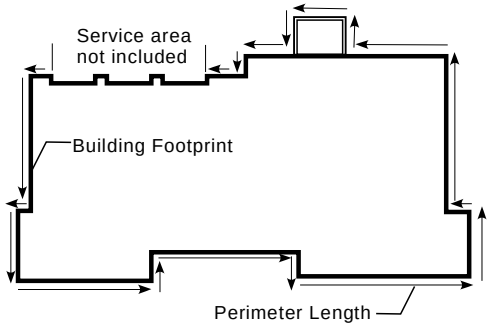
- may be located anywhere around the building, and
- must be no further away from the building than three times the minimum depth required at primary entrances, and
- must be contiguous with the building foundation.

Parking lot islands, parking spaces, driveways, and service areas that abut the base area are not included as part of the required base area.

Base areas can overlap into landscape setbacks as described in Article 6 of the Zoning Ordinance.

EXAMPLE

Consider a 21,440 sf 24.5' tall building with a perimeter length of 540 ft. There are 3 loading bay doors that together measure 54 ft.



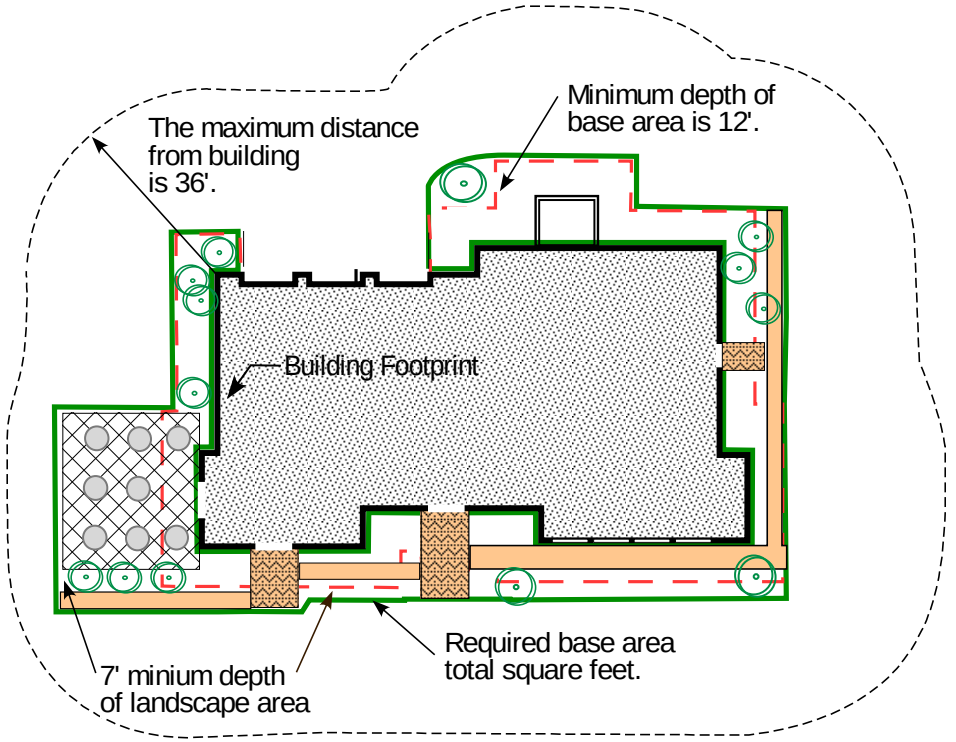
The required minimum base landscape area (Check current Ordinance table) for a building that is 25.5 ft high is 13 sf/lf of perimeter excluding service areas.

Calculation

540 ft. perimeter minus length of service area (54 ft.) = 486 ft.

486 ft. x 13 ft./ft. = 6,318 sf. = minimum required base area.

Minimum Depths (check with current Ordinance):
The minimum base landscape depth is 12 ft.
Minimum landscape area is 7'.



PEDESTRIAN CIRCULATION

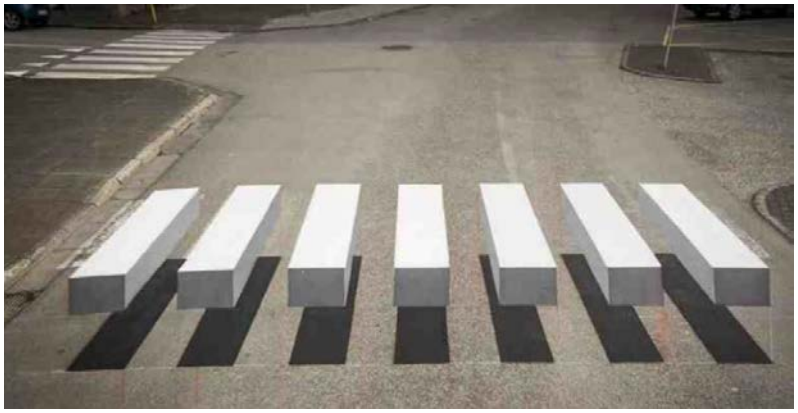
Give pedestrian circulation a high priority in the design. Provide pedestrian facilities that are attractive, safe, comfortable, accessible and convenient to use.

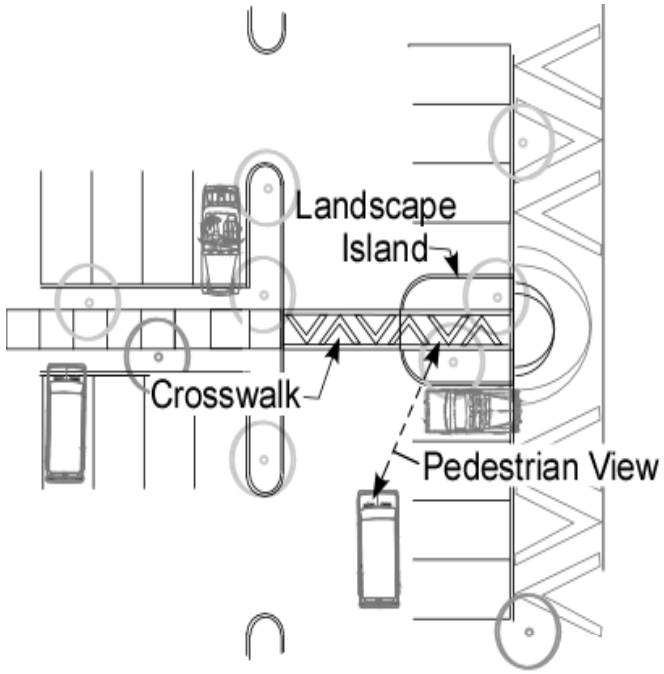
ATTRACTIVENESS

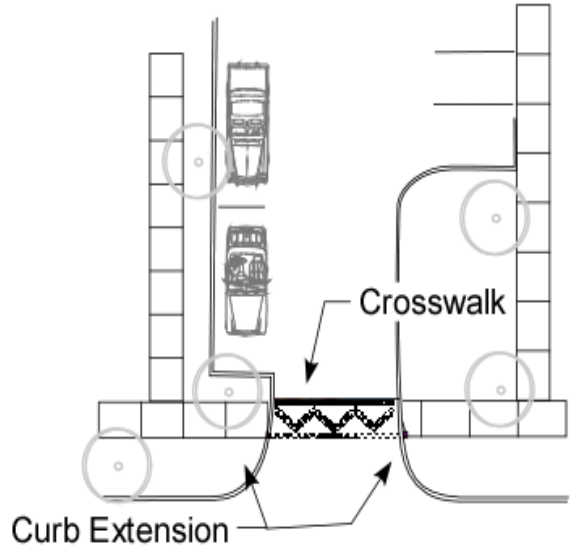
- Use materials that add to the character of the overall site design.
- Change materials or colors in areas of emphasis such as building entrances, along building frontages or at cross walks.
- Increase the level of detail in areas of higher pedestrian traffic like major public entryways, along business frontages and in gathering areas by adding detail through use of patterns, landscaping, planters or containers, benches, pedestrian lighting, kiosks, street furniture, etc.
- Changes in materials colors or textures provide an opportunity to incorporate cultural aspects or patterns into the design. (See Cultural Response)
- Use natural or organic colors, textures, patterns and materials as the base scheme for circulation routes.
- Strong contrast in materials, colors or textures will help to strengthen Pima and Maricopa cultural representation.

SAFETY

- Design pedestrian circulation to minimize conflicts with vehicular traffic.
- Pedestrian safety is greatest when vehicle speeds are low, use traffic calming techniques, such as narrowing drive lines, to slow traffic in areas of high pedestrian use.
- Separate sidewalks or pathways from vehicular use areas with a landscape strip with trees or raised curbing; In building base areas use trees and landscape features, street furniture, bollards, benches, pedestrian lighting, bicycle racks, kiosks, etc.
- Create the shortest possible crossing distance at pedestrian crossings by using curb extensions or bumped out landscape islands and using minimum curb radii. This also improves visibility of pedestrians.
- On wide streets provide a pedestrian refuge area in the center so traffic from each direction can be crossed one direction at a time and slow moving pedestrians are not stuck in traffic lanes.
- Differentiate major crosswalks with changes of materials, colors or striping and advanced stop lines. Ensure that sidewalks and pathways are free from hazards and have appropriate lighting levels where needed. Consider raised sidewalks or plaza areas in places where vehicular traffic conflicts with pedestrian ways.



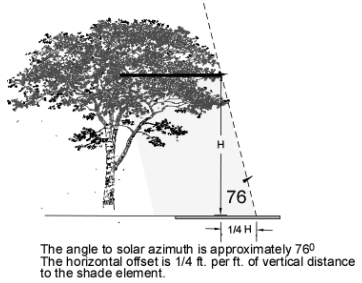




COMFORT

- In the desert, shade adds comfort and usability. Shade walkways with closely spaced shade trees, trellis, awning or covered portico, or other means.

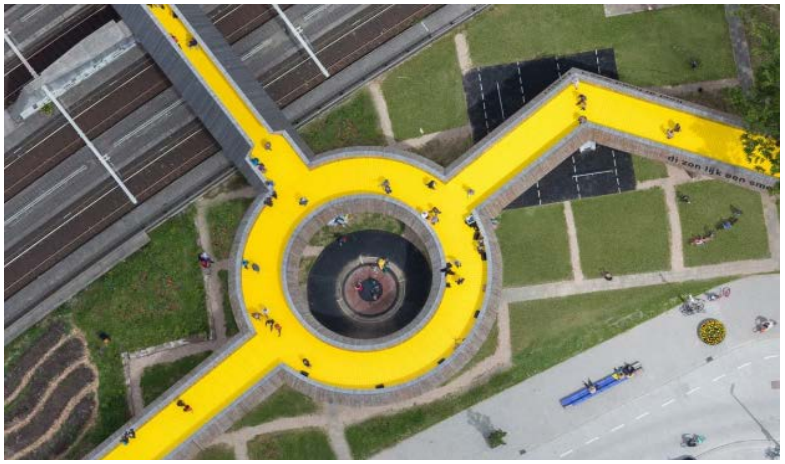
- Comfort also is a related to appropriate size for the anticipated number of pedestrians. Include extra width for window shopping, seating, landscaping, lighting and other design features without being excessively wide.
- Light colored materials are highly preferred in parking areas and walkways to reduce heat gain.
- Natural appearance is preferred especially in the rural areas.
- Place trees on the south or west side of walkways to gain the most shade benefits



CONVENIENCE

Convenience is related to location, continuity, connectedness and a reasonably direct pathway, not involving a significant amount of detouring between the starting points and the likely destinations.

- Provide a reasonably direct pedestrian connection between public entrances of all businesses on the site. Buildings may have more than one public entrance.
- Create additional onsite connections to existing or future development on abutting sites within the same project and existing or planned development on adjacent properties.



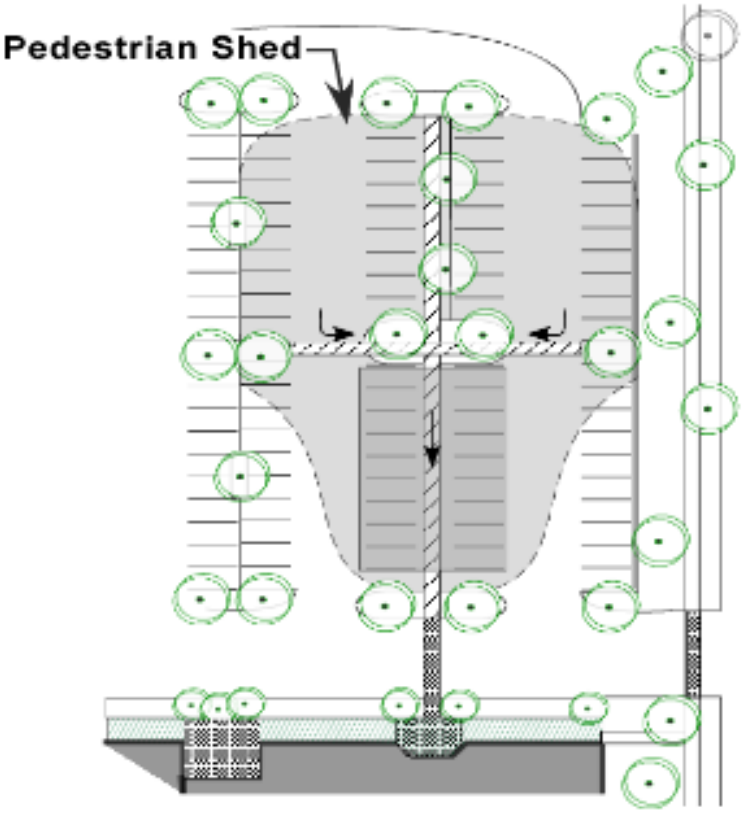
- Provide connections to sidewalks, pathways or trails on abutting streets in public open space or recreation areas.
- Parking lot spaces should be with 150 feet of a pedestrian path that connects to the logical destination.
- Eliminate breaks in the pedestrian circulation system. Connect walkways to create a continuous path, including between adjacent sites.

GENERAL LAYOUT OF PEDESTRIAN CIRCULATION

Depending on the site layout, design the pedestrian circulation plan using "pedestrian shed" or a "network of loops" or a combination of these concepts.

PEDESTRIAN SHED CONCEPT

- Locate pedestrian connections where they will intercept pedestrian's logical pathways and connect to likely nearby destinations.
- Connected facilities should be within a 5-minute walk (1,250 feet) measured along the actual distance walked, not the linear (aerial) distance.
- Extend paths from building entries into individual parking areas ideally through landscaped medians or under shaded areas.

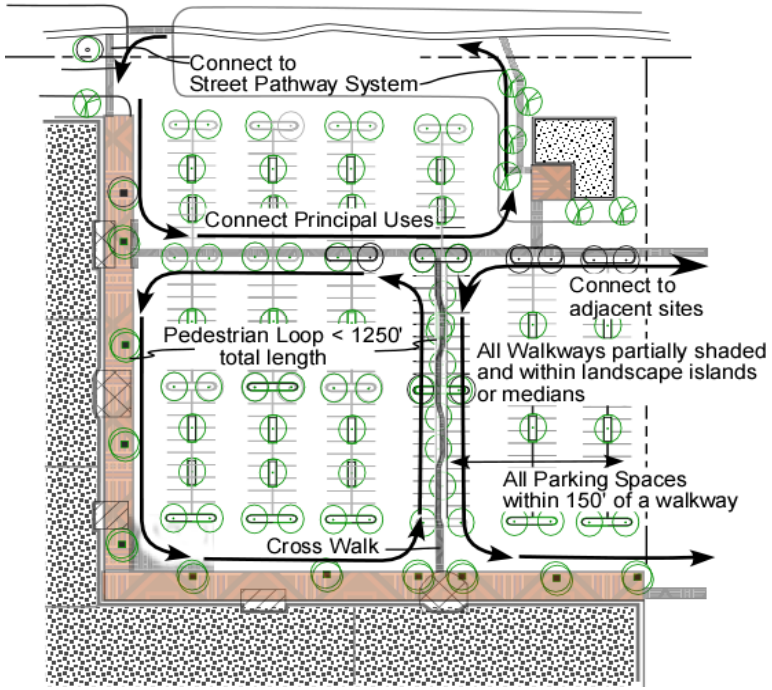


NETWORK OF PEDESTRIAN LOOPS

- In general design in loops no greater than 1250 feet in length. The length of a loop is measured starting at any point on the pathway, then around the loop along the pathway and back to the starting point.

- Loops may include principal and secondary sidewalks or walkways, multi-use pathways or other pedestrian ways and may include segments within building base areas, medians parking areas, along driveways, within streetscapes or through any landscape or open space area and may include segments on adjacent properties.

Pedestrian Loops



- All streets shall include a sidewalk and/or a pathway in conformance with the Community's Comprehensive Transportation Plan and other standards of the Community.

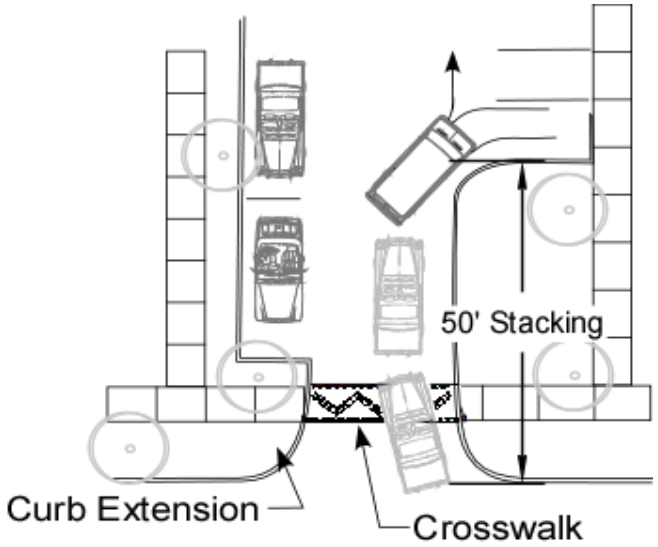
ACCESSIBLE

- Primary circulation routes should comply with the Americans with Disabilities Act (ADA) guidelines connecting all primary entrances to each other, to ADA parking and to the pathways on the street.
- Primary pedestrian routes should be a minimum of 5' in width to facilitate passing of a wheelchair and pedestrians in opposite directions.
- Provide areas where pedestrians can be safely dropped off near entrances without impeding vehicular circulation.

PARKING

- Break up larger parking areas of more than 200 spaces into smaller sections using landscape medians, drainage ways, or detention areas or shaded pedestrian paths.
- Avoid surrounding each individual use with parking on all sides
- Arrange parking to minimize conflicts with pedestrians. Arranged rows of parking perpendicular to the destination facility to minimize the times pedestrians cross drive aisles.
- Create multiple smaller parking areas rather than one large parking field. Consider separating areas like employee and customer parking. Customer parking should be closer to the destination and separated from employee parking to allow quicker turnover in the most convenient locations.
- Incorporate pedestrian paths that serve parking into an overall pedestrian circulation system. In general all parking spaces should be within 150 feet of a pedestrian path that connects to the use served. See Pedestrian Circulation. See Pedestrian Circulation
- Large parking facilities, with spaces for over 500 vehicles, shall develop a parking plan as part of the design process. Such plan shall include strategies for transit circulation, short and long term parking needs, pedestrian circulation routes, bicycle parking, ride-share and alternative vehicle parking, and other elements depending on the specific site conditions.
- Parking spaces should not directly access collector or arterial streets. Exceptions can be made within developed areas where the speed limit is 25 mph or less, where the on street parking is facilitated and is part of a prior approved plan.

- Except for single family homes that access local streets, parking should be arranged so that streets are accessed by forward motion of the vehicle. See Residential Guidelines
- Provide a minimum of 50 feet between driveways entrances from arterial or collector streets and the nearest parking space to allow space for queuing of incoming vehicles for traffic flow and safety. (Measured from the curb line or edge of pavement of the street.)



- Shade as much parking area as possible to reduce heat gain.
- Avoid placing covered parking between the street and the building where it will obstruct the view of the building and visually separate the building from the street view.
- Use of solar collectors as shade structures is encouraged

VEHICULAR ACCESS AND CIRCULATION

In commercial areas follow the SRP-MIC Transportation Plan, Design Standards and policies for:

1. Public and Private Streets
2. Site access from streets.
3. On site circulation of emergency and service vehicles.
4. Provision of fire lanes and fire equipment staging areas.
5. Connections between sites both in the same development and in adjacent development sites.

(For residential development see Residential Guidelines)

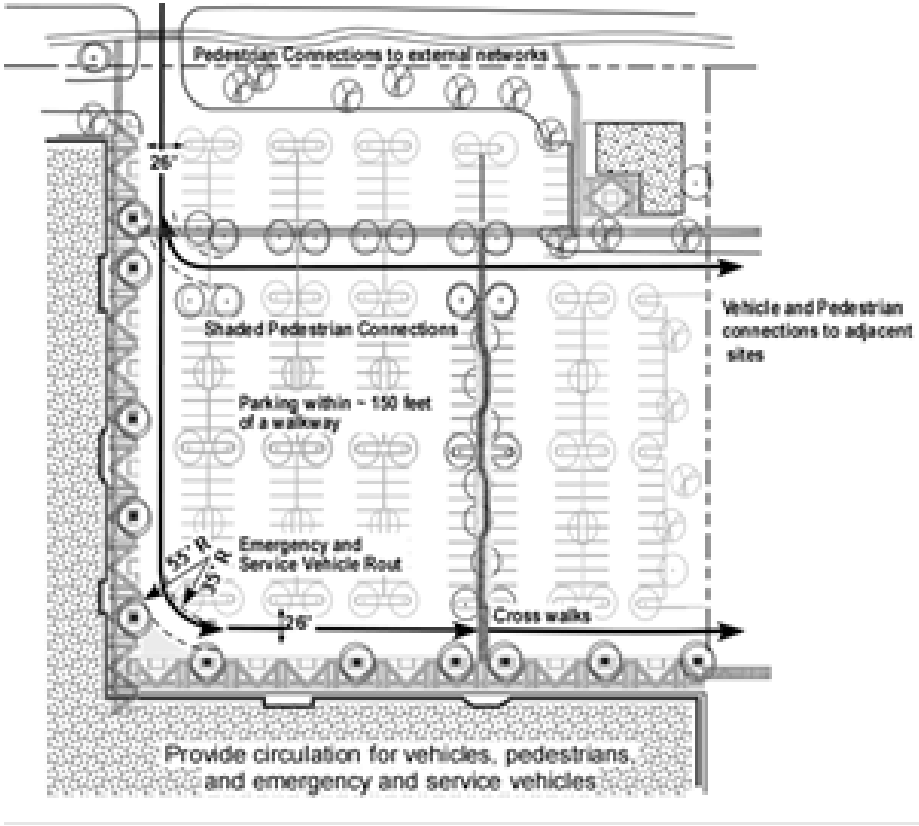
- Plan street intersections with arterial streets at 1/8, 1/4, or 1/2 mile points from arterial intersections where ever possible.
- Provide right-in and right-out only for driveways closer than one hundred fifty feet (150) from any street intersection (as measured from the curb line).
- Provide traffic control signs for all streets and interior vehicular circulation areas as necessary and as required by Engineering and Construction Services Department adopted codes, standards or policies.
- Use "T" intersections as much as possible rather than four way intersections

TRAFFIC CALMING

- Design streets and drives so as to encourage proper travel speeds without speed controls by using appropriate sized lane widths, curves and where needed other traffic calming techniques.
- Use traffic calming techniques where vehicles and pedestrian conflicts occur.
- Separate pedestrian and vehicular paths and distinguish pedestrian crossings using different materials.
- Narrow the roadway widths using landscaped bump outs at pedestrian crossing to shorten the distance of the crossing.
- Provide center refuge areas where multiple laned roadways cross pedestrian paths.
- Consider using traffic circles that slow and channelize traffic at intersections.

CROSS CONNECTIONS AND CROSS ACCESS BETWEEN SITES

At least one vehicular cross connection between abutting development sites within the first three hundred and fifty (350) feet of common lot line plus one connection for each additional six hundred (600) feet of common lot line may be required where such access provides better internal circulation between compatible uses and reduces traffic on arterial and collector streets.

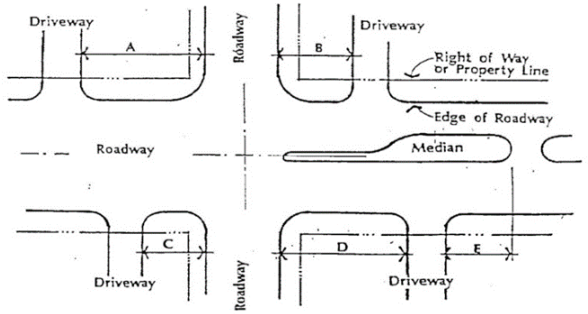


- Cross-access and maintenance agreements associated with the interconnections shall be provided with applications for site plan approval.
- Provide cross-access between sites as part of the circulation system of the site.
- Street layouts shall connected to those within adjoining developments or at their planned or anticipated locations when the adjoining property is not yet developed.
- Uses on individual pad sites, such as restaurants and service stations, situated within a larger commercial development shall share street access of the development to the greatest extent possible, and shall have vehicular and pedestrian connections to other uses within the development.
- Developments shall install improvements which prevent unauthorized vehicular access to any abutting vacant land. All such improvements shall be removed from access ways when the abutting land is developed.

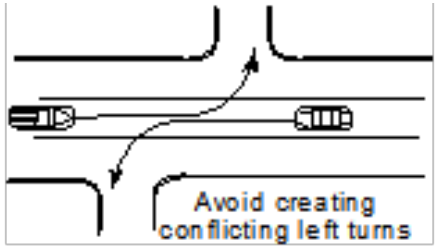
ACCESS TO MAJOR STREETS

Minimum driveway clearances to intersections controlled by traffic signals			
	Functional Classification of Road		
Dimension	Arterial	Collector	Local
A	230	175	50
B	115	85	50
C	230	175	50
D	230	175	50
E	75	0	50

Minimum driveway clearances to intersections controlled by stop signs			
Minimum Corner Clearance in Feet			
Dimension	Functional Classification of Road		
	Arterial	Collector	Local
F	115	75	50
G	115	85	50
H	85	85	50
J	115	75	50
K	75	0	0



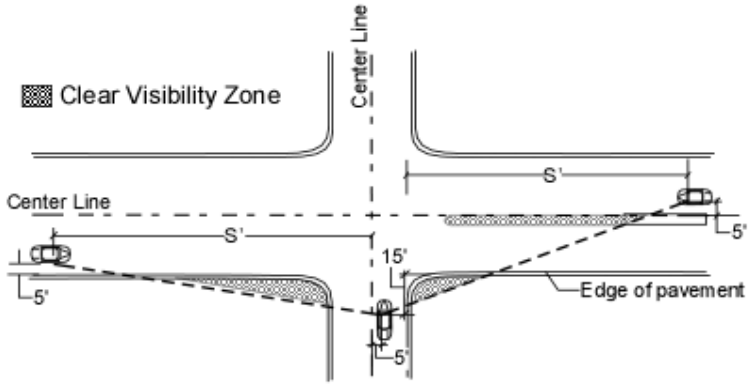
Avoid the creation of conflicting left turns on arterial or collector streets with center turn lanes by aligning driveways or by offsetting driveways on opposite sides of the street by a minimum of 175 feet. This does not apply where left turns are controlled by a median.



CLEAR VISIBILITY ZONES AND TRAFFIC SAFETY TRIANGLE REQUIREMENTS

Clear Visibility Zones are required at street intersections and at driveway intersections with streets. Visibility within these zones shall be free of obstructions greater than one (1) foot in width between a height of thirty (30) inches and seven (7) feet above the adjacent street grade including but not limited to parked vehicles, signs, walls, utility boxes, fences and landscaping. See Landscaping Section/ Visibility zones.

At street intersections and the intersection of a street and a driveway. Clear Visibility Zones with the applicable dimensions listed in the table below and measured as illustrated in the adjacent sketch shall be maintained at all stop-controlled streets, driveways and signalized intersections.

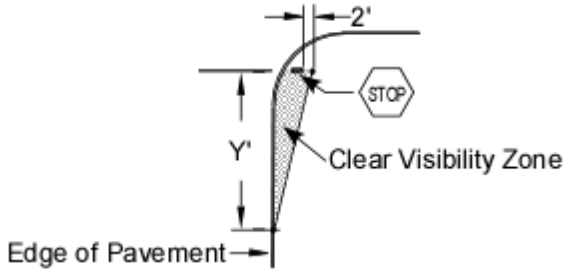


Clear visability zones at stop controlled streets, driveways, and signalized intersections.

Clear Visibility Zones at stop controlled streets, driveways, and signalized intersections.				
Classification of intersecting street	**Speed Limit MPH**	**ROW width**	**Total Number of Lanes**	**'S' in feet**
Rural Access Way	15	25'	2 lanes	90'
Rural Local	20-25	50'	2 lanes	150'
Urban Local Residential	20-25	50'	2 lanes	150'
Urban Local Commercial	20-25	60'	2 lanes	250'
Rural Minor Collector	20-25	80'	2 lanes	325'
Urban Major Collector	30-35	80'	2 lanes with center turn lane, or 4 lanes	325'
Rural Arterial	35	110'	2 lanes	400'
Urban Arterial or Highway	45	110'	4 lanes with center median or center turn lane	475'
All roadway classifications refer to SRP-MIC classifications.				

Approaching stop signs or traffic control signs. Clear Visibility Zones from the nearest travel lane to a stop sign or other traffic control sign shall be maintained approaching the sign. This clear visibility zone includes the area between the edge of pavement and a line drawn from a point two (2) feet from the sign away from the edge of pavement and a point on the edge of pavement at the applicable distance listed in the table below as illustrated in the adjacent sketch.

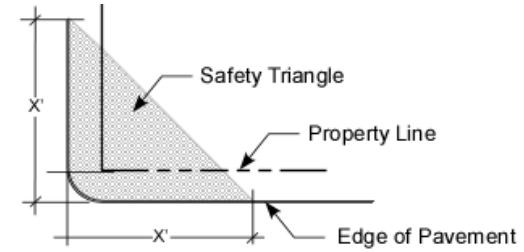
Clear Visibility Zone for traffic control signs	'Y' in feet
Rural Access Way, Rural Local, Urban Local Residential, Urban Local Commercial	200'
Rural Minor Collector	325'
Urban Major Collector, Rural Arterial, Urban Arterial or Highway	450'



Clear Visibility Zone for traffic control signs

Traffic Safety Triangle. The Clear Visibility Zones at street intersections are referred to as traffic safety triangles and are required as listed in the table below and illustrated in the adjacent sketch.

Clear Visibility Zone for Traffic Safety Triangles	X' in feet[1]
Rural Access Way	25'
Rural Local	35'
Urban Local Residential	35'
Urban Local Commercial	35'
Rural Minor Collector	35'
Urban Major Collector	45'
Rural Arterial	45'
Urban Arterial	45'
[1] measured along the curb line or edge of vehicle use area within ROW including turn lanes, bicycle lanes or shoulder.	



Traffic Safety Triangle
for all corner properties at street intersections

Traffic Safety Triangles overlap other clear visibility zone requirements.

Where roadways of different roadway classifications intersect the applicable distance for each street applies respectively.

See the Landscaping section for details on tree and shrubs within Safety triangle and visibility zones

EMERGENCY AND SERVICE VEHICLE ACCESS

In all development plan access routes for emergency and service vehicles including police, fire, ambulance, paramedic and refuse vehicles is required within all developments based on adopted codes, standards and polices.

Routes must provide a driving surface with a turning radii of fifty-five (55) foot exterior and thirty-five (35) foot interior, a minimum width of twenty-six (26) feet curb to curb. Vertical clearance for the entire

width of at least thirteen (13) feet six (6) inches or 15' clearance for buildings more than 24 feet in height or two or more stories.

Provide a minimum of fifteen (15) feet in width for each lane where entry driveways are divided and for one way access ways.

Routes for fire and emergency vehicles must be approved by Salt River Fire Department, always be available for use by fire trucks and emergency vehicles and be designed to meet fire equipment load requirements.

When a dead-end access route exceeds one hundred-fifty (150) feet in length, an approved turnaround area may be required.

Fire lanes, access points and staging areas shall be provided as determined necessary by the Salt River Fire Department based on adopted standards, codes or policies.

For buildings of two or more stories two 50' x 50' staging area are required with the center of the staging area not more than 75 feet from the base of the building. The two access area should be at opposite corner of the building.

REFUSE AND SERVICE

A non-circuitous, efficient path accommodating efficient refuse and service truck circulation shall be provided where necessary.

Refuse trucks cannot back up more than fifty (50) feet after servicing a refuse container. SRP-MIC refuse vehicles are thirty-seven (37) feet long and cannot turn while backing.

STORM WATER MANAGEMENT

LOW IMPACT DESIGN

- Use Low Impact Development principles to manage storm water runoff close to the source using decentralized small-scale detention dispersed throughout the site.
- Integrate storm water detention and drainage way features into other site elements so they serve the secondary additional purpose of storm water management such as rain gardens, dry swales, bio swales, infiltration trenches, detention ponds, or infiltration basins.
- Minimize impervious surfaces and use permeable hardscapes like pavers or permeable concrete, permeable asphalt, permeable interlocking concrete pavers, and grid pavers.
- Avoid single purpose drainage features, they do not count towards the open space requirement, are an inefficient use of land, and waste water resources. Instead:
- Use surface drainage where ever possible, direct runoff to and through landscape areas where it can be absorbed and used by plants and minimize use of drainage pipes or gutters to convey water through the site.
- Along a walkway, driveway or pavement edge use sheet flow into landscaping and incorporate a raingarden or landscaped drainage swale.
- Break up a larger parking lot with a landscaped median/ infiltration or detention area.
- Incorporate a shaded open space for use as a gathering area, employee break area, or a setting for art features that also serves as a detention pond.
- Incorporate detention into landscape screens.
- Use a landscaped detention or infiltration area to vary the width of the streetscape's landscape setback.
- Expand base area with an ancillary outdoor sales or seating area with permeable hard surfaces that also serve as detention for run-off from roof surfaces and impervious portions of the base area.
- Design a park with active or passive recreation facilities for employees or for a neighborhood that serves as a detention or infiltration area.
- Include a pathway along the dry portion of a drainage way swale or easement connecting uses or a neighborhood to a detention area park.

GRADING AND DRAINAGE DESIGN APPROACH

Traditional storm water management favors rapid concentration of run-off, routing it through a drainage system of curbs and gutters, inlet structures, and storm drain pipes to a central end of pipe detention area.

Low-Impact Development closely integrates storm water management throughout the site plan controlling it as close to the source as possible minimizing storm water runoff, slowing flows using surface flow and solutions that increase infiltration, cleaning and making use of water to enhance the environment.

Traditional Drainage Plan	Low Impact Design
Addresses drainage through grading directing flows to a downstream detention area(s).	Closely integrates storm drainage into the site planning and design process. Minimizes runoff through use of pervious surfaces.
Collects runoff from impervious surfaces, concentrating it into flows	Addresses run off as close to the source as possible through micro solutions. Breaks up and disconnects flows from various sources defining smaller drainage areas disbursed throughout the site.
Routes run-off through a system of curbs and gutters and impervious surfaces, inlets and storm drain pipes.	Slows flows and routes them through pervious surfaces and areas designed to increase infiltration. Relies mostly on surface flows.
Uses a few larger central detention basins whose primary purpose is detention.	Integrates detention into other multifunctional site features disbursed throughout the site designed to serve secondary purpose of detention and/or detention and infiltration.
Uses landscape to screen/improve appearance of basin.	Landscaping serves primary purposes of enhancing the site, providing shade where it is useful, screening poor views, bio-filtration, trans evaporation and wildlife enhancement.

DETENTION AREA DESIGN PARAMETERS

Refer to ECS Standards for Engineering Requirements

- Detention areas must be designed to drain within 24 hours.
- Scarify and loosen the bottom of retention/planting areas (including within parking lot islands and medians) adding organic material to depth of 18" to increase absorption/ percolation and enhance plant growth.

GRADING: THE KEY TO NATURAL APPEARANCE

- Design detention basins and swales with shallow sloping sides which vary in grade and direction shaping the top edge and the slope of the sides and bottom to create a natural appearance,
- The maximum embankment slope is one foot vertical per four feet horizontal
- Vary the bottom elevations to provide planting shelves for trees.
- The maximum depth of a detention area is three (3) feet.
- The preferred ratio between the width-to-depth of a retention basin is ten-to-one (10:1) except where a retaining wall is incorporated into the detention area bank.
- Walled banks may be permitted for up to 50% of the perimeter subject to approval of the wall design meeting the aesthetic, structural and safety standards.
- Where walls create a change in grade of more than thirty inches, the wall shall extend a minimum of forty-two inches above the higher grade.
- Retention areas in excess of 1.5 feet in depth, should not exceed 75% of the required minimum landscape setback area as defined by the Zoning Ordinance.

Minimize the visual impact of basin inflow and outflow facilities. Acceptable techniques include but are not limited to:

- Minimize rip rap to areas to the inflow bay and channels subject to erosion and armor those with angular rock riprap with color and surface appearance similar to the adjacent mulch ground cover.
- Do not use round river rock for rip rap erosion control or as a ground cover.
- Screen inflow and outflow facilities with vegetation.
- Bring finished grades (including mulch) immediately adjacent to the outlet facilities to the rim of the outlet.
- Recess the inlet or outlet into the bank using low headwalls with wings that match the adjacent slope.
- Steepen, shorten, angle or curve the inflow channel.
- Incorporate the inflow or outflow into another structure.
- Pipe inflow into the bottom of basin, matching apron or splash pan or rip rap to adjacent soil or mulch colors.
- Sheet flow into the basin where slopes are fairly flat, flows are low and curbing is not needed.

Riprap should be angular rock of adequate size to remain in place under maximum flow conditions without cement embedding and shall be hand placed in tight interlocking configuration with the flattest side up but not creating a smooth channel.

Concrete or grout embedding may only be used in areas of extremely heavy water flow and/or very steep slopes. Ninety-five (95) percent surface exposure shall be rock. Rock and grout shall be a similar color as the adjacent ground. Grout shall be recessed and not readily visible.

Use vegetation as an integral, functional component of storm water management facilities, improving the overall performance of the facility through absorption, trans-evaporation, soil stabilization, filtering, and contributing to the facility's aesthetic appearance.

Use vegetated swales designed to accept sheet flow runoff and convey it in broad shallow flow. The intent is to reduce storm water volume and attenuate peak flows through infiltration, improve water quality through vegetative and soil filtration, and reduce the depth or size of larger basins. Additional benefit can be attained through use of amended soils, bioretention soils, gravel storage areas, underdrains, weirs, and diverse vegetation.

Seed the area with native grasses and plants that will enhance wildlife habitat and provide food sources.

PREFERRED

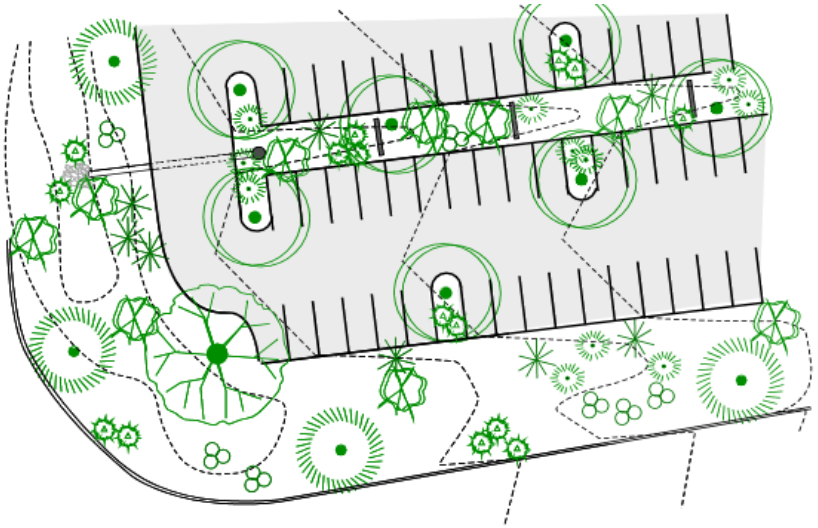
Not Preferred

PARKING LOT ISLANDS AND MEDIANS

Design parking lot islands to retain 3" – 6" of storm water except adjacent to trees.

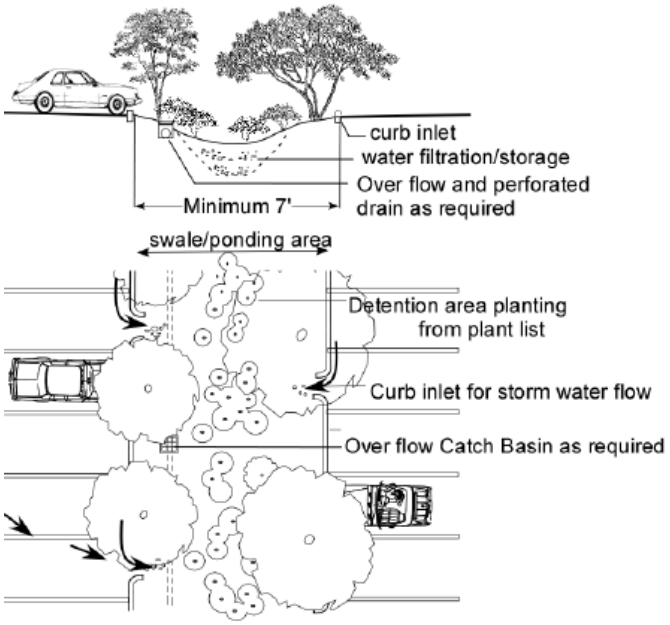
Use sheet flow or multiple inlets along a curb line to distribute storm water into landscape areas.

Grade parking lots to drain into and through landscape areas.



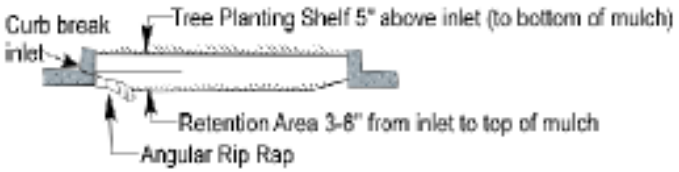
Coordinate grading with landscape plans:

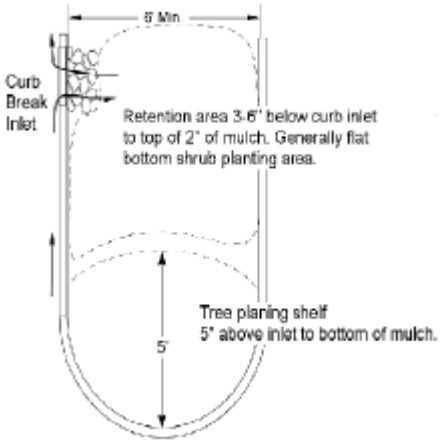
- Grade the bottom of detention areas generally flat but include some natural appearing berms or tree planting shelfs with a minimum of six (6) feet in width. Shelves within landscape islands should be 5" above the grade of the inlet or not more than 1.5 feet below the high water grade in larger basins.
- Plan on 2" of mulch for moisture retention and weed reduction, and the entire facility being landscaped.
- Do not use river rock as a ground cover or for erosion control at inlets. Use larger angular rock that has a color similar to the mulch.

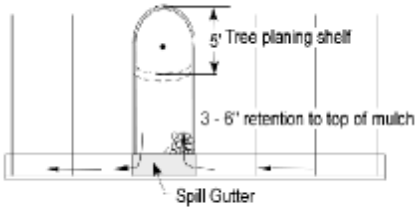


EXAMPLE PARKING LOT MEDIAN INFILTRATION AREA

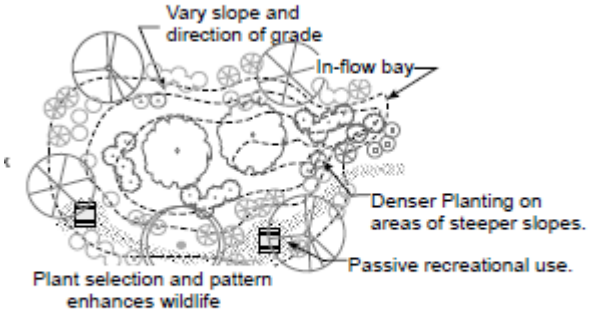
Parking Lot Landscape Islands or Medians



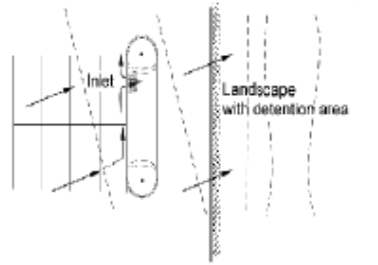




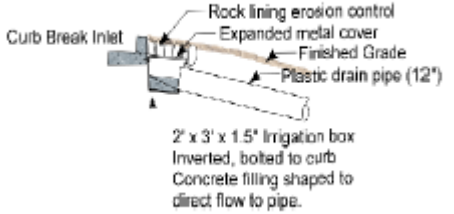
Retention Island at curb line



EXAMPLE
STORM WATER DETENTION AREA



Where vertical curb is used provide Pipe to bottom of basin



ENGINEERING & CONSTRUCTION SERVICES

Construction design shall conform to the 2009 International Codes (Building, Mechanical, Plumbing, Energy Conservation and Fire), the 2010 ADA Standards for Accessible Design, the 2003 ANSI A117.1, the 2008 National Electrical Code, and the latest revision of MAG Uniform Standard Specifications. If you have any questions regarding these codes and standards, please contact the SRPMIC Engineering and Construction Services' (ECS) Compliance Division Manager at 480-362-7742.

All construction improvement plans within the right-of-way shall conform to the Community's Supplement to Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details for Public Works Construction Revisions Through 2011. If you have any questions regarding these Specifications, please contact the SRPMIC Engineering & Construction Services at 480-362-7742

The applicant shall submit a Grading and Drainage Plan to SRPMIC ECS Department for review and approval. The design storm is the 100-year, 2-hour event (P = Precipitation amount from the 100-year 2-hour duration rainfall for specific project location. Use the isopluvial from the FCDMC Drainage Design Manual).

The applicant shall meet the first flush water quality criteria as required by the Environmental Protection Act (EPA).

The design of all storm water facilities shall ensure that the stored runoff shall be emptied completely from the facility within 36 hours after the runoff event has ended by infiltration, controlled bleed off, dry well or discharge pump to an approved facility. All dry wells to be Max Well Plus® or equal. The applicant shall indicate the method of dissipation and percolation test data to support compliance with the above. Minimum accepted dissipation rate is 0.1cfs per drywell.

Discharges shall be in compliance with 40 CFR 122, the National Pollution Discharge Elimination System (NPDES).

Any underground storage facilities shall require approval from the SRPMIC Floodplain Administrator. Contact CDD/Environmental Protection and Natural Resources as 480-362-7500.

The applicant shall provide storm water detention/retention for run-off from the half street fronting or abutting the proposed development.

If detention is provided for the project, post-development peak discharges shall not exceed pre-development peak discharges for the 2, 10, and 100-year storm events.

Grading and drainage plan shall show:

- Outfall locations and elevations for the existing and proposed improvements.
- High water elevations, clearly delineated for all detention/retention basins.
- Existing drainage patterns for the project site.
- Existing and proposed contour lines.

The maximum slope for a landscaped bank on the edge of a detention basin shall be four- to-one (4:1). The top edge of basins should vary in direction and the side slope should vary in slope and direction to create a natural appearance. Walled banks may be permitted subject to the separate wall design approval by through the design review process and meeting the structural and safety standards of the Building Code.

No retention basins are permitted within dedicated street ROW or street easements or within fourteen (14) feet of a curb or edge of

pavement of a private street except as approved within the AG zoning district.

Basins within ten (10) feet of a street ROW or within 24 feet of the curb or edge of pavement of a private street shall not exceed 18-inches in depth.

Basins between ten (10) and twenty (20) feet of a street ROW or between (24) and thirty (34) feet of the curb or edge of pavement of a private street shall not exceed twenty four (24) inches in depth.

The basin side slope shall not begin any closer than two (2) feet from the edge of any sidewalk.

Basins shall have a maximum water depth of three (3) feet to accommodate the 100 year 2 hour storm event.

Basins in excess of 0.5 acre-ft design storage and over three (3) feet in depth shall incorporate benches no narrower than ten feet (level bench width) for at least 40% of the circumference of the basin. The bench shall be at least two (2) feet higher than the basin bottom.

Public safety requirements (fences, railing, etc.) shall be installed as needed to limit public access to the basins

The maximum depth of ponded water within any parking lot is six (6) inches with the deeper portions confined to remote areas of the parking lot.

Provide positive drainage away from curbs and sidewalks adjacent to all streets.

The maximum area of the landscape setback (as defined by the Zoning Ordinance) that can include retention is 75%.

Horizontal / Vertical Datum. Use the following with regard to horizontal and vertical datum for all site/civil and topographic work.

- Horizontal: Community Project Datum (CPD) is based on the Arizona Coordinate System (ACS) (1983, Central Zone, US Survey Feet), where, XACS = (XCPD + 600,000) * 0.9998392
- YACS = (YCPD + 350,000) * 0.9998392
- Vertical: North American Vertical Datum of 1929 (NAVD 1929).

ARCHITECTURE

Buildings should:

1. Respond to the context of the site and the surrounding area,
2. Employ sustainable design concepts, and
3. Incorporate aspects that reflect the culture of the Pima and Maricopa people.

The general style might be described as contemporary/modern with a touch of the abstract that incorporates natural and rustic materials, employs functional features related to sustainably within the desert climate, and emphasizes connection to the earth, transition and human scale at the ground level.

Standard or franchise style architecture and the use of architectural gimmicks or dramatic visual contrast from neighboring structures as an attention-getter should be avoided.

CULTURAL RESPONSE

The Pima and Maricopa Architecture, *Design Inspiration* and *Cultural Design Strategies* in the *Cultural Response* section of these guidelines provide resources and concepts to draw from that may be useful in integrating aspects of the Pima and Maricopa cultures into the design of the building.

Take care not to reference cultures of other tribes of the Southwest or to use symbols that represent bad omens. Use the SRP-MIC Cultural Resources Department as a resource if necessary.

When using cultural graphics, emulate them using similar patterns or use portions of them rather than duplicating them exactly.

FENESTRATION, BUILDING SCALE AND MASS

Side and rear building facades should have a level of design detail and finish comparable to the front façade where they are visible from streets, public areas, or adjacent sites.

Avoid creating expansive blank walls visible from streets, public areas or adjacent to pedestrian areas.

Apply design concepts that add visual interest and break up the mass and scale of larger buildings such as:

- Using the appearance of smaller attached building sections.
- Incorporating different materials, color or texture in ways that define different building areas or that create a pattern proportioned to the scale of the building or wall. Patterns can be of some meaning but not be commercially associated with a business.
- Using open areas such as windows, entryways, arbors, arcades proportioned to the architectural style and to the solid areas and mass of the structure.
- Projecting or recessing entries or using offsets in the building line.
- Incorporating distinctive architectural or artistic features or vertical elements on or in front of expansive walls

- Providing architectural focal points, accents and or contextual artistic elements that reflect the Pima and Maricopa cultures or the surrounding desert. (See "Cultural Response")
- Create shade and shadow and reduce heat gain with overhangs, projections, deep set windows and doors, using overhead architectural features, such as awnings, canopies, or trellises.
- Discourage plain finish wall i.e. 100% smooth block CMU wall.
- Reflective finishes are not preferred.
- Prominent culturally represented color bands, painted accents, and striped awnings should complement and not dominate the architectural theme of the building.

In larger developments avoid creating the effect of one large scale project by allowing adequate variety and flexibility in project design guidelines while providing some consistency in the design of common elements used throughout the development to reinforce a sense of place and provide visual organization.

ROOF LINES

- Flat or low sloping roofs are preferred. Roofs with steep slopes should not be used.
- Where it fits the design style, vary parapet heights to add interest, differentiate different parts of a building or to accentuate entrances.
- Vary the roof height of the upper levels on taller buildings (higher than forty (40) feet).
- Incorporate mechanical equipment screens into the building and roof line design so they are part of the building rather than appearing added-on.

RELATIONSHIP TO BUILDING BASE AREA

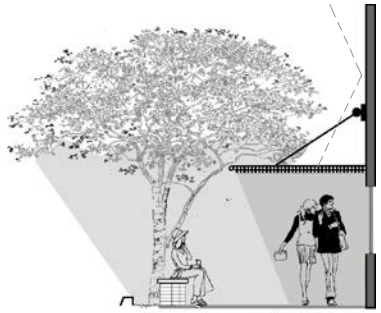
- Consider the interplay between the bottom floor façade of the building and the surrounding outdoor base area, designing them together with the building providing part of the shape and the base area supporting the use and or accenting the architecture. Relationship and design will vary depending on the use.
- Deliberately use building shape to create usable outdoor spaces adjacent to and between buildings where these spaces will support the uses in the building. For example
- Wrap buildings around an outdoor courtyard or a plaza
- Vary and use the space between buildings.
- Articulate the building wall to create useable outdoor spaces in meaningful locations.

- Create outdoor micro climates in heavily used outdoor areas and at entrances through use of shade from awnings, building articulation, deep setbacks, shade sails, arcades, and orientation.
- Adjacent to pedestrian areas use finer architectural details, features and patterns that relate to human scale.

- Provide adequate transparency in the building to allow workers to keep an eye on the outdoor area and so police can see inside and respond to criminal activity; attractive areas that are used tend to be safer than uninteresting deserted areas.
- Keep the interest of the pedestrian between entry areas, which should stand out as destinations. Avoid creation of long expanses of blank walls adjacent to walkways in shopping areas.

Anticipate and allow adequate area for base area features that will complement the building architecture and/or will expand and support the particular use:

- Use base area landscape trees to provide shade to lower story walls and windows on the east and west elevations; Add detail to walls through silhouette, shadow, or screening and softening the building mass.



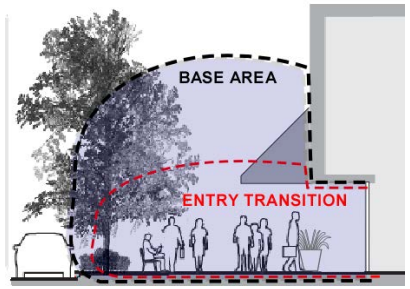
Shaded Pedestrian Areas

- Providing opportunities for window-shopping, outdoor display and sales, push cart venders, dining, recreation, or crate buffer to private areas such as private windows or outdoor patios. (See Base Area Design in Site Planning and Landscape Sections.)

ENTRY TRANSITION AREA

Primary and secondary business entrances used by customers, clients, or visitors are key locations where pedestrians relate to the building. Designs should relate to all of the human senses in these areas.

They should stand out as destinations attracting visitors to them both in freestanding buildings and along continuous walkways in multi-tenant uses such as shopping centers. Be visually distinguished through building architecture and/or by base area features. Examples include:



- Create a focal point in the architecture changing the fenestration or the building lines or materials
- Shape the entry with the building walls using a projected or recessed entry area.
- Frame entries with architectural features.
- Provide a canopy or walkway cover or changes in the design at the entrance(s).
- Change parapet or roof levels over the entry area.
- Placement of art, sculpture, or other attracting features.

Emphasize human scale through use of higher detail and a sense of movement from open space to semi-enclosure to enclosed space.

Use human scale features such as raised planters, potted plants, benches or seating areas.

Provide a smooth transition from the outdoors to inside the building.

- Change temperature by creating a microclimate through use of shade created by plants, overhang, walkway cover, portico, sail screens or other techniques.
- Transition levels of lighting from full sun to shade to interior lighting or with the appropriate level of nighttime lighting to transition from parking, walkway, and entry to the interior.
- Attract customers into the building by blurring the break between indoor and outdoor environment similar design elements inside

and outside such as floor materials, colors, patterns, lighting, and displays
- Support the use in the building with space for appropriate conveniences and features such as outdoor displays or sales areas, waiting areas, vehicle drop off and pick up areas.

COLORS, PATTERNS AND TEXTURES

Chose colors typical of the basketry or pottery of the Pima-Maricopa community, or of surrounding environment such as natural or earth tones, Red Mountain or the McDowell Mountains, the desert plants or wildlife.

Incorporate geometric patterns and textures similar to the basketry, pottery or from the surrounding environment.

Dominant colors should blend in with rather than contrast with the environment; finishes should possess low reflectivity characteristics

Brighter colors can be used as accents.

Building colors and materials on adjacent buildings may differ significantly, but should not create an incompatible contrast.

MATERIALS

Predominant exterior building materials should be of high quality and durable such as:

- Brick
- Natural materials such as stone or rammed earth.
- Integral color, sand blasted or stained textured masonry.
- Split-face or scored concrete masonry units.
- Textured tilt-up concrete panels.
- Stucco/EFIS with embossed elements or high texture.
- Metal roofs such as core tin or with non-reflective surface.
- Clear or tinted glass (energy efficient rated).
- Low mass, nonconductive trellis, canopies or shade structures.
- Predominant exterior building materials should not include the following:
- Un-textured tilt-up concrete panels.
- Plain CMU blocks (unfinished, unstained or with no color).
- Shiny architectural metals or pre-fabricated steel panels.
- Corrugated metal.
- Asphalt shingle, clay tile or concrete tile roofs.
- Highly reflective glass.
- Wood. Except treated, large dimensional in locations not exposed to the sun.





SCREENING

Where screening of mechanical equipment, bay doors and other utilitarian features is part of the building integrate it into the building design so they appear as a part of the architecture rather than an unrelated add on, effectively concealing the fact that they are screens.

Alternatively use screening as creative artistic accents that do not appear to be a screen as a primary purpose.

Apply the same level of detail and design to screens as to the other parts of the building.

UTILITARIAN ELEMENTS

Locate ground-mounted equipment where they are not visible from a street, preferably away from public areas or screen them from view, buffer noise, or heat (*see screening*).

Mounting equipment on the roof, within architectural elements as screening, is preferred over mounting them on the ground.

Integrate exposed equipment on exterior walls into the architectural design including for example: wall or window mounted HVAC equipment, ductwork, elevators, fire escapes or exterior stairs, equipment used to access windows for maintenance, communications disks or antennas, conveyors, piping, vents or exhaust vents.

Underground vacuum tubes or internalize them into a structure.

Internalize roof drain elements within the building or within an architectural feature.

Integrate service doors into the architecture using matching color, deep insets and/or provide screening elements.

Design canopies over ATMs or drive throughs as an integral part of the building architecture.

Consider possible opportunities to creatively express context in utilitarian elements.

ACCESSORY STRUCTURES

Design parking covers, refuse enclosures and other accessory structures to be compatible with the architecture of the primary building.

The forms, colors, textures and materials used on accessory structures should be the same or be complimentary to the main building.

Locate utilitarian structures in less visible areas or design them to blend in rather than stand out. Do not place them in parking lot landscape islands.

SUSTAINABILITY

The use of solar collectors is encouraged. Multi-purpose use of solar collectors, such as shading parking spaces, windows or rooftops, is preferred to single purpose use.

Apply concepts from the International Energy Conservation Code (IECC) and/or LEEDs rating systems where possible.

- Use day lighting in buildings.
- Use energy efficient lighting, HVAC and other equipment and energy management strategies/controls throughout the project.
- Use energy efficient materials including in doors and windows.
- Use active or passive solar cooling or heating.

Apply low impact storm water management and water harvesting techniques directing runoff from roofs and hardscapes into landscape areas (*see Grading and Drainage).*

REDUCE HEAT GAIN

Orient the longest axis of a building within 15 degrees of east and west to provide less exposure to the low morning and afternoon sun on the smaller east and west elevations minimizing heat gain.

Select light colored materials. Surfaces of pedestrian areas should have a Solar Reflective Index 35 or higher, roof surfaces should have a solar reflectance of 78 or higher for roofs sloped less than 2:12 and 29 for steeper roofs.

Use smaller or fewer windows on the east and west elevations and/or use of methods that reduce their direct exposure to the sun (see Windows).

Shade windows and walls on south, east, and west (see windows).



On lower stories of buildings and store fronts use trees, architectural features or an arcade (see Base Area).

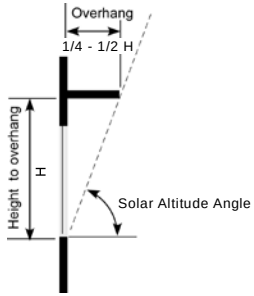
Use building articulation and setbacks to create shaded areas, walls and windows.

Shade hardscape and parking areas with trees and/or light colored materials and minimize impervious surface area to the extent possible.

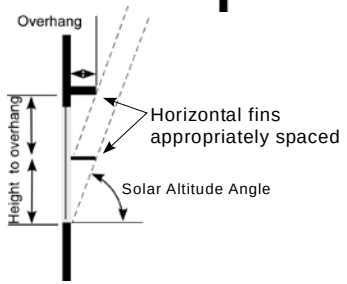
WINDOWS

SOUTHERLY FACING WINDOWS

Horizontal shading devices should extend at least ¼ foot horizontally for each foot of height they are above the window or area to be shaded. (This provides shade approximately between11:30 am and 12:30 pm from mid-May through mid-July.)



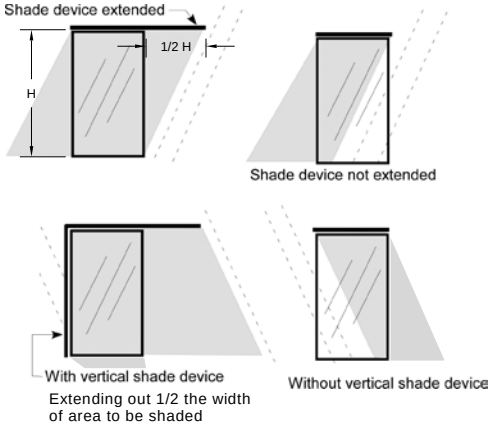
Increasing the depth and width of the overhang extends the time and the number of months shade is provided and increased its effectiveness.



Using ½ foot overhang per foot of height to be shaded is highly recommended on windows that do not have a solar heat gain coefficient of 0.4 or lower.

The multiple smaller horizontal or vertical shading devices can be appropriately spaced to shade larger windows.

Extending a horizontal shading device ½ the vertical height from the window sill on a south facing window or providing vertical shading devices extends the length of time shade is provided as the sun moves across the sky.



Use awnings over lower and upper story windows.

The addition of vertical shade, can reduce afternoon heat gain particularly on the west side of a southerly facing windows

EAST OR WESTERLY FACING WINDOWS

Use widows with solar heat gain coefficient of 0.40 or lower.

Minimize exposure to the summer sun on windows on the south, east and west sides of buildings.

On lower levels use of trees, trellis, building overhangs, arcades or covered pedestrian areas.

On upper levels use awnings, external louvers, exterior shade screens.

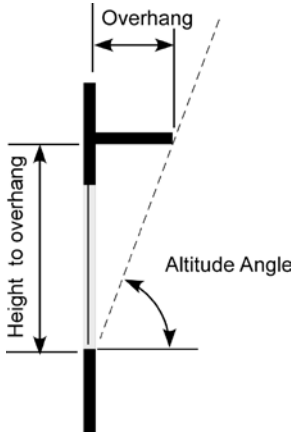
OUTDOOR LIGHTING

Utilize adequate, uniform, and glare-free lighting to avoid uneven light distribution, harsh shadows, and light spillage.

Only use fixtures that are "dark sky" compliant.

SOLAR RESOURCES

The minimum horizontal overhang of 1/4 foot per foot of vertical height above the area to be shaded required in the zoning ordinance provides full shade for south facing windows during times shown on above the ¼ foot per foot offset line on the adjacent chart. The amount of shade will vary for windows facing other than south.

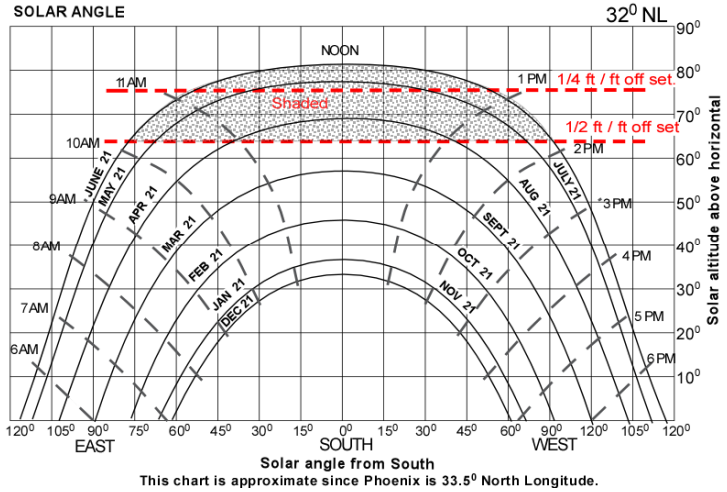


Increasing the overhang to 1/2 foot per foot of height above the area desired to be shaded can provide full shade during our warmer months as shown above the ½ foot per foot line in the adjacent chart and is highly suggested and should be required for windows with a solar heat gain coefficient of more than 0.4.

Vertical shading devices that extend out half the horizontal width of the window or of the area to be shaded to significantly increase the amount of time the area is shaded.

A good reference for determining effective window shading solutions can be found at the Sustainable By Design web site: http://www.susdesign.com/tools.php

At this site Use 33.5^0 NL for latitude of Phoenix.



LANDSCAPING

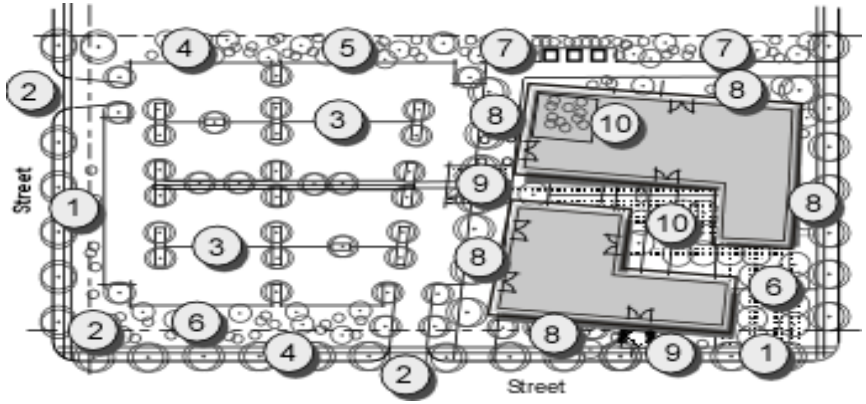
GENERAL DESIGN CONCEPTS

Design streetscapes using plants native to the Sonoran desert creating an informal natural appearing style that reflects an enhanced Sonoran Desert character. Moving away from the street and into the site and within building base areas the plant pallet may transition to plants native to other deserts. A broader pallet of plants is permitted within court yards and interior areas. Use of xeric plants in these areas is highly encouraged. Other plants may also be used as accents in containers at building entrances.

- Landscaping within streetscapes of arterial and collector streets, street medians, drainage swales, detention basins, buffer areas, passive recreation, and open space areas should reflect informal patterns found in naturally occurring Sonoran Desert plant communities (enhanced in density and quality).
- Plants arranged in formal even spaced patterns or pruned into unnatural shapes is inconsistent with the goal of creating a natural appearance.
- Always select and locate plants where they can grow to their mature natural form and will not require shearing, constant or heavy trimming, or interfere with utilities, lighting, structures, walkways, vehicles, or views.
- Capitalize on the various blooming seasons available.
- Create smooth transitions in landscapes between adjacent sites to avoid stark contrast.
- Landscaping around buildings and within useable outdoor areas is a priority.

LOCATION OF PLANTS

Transition from Sonoran Desert plants at the streetscape to plants from other southwest deserts in the interior. The SRP-MIC Plant List suggests the predominant plant palette preferred for the various areas illustrated in the following sketch.



1. ***Streetscape / Medians*:** Only use plants indigenous to the Sonoran Desert planted in an informal natural pattern. A minimum number of Saguaro and Ocotillo are required. Include swaths of perennial wild flowers.
2. ***Street Intersections / Major Entrances*:** Accentuate with larger specimen plants from Sonoran Desert, sculptural features of natural materials, swaths of wild flowers, colorful shrubs.
3. ***Parking Islands, Medians:*** Use Sonoran and plants for deserts of the southwest. Select canopy trees to provide shade over parking lots and pedestrian ways and shrubs with natural growth patterns under 4' that will not require constant pruning to provide color and screening. Include perennial wildflowers in areas adjacent to base areas and pedestrian paths.

4. ***Improved Open Space, Wildlife Habitat Enhancement*:** Sonoran native plant species and select plants that provide food and shelter for indigenous wildlife, native grasses and seed plants.
5. ***Drainage Swales/Embankments*:** Create a natural appearance with trees, shrubs, and grasses from plant species native to the Sonoran and other southwest deserts to stabilize slopes, include selections from wildlife habitat enhancement. In basin inlets and areas subject to erosion use angular rock similar to the color of adjacent mulch. Rock should be large enough to withstand flows.
6. ***Detention Area Bottom:*** Create a natural appearance with selected plants that can tolerate occasional short term flooding. Design for multi-purpose with detention being secondary. Use pervious surfaces. Do not use river rock as a ground cover, only use sparingly for accent.
7. ***Landscape Screens / Buffers:*** Mostly Sonoran desert species, some species from other Southwest deserts. Only use Sonoran species adjacent to AR Residential zoning and within streetscapes.
8. ***Building Base Area*:** Sonoran desert and species of other Southwest deserts, other plants as accents in contained areas.
9. ***Plazas / Entry Transition*:** Accentuate with colorful Sonoran and species from other deserts, and non-xeric plants in contained areas as accents.
10. ***Internal Courtyards, Pedestrian Malls, and Roof Gardens*:** Application of xeriscape concepts using colorful xeric and non-xeric plants in contained areas. Use turf where it will be functional and used for an activity.

PREFERRED

NOT PREFERRED

Select plants to take advantage of the various Sonoran Desert bloom times which occur in March to May, late June to September and wildflowers that also bloom in October and November

LANDSCAPE SETBACK AT MAJOR STREET INTERSECTIONS

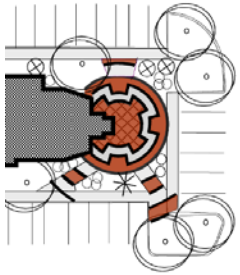
A larger landscape setback is required at major intersections allowing for use of sculptures and public art, natural features, larger specimen plants, etc.

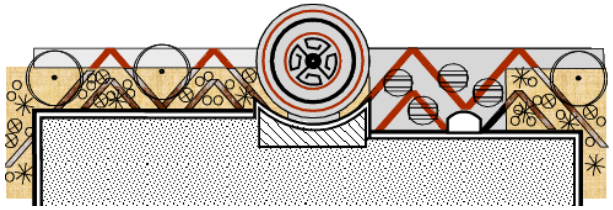
EXPRESS CULTURAL ASPECTS IN THE LANDSCAPE DESIGN

Integrate appropriate patterns colors and artistry relevant to the historic cultures of the Akimel O'odham "river people" (Pima) and Xalychidom Pipaash "people who live toward the water" (Maricopa). and those of the current Salt River Pima - Maricopa Indian Community into the hardscape in places where they can best be appreciated by:

- Adding sculptural features and public art., patterned low walls, in places where they can best be appreciated.
- Creating bold patterns in hardscapes, walkways and ground covers using different colors, textures and/or materials.
- Creating themes that have some relevant meaning in specific areas.
- Using natural materials or materials with a natural appearance.

Cultural features and patterns in streetscape, base area hardscape and landscape ground covers.





SUSTAINABILITY

In addition to using Sonoran and Xeric plants, use landscaping to increase sustainability by applying the following concepts:

LOW IMPACT DESIGN

Incorporate LID concepts like water harvesting, in the grading plan and the design of swales and detention basins. See Storm Water Management for details.

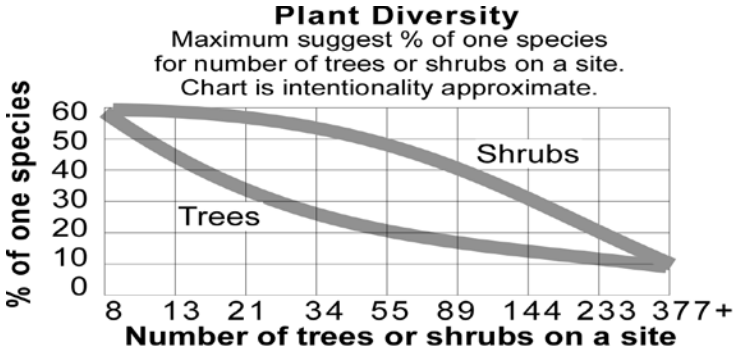
- Coordinate closely with the drainage plan, anticipate use of low impact design concepts that direct storm water into landscape areas for detention and infiltration throughout the site close to where it is generated reducing the need for larger detention areas.
- Most landscape areas will be used to harvest storm water from nearby impervious areas and should be graded to retain the storm water that can percolate into the soil within 36 hours.
- Grade all landscape areas to retain rather than shed rain water.
- Surface drainage through landscapes will be highly preferred instead of piping or running water in gutters.
- Avoid placing trees in the lowest part of a detention area. Use planting shelfs and embankments.
- Only use turf where it is required for the function of the area.
- Avoid water features with high evaporation like those that spray water into the air. Artificial water features should consider the extremely important role rivers played in supplying water to meet the critical needs of the Pima and Maricopa.
- Water features should evoke images of the Salt or Verde River and/or the natural native vegetation found along their edges

PLANT DIVERSITY

Diversifying plant species used in the landscape will create a more sustainable and biologically diverse environment. Diversify the plant species use in the landscape to:

- Create a landscape that is less susceptible to devastation by a disease or changes in climate.
- Support a more diverse ecosystem, encouraging beneficial birds, insects which feed on plant pests typical of the area.
- Create a more natural looking landscape with greater seasonal variety.

The suggested minimum diversity of plant species is shown in the chart. The chart is intended to be approximate.



Example:
On a site with 60 trees not more than 20% of the trees should be the same species.
On a site with 200 shrubs, not more than 25% of the shrubs should be the same species.
More diversity is generally better than less.

SHADE

Extensive use of shade is a key response to the desert environment reducing heat gain, glare and local ambient temperatures and conserving energy through effective placement.

- Use shade to add to the sense of place by creating comfortable outdoor environments particularly around buildings and outdoor activity areas.

- Shade walkways, seating areas, parking lots and other hard surface areas creating more inviting and comfortable outdoor environments, particularly around buildings
- Place trees where they can provide the most usable shade based on the orientation and exposure to the sun. (I.E. south, east or west of the area to be shaded.)
- Conserve energy by using trees or vines and trellis to shade lower story windows and walls particularly on the east and west sides of buildings.
- Use ground cover to reduce heat, dust and improve air quality

USE LANDSCAPING TO ENHANCE ARCHITECTURE

- Moderate building mass and add interest to plain wall surfaces.
- Accentuate building entrances.
- Add interest to pedestrian areas.
- Soften the transition from open areas to enclosed buildings at building entry ways.
- Shade bottom story windows and walls.

COORDINATE LANDSCAPING WITH SITE PLANNING

Use landscaping and landscape features to:

- Help identify and enhance site and building entryways.
- Enhance street intersections.
- Create a sense of enclosure along base areas and over gathering areas with landscape borders and overhead canopy.
- Frame distant views and create on site focal points of drives and walkways.

BUFFERING AND SCREENING

Buffer potentially incompatible adjacent land uses.

Screen the view of less attractive areas on and off site from view of public areas.

Break up large parking lots with trees and shrubs in landscape medians and islands.

VISUAL CLEAR ZONES AT INTERSECTIONS AND DRIVEWAYS

Select plants within clear visibility zones and traffic safety triangles that have a natural growth pattern that does not interfere with the clear visibility zone. Use shrubs with a natural growth height of less than thirty (30) inches and trees that have a branching pattern above seven (7) feet. Plants that do not conform to these standards should not be used in these areas. Their need for continuous sheering is incompatible with the desired informal natural appearance of streetscapes.

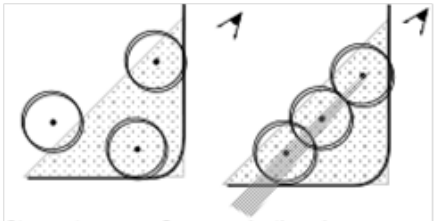
Arrange trees and saguaro cactus within the clear visibility zone in a staggered pattern so they will not align to appear like a fence or create a solid visual block as viewed through the clear visibility zone.

MAINTENANCE

Protect the substantial investment in landscaping by helping it thrive through proper maintenance. Fully benefit from improved aesthetics and a more hospitable environment it creates.

Proper maintenance is critical to achieving the desired natural appearance of the landscape and maximizing the use of color.

Always select and place plants where they can grow to their mature natural form and will not require shearing, constant or heavy trimming, or interfere with utilities, lighting, structures, walkways, vehicles, views etc.



Stager trees or Saguaro in the clear zone so they will not align to create a solid wall effect blocking more than 1 foot width.

Shearing shrubs into unnatural shapes and over pruning trees are prohibited by the zoning ordinance.

Maintenance should balance aesthetic values with the needs of wildlife. For example not pruning at a time when this would prevent plants from blooming or going to seed when these are used by wildlife.

Improper maintenance, too typical of landscapes, shown in the left photo completely defeats the design intent shown on the photo on the right! Get the most out of the investment in landscaping through proper maintenance.

Focus maintenance on providing what is needed for good plant health rather than on improper and excessive pruning of plants shaping them into unnatural shapes.

Water deeply and less frequently to train roots to grow deeper and into a larger area of soil that stores the water. Deeper roots provide trees support needed to resist wind and helps make plants more drought tolerant.

Prevent compacting the soil around trees during the construction of paved surfaces. Loosen the soil to a depth of 18 inches before planting.

Avoid underground utilities so they do not conflict with root space.

Provide trees with an adequate area of soil exposed to the surface, a soil mixture that hasn't been compacted and adequate space to grow into. When space is limited obtain a healthy soil volume by providing structural soils, "silva cells" under sidewalks or used porous surfaces like pavers to expand root zones.

BASIN LANDSCAPE IMPROVEMENTS

See the Storm Water Management section) for details on basin design and the SRP-MIC Plant List in these design guidelines for plants which are best adapted for placement in drainage swales, detention basin slopes or basin bottom ponding areas.

Fully landscape drainage basins, including the ponding areas, and embankments with trees, shrubs, ground covers and grasses appropriate for area.

Ground covers

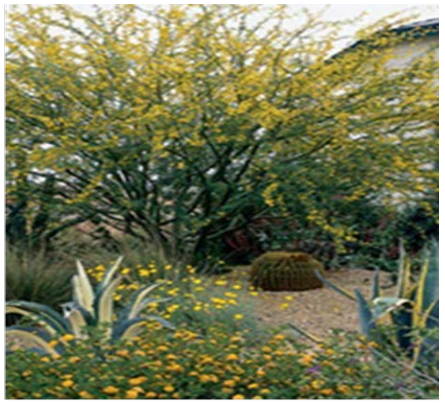
- Specify the type and depth of ground covers in the approved final landscape plan.

- Native desert top soil seeded with low growing native grasses may be an acceptable cover when approved through the design review process.
- River rock may be used sparingly as an accent, but used as for erosion control or as a ground cover where it will be visible from a street, adjacent site, or public area.
- Slopes of one (1) foot vertical per four (4) foot or more horizontal may be covered with inorganic ground covers such as decomposed granite.

Minimize the visual impact of basin inflow and outflow facilities.







Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Sonoran Desert Plants (Lower Colorado Valley and Arizonal Upland Subdivisions)											
TREES											
Acacia constricta	Whitethorn	*	*	*							
Acacia greggii	Cat Claw	*	*	*							
Canotia holocantha	Crucifixion Thorn	*								*	*
Celtis reticulata	Net-Leaf Hackberry								*	*	*
Cercidium (Parkinsonia)	Blue Palo Verde	*	*	*	*	*	*	*	*	*	*
Cercidium (Parkinsonia)	Foothill Palo Verde	*	*	*		*	*	*	*	*	*
Chilopsis linearis	Desert Willow	*	*	*		*	*	*	*	*	*
Fraxinus greggii	Little Leaf Ash	*		*							*
Fraxinus velutina	Rio Grande Ash	*									*
Juglans Major	Arizona Walnut	*		*							*
Olneya tesota	Ironwood	*	*	*	*	*	*	*	*	*	*
Platanus wrightii	Arizona Sycamore	*									
Populus fremontii	Cottonwood	*	*	*							
Prosopis glandulosa v.	Western Honey	*	*	*	*	*	*	*	*	*	*
Prosopis pubescens	Screwbean Mesquite	*	*	*	*	*	*	*	*	*	*
Prosopis velutina	Arizona Mesquite	*	*	*	*	*	*	*	*	*	*
Sambucus nigra	American Black	*			*						

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
SUCCULENTS / CACTI											
Agave deserti	Desert Agave	*	*			*	*		*	*	*
Agave murpheyi	Murphey's Agave	*	*			*	*		*	*	*
Agave palmeri	Palmer Agave	*	*			*	*		*	*	*
Carnegiea gigantea	Saguaro	*	*			*	*		*	*	*
Cylindropuntia bigelovii	Teddy Bear Cholla	*	*			*	*		*	*	*
Dasylirion wheeleri	Desert Spoon	*	*			*	*		*	*	*
Echinocereus engelmannii	Hedgehog Cactus	*	*			*	*		*	*	*
Ferocactus cylindraceus	Compass Barrel	*	*			*	*		*	*	*
Ferocactus wislizenii	Fishhook Barrel	*	*			*	*		*	*	*
Fouquieria splendens	Ocotillo	*	*			*	*		*	*	*
Mammillaria microcarpa	Fishhook Cactus	*	*			*	*		*	*	*
Opuntia acanthocarpa	Buckhorn Cholla	*	*			*	*		*	*	*
Opuntia basilaris	Beaver Tail Cactus	*	*			*	*		*	*	*
Opuntia engelmannii	Engelmann's Prickly-	*	*			*	*		*	*	*
Opuntia fulgida	Chainfruit Cholla	*	*			*	*		*	*	*
Opuntia leptocaulis	Desert Christmas	*	*			*	*		*	*	*
Opuntia phaecantha	Sprawling Prickly-	*	*			*	*		*	*	*
Opuntia versicolor	Staghorn Cholla	*	*			*	*		*	*	*
Peniocereus greggii	Desert Night-	*	*			*	*		*	*	*
Yucca baccata	Banana Yucca	*	*			*	*		*	*	*
Yucca elata	Soaptree Yucca	*	*			*	*		*	*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
SHRUBS											
Ambrosia deltoidea	Triangle-leaf Bursage	*	*	*		*	*	*	*	*	*
Ambrosia dumosa	White Bursage	*	*	*		*	*	*	*	*	*
Anisacanthus therberi	Desert Honeysuckle	*	*	*		*	*	*	*	*	*
Atriplex canescens	Fourwing Saltbush	*	*	*	*	*	*	*	*	*	*
Atriplex lentiformis	Quailbrush	*			*			*	*	*	*
Atriplex polycarpa	Desert Saltbush	*						*	*	*	*
Berberis haematocarpa	Red Barberry		*		*	*	*	*	*	*	*
Calliandra eriophylla	Fairy Duster	*	*	*		*	*	*	*	*	*
Cassia covesii	Desert Senna	*	*			*		*	*	*	*
Celtis pallida	Desert Hackberry	*	*	*							
Cercis occidentalis	Western Redbud									*	*
Chrysactinia mexicana	Damianita	*	*			*			*	*	*
Dalea pulchra	Bush Dalea	*	*			*	*	*	*	*	*
Dodonaea viscosa	Hopbush	*	*	*	*	*	*	*	*	*	*
Encelia farinosa	Brittlebush	*	*			*	*	*	*	*	*
Encelia frutescens	Green Brittlebush	*	*			*	*	*	*	*	*
Ephedra aspera	Mormon Tea	*	*			*	*	*	*	*	*
Ericameria laricifolia	Turpentine Bush	*	*			*	*	*	*	*	*
Eriogonum fasciculatum	Flat-top Buckwheat	*	*			*	*	*	*	*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Gutierrezia sarothrae	Snakeweed	*	*		*	*	*	*	*	*	*
Hyptis emoryi	Desert Lavender	*	*		*	*	*		*	*	*
Justicia californica	Chuparosa	*	*	*		*	*	*	*	*	*
Larrea tridentata	Creosote Bush	*	*	*	*	*	*		*	*	*
Lotus rigidus	Deer Vetch	*	*			*	*	*	*	*	*
Lycium andersonii	Wolfberry	*	*		*		*		*	*	*
Lycium fremontii	Fremont Wolfberry	*	*		*		*		*	*	*
Pluchea sericea	Arrow Weed	*	*	*	*		*		*	*	*
Simmondsia chinensis	Jojoba	*	*		*	*	*		*	*	*
Vauquelinia californica	Arizona Rosewood	*			*				*	*	*
Verbena goodingii	Verbena	*	*	*		*	*	*	*	*	*
Vigueria deltoidea	Goldeneye	*	*			*		*	*	*	*
Ziziphus obtusifolia	Gray Thorn	*	*	*	*		*	*	*	*	*
ANNUALS / PERENNIALS / VINES											
Abronia villosa	Sand Verbena	*	*			*	*	*	*	*	
Amsinckia intermedia	Fiddleneck	*	*			*	*	*	*	*	
Baileya multiradiata	Desert Marigold	*	*			*	*	*	*	*	
Cucurbita digitata	Coyote Gourd	*	*			*	*	*	*	*	
Datura wrightii	Sacred Datura	*	*	*		*	*	*	*	*	
Dichelostemma pulchellum	Desert Hyacinth	*	*			*	*	*	*	*	
Dyssodia pentachaeta	Dogweed/Golden	*	*			*		*	*	*	
Erigeron divergens	Spreading Fleabane	*	*			*	*	*	*	*	

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Eriophyllum lanosum	Woolly Daisy	*	*			*	*	*	*	*	
Eschscholzia mexicana	Mexican Gold Poppy	*	*			*	*	*	*	*	
Gaillardia aristada	Arizona Blanket	*	*			*	*	*	*	*	
Gilia latifolia	Broadleaf Gilia	*	*	*		*	*	*	*	*	
Janusia gracilis	Slender Janusia Vine	*	*	*		*	*		*	*	
Lasthenia chrysostoma	Goldfields	*	*			*		*	*	*	
Lesquerella gordoni	Bladderpod Mustard	*	*	*		*	*	*	*	*	
Lupinus sparsiflorus	Desert Lupine	*	*			*	*	*	*	*	
Machaeranthera	Purple Aster	*	*			*	*	*	*	*	
Melampodium	Blackfoot Daisy	*	*			*		*	*	*	
Orthocarpus purpurascens	Owl's Clover	*	*			*		*	*	*	
Penstemon eatoni	Firecracker	*	*			*		*	*	*	
Penstemon parryi	Parry's Penstemon	*	*			*	*	*	*	*	
Penstemon	Arizona Penstemon	*	*			*	*	*	*	*	
Phacelia campanularia	Desert Bluebell	*	*			*		*	*	*	
Phacelia crenulata	Scorpionweed	*	*	*		*	*	*	*	*	
Plantago purshii	Indian Wheat	*	*	*		*	*	*	*	*	
Platystemon californicus	Cream Cups	*	*			*		*	*	*	
Proboscidea parviflora	Devil's Claw	*	*	*		*	*	*	*	*	
Psilostrophe cooperi	PaperFlower	*	*			*	*	*	*	*	

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Rafinesquia neomexicana	Desert Chicory	*	*	*		*	*	*	*	*	
Salvia columbariae	Desert Chia	*	*			*	*	*	*	*	
Sphaeralcea ambigua	Desert Globemallow	*	*	*		*	*	*	*	*	
Stephanomeria pauciflora	Desert Straw	*	*			*	*	*	*	*	
Trixis california	Trixis	*	*			*	*	*	*	*	
GRASSES											
Aristida purpurea	Purple Threeawn	*	*			*	*	*	*	*	*
Bouteloua aristidoides	Needle Grama	*	*			*	*	*	*	*	*
Bouteloua curtipendual	Sideoats Grama	*				*		*	*	*	*
Erioneuron pulchellum	Fluffgrass	*	*			*	*	*	*	*	*
Southwest Desert Plants (Great Basin, Chihuhuan and Mojave Deserts)											
TREES											
Acacia berlandieri	Guajillo								*	*	*
Acacia farnesiana	Sweet Acacia					*			*	*	*
Acacia schaffneri	Twisted Acacia					*				*	*
Acacia willardiana	Palo Blanco								*	*	*
Bauhinia lunarioides	Anacacho Orchid								*	*	*
Caesalpinia cacalaco	Cascalote									*	*
Chitalpa x Tashkentensis	Chitalpa									*	*
Cordia boissieri	Anachuita								*	*	*
Eysenhardtia orthocarpa	Kidneywood									*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Lysiloma microphylla	Desert Fern								*	*	*
Parkinsonia hybrid 'Desert	Desert Museum					*		*	*	*	*
Parkinsonia praecox	Palo Brea					*					*
Pithecellobium flexicaule	Texas Ebony								*	*	*
Pithecellobium pallens	Tenaza								*	*	*
Prosopis seedless hybrid	Seedless Hybrid					*		*	*	*	*
Prosopis thornless hybrid	Thornless Hybrid					*		*	*	*	*
SUCCULENTS / CACTI											
Agave colorata	Mescal Ceniza								*	*	*
Agave lechugilla	Lechugilla								*	*	*
Agave lophantha	Holly Agave								*	*	*
Agave ocahui	Ocahui Agave								*	*	*
Agave parryi	Parry's Agave								*	*	*
Agave victoriae-reginae	Queen Victoria								*	*	*
Agave weberi	Weber Agave								*	*	*
Aloe sp.	Aloe species								*	*	*
Dasylirion acrotriche	Green Desert Spoon							*	*	*	*
Dasylirion longissumum	Mexican Grass Tree								*	*	*
Echinocactus grusonii	Golden Barrel Cactus								*	*	*
Euphorbia antisyphilitica	Candelia								*	*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Nolina microcarpa	Bear Grass							*	*	*	*
Opuntia violaceae	Purple Prickly Pear								*	*	*
Pedilanthus macrocarpus	Lady Slipper								*	*	*
Stenocereus thurberi	Organ Pipe								*	*	*
Yucca vallida	Tree Yucca								*	*	*
Yucca whipplei	Our lord's candle								*	*	*
SHRUBS / BUSHES											
Abutilon palmeri	Superstition Mallow								*	*	*
Aloysia gratissima	Bee Brush								*	*	*
Anisacanthus quadrifidus v.	Mexican Fire								*	*	*
Asclepias subulata	Desert Milkweed	*						*	*	*	*
Baccharis hybrid	Thompson Baccharis							*	*	*	*
Berberis trifoliolata	Barberry										*
Bougainvillea spectabilis	Bouganinvillea										*
Buddleia marrubifolia	Woolly Butterfly Bush										*
Caesalpinia gilliesii	Yellow Bird of								*	*	*
Caesalpinia mexicana	Mexican Bird of								*	*	*
Calliandra californica	Red Baja Fairy Duster							*	*	*	*
Calliandra peninsularis	La Paz Fairy Duster								*	*	*
Cordia boissieri	Texas Olive				*						*
Cordia parviflora	Little-leaf Cordia				*						*
Dalea capitata	Sierra Gold							*	*	*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Dalea frutescens	Sierra Negra							*	*	*	*
Dalea purpurea	Purple Prairie Clover							*	*	*	*
Dalea versicolor v. sessilis	Weeping Dalea							*	*	*	*
Dalea wislizenii	Wislizenii's Dalea							*	*	*	*
Ephedra nevadensis	Desert Tea								*	*	*
Euphorbia antisyphilitica	Candelilla								*	*	*
Gossypium harknessii	San Marcos Hibiscus								*	*	*
Guaiacum coulteri	Guayacan								*	*	*
Hamelia patens	Firecracker Bush								*	*	*
Hesperaloe funifera	Giant Hesperaloe								*	*	*
Hesperaloe parviflora	Red Yucca								*	*	*
Justicia candicans	Red Justicia								*	*	*
Justicia spicigera	Mexican								*	*	*
Leucophyllum candidum	Texas Silverleaf				*				*	*	*
Leucophyllum frutescens	Texas Ranger				*				*	*	*
Leucophyllum frutescens	Green Cloud Texas				*				*	*	*
Leucophyllum laevigatum	Chihuahuan Sage				*				*	*	*
Leucophyllum langmaniae	Rio Bravo Sage				*				*	*	*
Lycium brevipes	Mexican Wolfberry				*				*	*	*
Maytenus phyllantboides	Mangle Dulce				*					*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Plumbago scandens	White plumbago									*	*
Rhus ovata	Sugar Bush									*	*
Ruellia californica	Sonoran Desert								*	*	*
Ruellia peninsularis	Desert Ruellia							*	*	*	*
Salvia chamaedryoides	Blue Chihuahuan							*	*	*	*
Salvia clevelandii	Cleveland Sage							*	*	*	*
Salvia greggii	Autumn Sage								*	*	*
Salvia lyciodides	Blue Canyon Sage								*	*	*
Senna wislizenii	Shrubby Senna				*					*	*
Sophora secundiflora	Texas Mountain				*					*	*
Tecoma stans	Yellow Bells									*	*
Zaushneria latifolia	Hummingbird							*	*	*	*
ANNUALS / PERENNIALS / VINES											
Anemopsis californica	Yerba Mansa								*	*	*
Antigonon leptopus 'Baja	Queen's Wreath								*	*	*
Aquilegia chrysantha	Golden Columbine								*	*	
Baccharis hybrid	Trailing Desert Broom										*
Berlandieri lyrata	Chocolate Flower								*	*	
Callaeum liliacaena	Purple Orchid Vine								*	*	*
Callaeum macropterum	Yellow Orchid Vine								*	*	*
Calylophys hartwegii v.	Sundrops								*	*	
Dalea greggii	Trailing Indigo Bush								*	*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Euphorbia rigida	Gopher Plant									*	*
Hardenbergia violacea	Lilac Vine										*
Oenothera caespitosa	White Evening								*	*	*
Oenothera stubbei	Saltillo Primrose									*	*
Macfadyena unguis-cati	Cat Claw Vine										*
Mascagnia macroptera	Yellow Orchid Vine										*
Merremia aurea	Yuca Vine										*
Mirabilis californica	Wishbone Bush								*	*	*
Penstemon palmeri	Palmer's Penstemon							*	*	*	
Ruellia brittoniana "Katie"	Katie Ruellia									*	*
Tetraneuris acaulis	Angelita Daisy								*	*	*
Thymophylla pentachaeta	Golden Fleece								*	*	
Wedelia trilobata	Yellow Dot									*	
Zinnia acerosa	Desert Zinnia								*	*	
Zinnia grandiflora	Rocky Mountain								*	*	
GRASSES											
Bouteloua gracilis	Blue Grama			*					*	*	*
Muhlenbergia capillaris	Pink Muhly										
Muhlenbergia dumosa	Bamboo Muhly								*	*	*
Muhlenbergia porteri	Bush Muhly								*	*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Muhlenbergia rigens	Deer Grass							*	*	*	*
Muhlenbergia rigida	Bush Muhly "Nashville"								*	*	*
Stipa tenuissima	Mexican Thread									*	*
Plants from Other Deserts of the World											
Selection of Trees, Shrubs, Perennials & Annuals										*	*
Non-Native Bedding Plants and Annuals											
Annuals										*	*
Traditional and Cultivated Plants											
Ambrosia confertiflora	Slim Leaved Bursage									*	*
Ambrosia ambrosiaides	Canyon Ragweed									*	*
Capsicum annuum L.	Chile Tepin									*	*
Citrullus vulgaris	Watermelon									*	*
Cylindropunitia spinosoir	Cane Cholla									*	*
Juniperus monosperma	One-seed Juniper									*	*
Krameria garayi	Littleleaf Ratany									*	*
Mimosa biuncifera	Mimosa									*	*
Morus mycrophylla	Texas Mulberry									*	*
Opuntia arbuscula	Pencil Cholla									*	*
Phaseolus acutifolius	Tepary Bean									*	*
Sambucus mexicana	Desert Elderberry									*	*
Zea Mays	Corn									*	*

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Prohibited Plants											
Acacia abyssinica	Ethiopian Acacia										
Acacia aneura	Mulga										
Acacia craspedocarpa	Leather Leaf Acacia										
Acacia salicina	Willow Acacia										
Acacia stenophylla	Shoestring Acacia										
Baccharis sarothroides	Desert Broom										
Bougainvillea 'La Jolla'	Bouganinvillea										
Caesalpinia pulcherrima	Red Bird of Paradise										
Chamaecyparis	False Cypress										
Citrus	Citrus										
Convolvulus cneorum	Bush Morning Glory										
Cupressus	Cypress										
Cynodon dactylon	Bermuda Grass										
Dalbergia sissoo	Sissoo Tree										
Eucalyptus sp.	Eucalyptus										
Juniperus spp.	Juniper or Cedar										
Lantana montevidensis	Trailing Lantana										
Lantana 'New gold'	Yellow Lantana										
Morus	Mulberry										

Plant Lists		Landscape Type / Area									
		1	2	3	4	5	6	7	8	9	10
		Wildlife Habitat Enhancement	Drainage Swales Detention Basin Slopes	Detention Basin Bottoms	Landscape Screen	Streetscape	Street Intersections, Major Entry Feature	Parking Lot Islands & Medians	Building Base Area	Plaza, Building Entry Transition	Interior Courtyards, Roof Gardens
Nerium oleander	Oleander										
Olea europaea	Olive										
Palmae, Aarecaceae, or	Palm Trees										
Parkinsonia aculeatra	Mexican Palo Verde										
Pennisetum setaceum	Fountain Grass										
Pinus	Pine										
Pistacia x 'Red Push'	Red Push Pistache										
Prosopis alba	Argentine Mesquite										
Prosopis chilensis	Chilean Mesquite										
Prosopis juliflora	Mexican Mesquite										
Punica granatum	Pomegranate										
Rhus lancea	African Sumac										
Senna artemisioides	Feathery Cassia										

RESIDENTIAL DEVELOPMENT

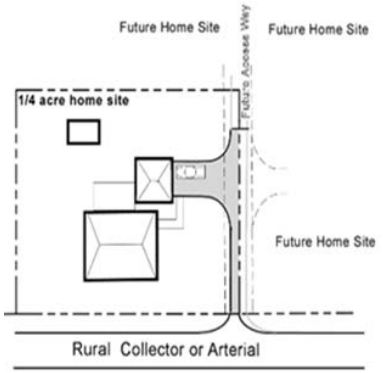
This section contains ***suggestions*** for residential development.

RURAL HOME SITES

The zoning ordinance allows flexibility in creating the shape of home sites within the following standards:

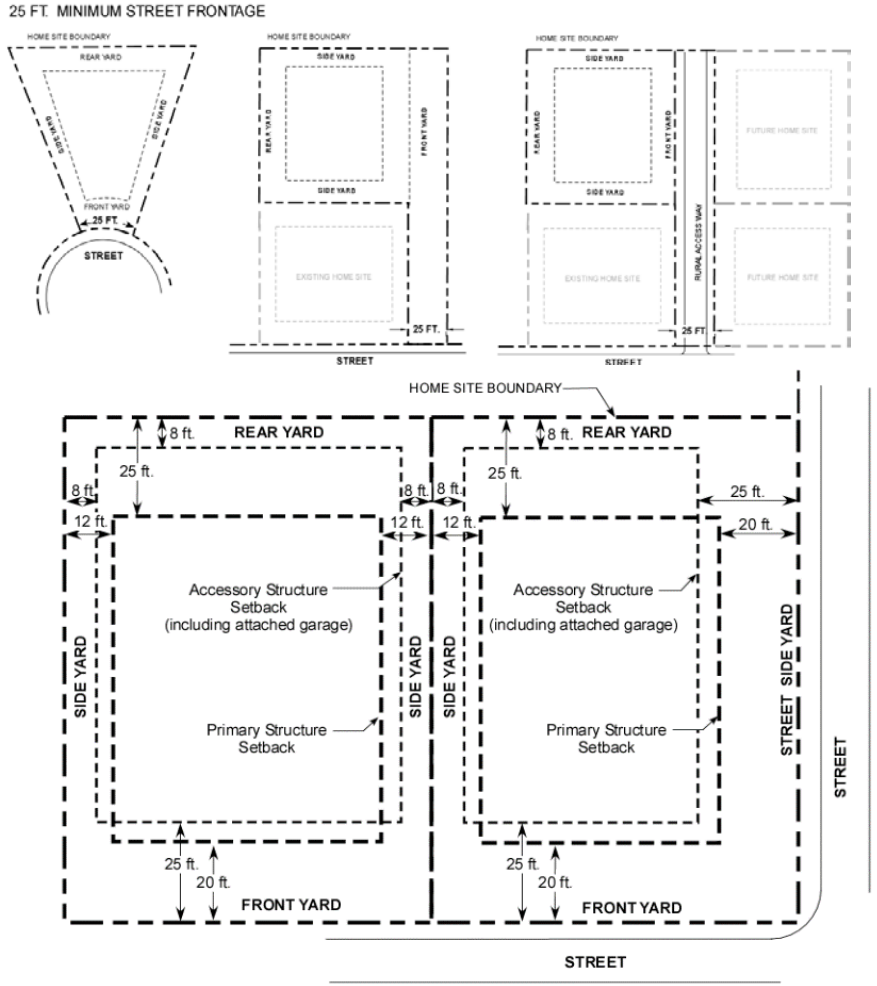
- Minimum size is 10,890 square feet.
- Minimum frontage on a street or access easement is 25 feet.
- Minimum setbacks for primary buildings are 20 feet from a street and 12 feet from an adjacent property.
- Minimum setbacks for accessory structures including attached garages is 25 feet and the minimum setback from an adjacent property is 8 feet.

Within the above minimum standards the depth, width and shape of home sites is flexible and accommodates the use of cul-de-sacs, corner lots and curved streets in the layout of an individual home site or a neighborhood.



The use of a flag shaped home-site is allowed where necessary.

When a home site accesses onto an arterial or collector street it is best to lay out the site so the driveway can eventually become a shared driveway or access way to accommodate the addition of future home sites.



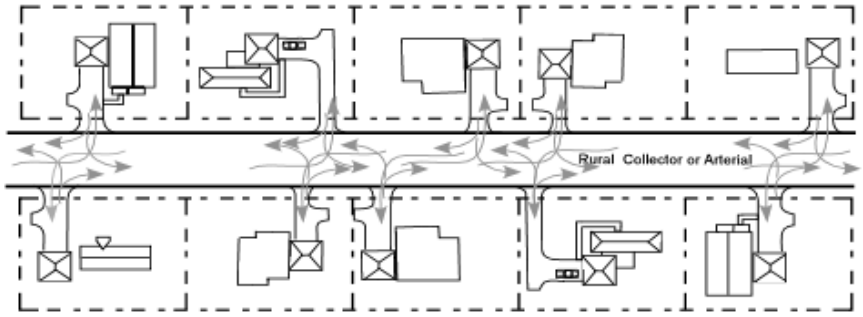
Shared driveways are encouraged but should not be more than 150 feet long and not serve more than four home sites. Any parking should be in planned spaces off the shared driveway or access way on the adjacent home sites.

If more than 4 homes share a driveway it should be a rural access way street. Driveways or dead end access ways longer than 150' may require a turnaround per Fire Department Standards. (See Fire Department Standards Section)

An access way can be created at the same time as the home site in anticipation of the creation of a small a neighborhood or the flag portion of a home site can become an access way if he home is developed with adequate setbacks.

An access way shouldn't serve more than 12 home sites per connection to larger street.

Although it is the most convenient way to create home sites on individual allotments, lining homes sites along arterial or collector streets will eventually create large numbers of turning movements which will increase traffic accidents and is less safe for pedestrians, bicyclists, children and pets. It will also reduce the capacity of the roadway. All of the homes front on the major street which will become noisier and less safe with more traffic as the Community grows.

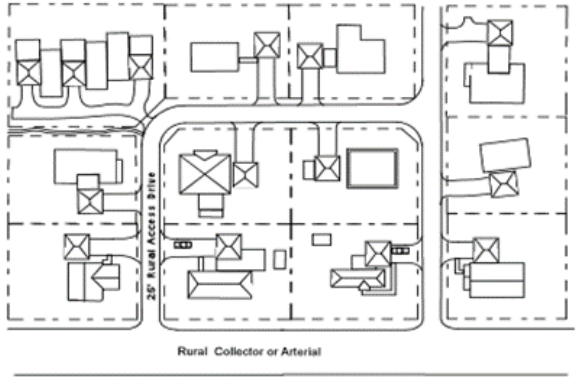


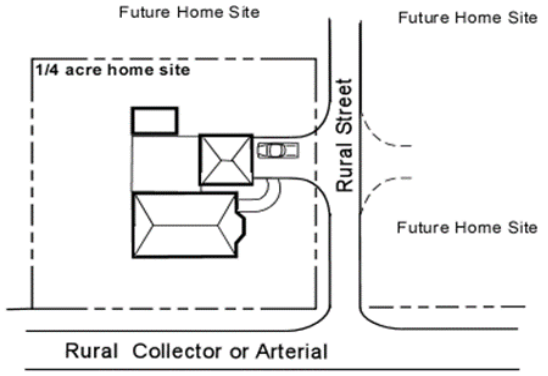
Clustering homes into a neighborhood or around a common area is a historic pattern of family units and villages.

Planning ahead for future home sites that will share the same access to the street creates a safer, quieter neighborhood which can accommodate a variety of housing needs.

Home sites can be created one at a time keeping in mind a planned longer term vision or any number can be created at one time.

Create a safe quite neighborhood
to accommodate a variety of housing needs.



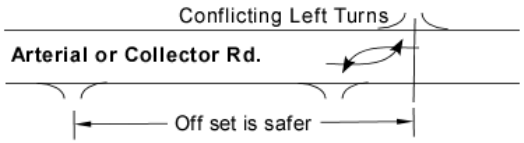


Home sites that are not in a subdivision should access off a Rural or Local Road or a Rural Access Way rather than the main arterial or collector roads.

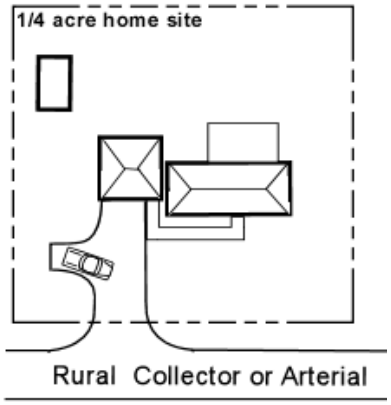
On corner lots access should always be planned off the smaller street since this street will have less traffic.

Home sites within a planned subdivision should access off an Urban Local Residential Street rather than a collector or arterial street.

Streets and major driveway entrances on opposite sides of an arterial or collector street should align directly across from each other or be located a minimum of 250 feet apart so as not to create conflicting left turning movements.



Home sites that do access directly on to an arterial or collector street should be designed with a turn out so the vehicle can exit the site in a forward motion which is much safer. This makes exiting safer than backing on to the arterial or collector street. As traffic increases, this will become much more important.



SUBDIVISION AND NEIGHBORHOD DESIGN

This section focuses on standards and approaches for subdivision design and applies to all subdivisions as well as any other form of land division. These criteria are preferred approaches, but alternative approaches that achieve equivalent results are acceptable.

PEDESTRIAN CIRCULATION

Plan pedestrian circulation between neighborhoods and from neighborhoods to parks, schools, neighborhood centers and other amenities or likely destinations. Linking neighborhoods is socially important to residents of all ages and provides an amenity that contributes to a healthy Community as well.

Pedestrian circulation can be planned separately from or as an augmentation to streets keeping in mind that as an alternative to driving, pedestrian paths are frequently used by children.

Provide pedestrian short cuts where pedestrians would otherwise be required to follow long routes along roadways to move between neighborhoods or to likely destinations such as parks and schools.

Pedestrian paths can be placed in open space links that can also accommodate linear drainage ways / detention areas. The paths should be adjacent to and not within the drainage way and cross over not through.

HOME SITES

Avoid creating Key lots on the shorter street if a block layout is used. In general, home-sites located at the end of a block should not face the short side of the block.

Through or double frontage home-sites should be avoided where possible. Typically it's better to have side yards adjacent to a major street rather than rear yards or a small frontage road so front yards face the major street.

Where rear home-sites front on to a street, provide a landscape buffer along with a non-access easement if the rear street is a collector, arterial road or development entry street.

If a screen wall or landscape buffer is desired along an arterial or collector street it should be provided as part of the development rather than having individual home owners provide walls or fences of different designs and materials.

Align lot corners to avoid creating multiple neighbors on the same boundary line where ever possible. This is particularly good practice on rear lot lines and applies to home-sites that abut an adjacent subdivision. This would not apply if an open space, alley or other separation exists between the home-sites.

Unless there is no other reasonable solution, the access to the buildable portion of a lot should not cross a drainage way or wash.

Always avoid or minimize crossing of drainage ways or washes. Common driveways serving two or more adjacent home-sites is preferred when the home sites must access crosses a drainage way or wash.

All home sites are required to have access to a public street through a private street or access easement.

Use of shared driveways, easements, access ways or a local street is preferred to use of flag type lots. Flag lots are for exceptions and should not be used regularly in the layout of subdivisions.

Indicate the locations of all setbacks and easements on the plat of the site and each home site.

It is recommended that corner home-sites be eight feet wider than internal home-sites to accommodate the wider street side yard setback.

DRAINAGE AND GRADING

Accumulating drainage into larger storm-water detention areas which can be developed as a neighborhood park is preferable to creating many smaller detention areas that are more costly to maintain and provide less benefit.

Grade changes from the off-site grades along the perimeter of a new subdivision should be minimized. Use a grade transition on the new subdivision to minimize the change at the property line. If necessary use deeper home-sites so that the transition is not abrupt. Home-sites in the new subdivision should not be more than 18 inches above/below the abutting land at the mutual property line.

Arrange street and lot designs so they work with the constraints of the natural topography to achieve desirable home-sites with viable building envelopes, streets with reasonable gradients, and adequate, manageable drainage facilities.

STREET LOCATION AND ARRANGEMENT

A “T” intersection of streets should not have a home-site or garage facing down the street as the view at the terminus, particularly entry streets. This termination should end at an open space, space between homes, a recreational facility. Cul-de-sacs should have center landscaping as the view focal point.

Use of the narrowest street needed to serve the neighborhood and use of curved streets and or traffic calming design to create quieter, safer, slower traffic without the need for speed enforcement measures.

In larger subdivisions where the layout uses an entry street, home-sites should not directly accessing the entry street.

There should be one entry for every 75-100 homes in the subdivision to minimize congestion at subdivision entries and on the street that

the subdivision accesses, and to provide alternative access of safety vehicles. It is understood that this may not be feasible in all areas.

Wherever possible, entry streets for a subdivision should align with streets on the opposite side of the road that they intersect or be off-set a minimum of 250 feet. Always avoid the creation of conflicting left turning movements on major streets.

Connect neighborhoods, avoid creating isolated neighborhoods in each development. This is better socially and is much better for emergency and service circulation.

- Extend streets and pedestrian paths to provide future connections with adjoining land.
- Where the adjacent subdivision has extended streets and or pedestrian paths to the boundary, adjacent subdivisions should connect to them with equally sized streets and paths.

Whenever a proposed subdivision embraces any part of a street shown on a street plan the subdivision should be platted in conformance with the adopted street plan. Street layout should provide for the continuation of streets shown on any adopted street plan.

Arrange local residential streets to discourage their use by through traffic. (In commercial development through traffic and cross connections are encouraged or required)

Where a proposed development abuts or contains an existing or proposed arterial street with reverse frontage a vehicular non-access easement along the arterial street, or other treatment to protect residential properties from the nuisance and hazard of high volume traffic, and to preserve the traffic function of the arterial street may be required.

Half streets are discouraged except where necessary to provide right-of-way required by an adopted street plan, to complete a street pattern already begun, or to ensure reasonable development of adjoining parcels. Where a platted half street abuts a proposed subdivision and the half street furnishes the sole access to residential lots, the remaining half shall be platted within the street.

Proposed streets and pedestrian paths shall be designed connect to existing streets and pedestrian paths of adjacent development of the same type (residential adjacent to residential, commercial adjacent to commercial) and improved to the intercepting paving line of the existing streets or pedestrian paths.

All streets (including private streets) shall be designed and constructed in conformance with the SRP-MIC standards.

Alleys or back of store service ways shall be designed and constructed in conformance with the following width standards:

- Sixteen (16) feet within residential zoning districts;
- Twenty (20) feet within commercial or industrial districts.
- Alley intersections and sharp changes in alignment shall be avoided, but where necessary corners shall be cut off fifteen (15) feet on each side to permit safe vehicular movement.

Dead-ends are prohibited.

In phased development dead-end alleys or streets extending more than 150 feet shall be graded and surfaced to provide a turning circle to conform to SRP-MIC Standards.

If in some cases it is advisable to terminate any existing street connection, it may be necessary to continue a pedestrian walkway across in order to maintain pedestrian accessibility.

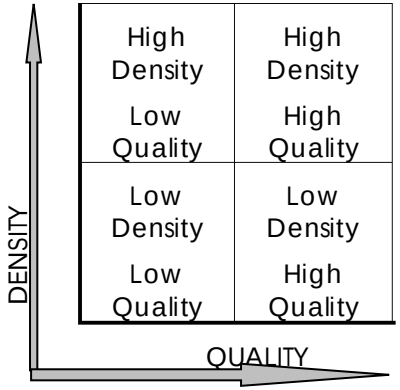
In general, block lengths should be kept to a maximum length of 800 feet.

Where block lengths exceed 360 feet cross-block pedestrian connections may be required. This is most important if there is a nearby school, park, recreational amenity or similar destination. Such connections shall be placed within a tract that has a minimum width of 20 feet for single use paths and 30 feet for multi-use easements.

MULTI-FAMILY DESIGN

Residential development can vary widely, ranging from low density single family homes on individual home sites to a neighborhood that includes a mix of single family homes and attached multifamily dwellings like attached or zero lot line patio homes or townhouses resulting in a higher density. As homes are placed closer together, at higher density, attention to design becomes more important to providing the best living environment.

This section provides basic guidelines for higher density development with the goal of creating a quality living environment at various densities that can be mixed into the single family residential area of the Community.



The primary factor determining the quality of a living environment is not density, its good design

OPEN SPACE

Meaningful open space in the form of private, semi-private and shared outdoor living space is important in all residential development. The need for shared open space increases as the area of private open space on individual home sites gets smaller. How the open space is developed should relate to the anticipated inhabitants and vary with the type and number of dwellings in the development.

Private outdoor space is designed for use by the residents of a particular dwelling and is needed by all types of dwellings. It might include yards, front or back patios, porches, or decks depending on the type of dwelling. Its private intent should be clearly defined by the physical design. It does not include semi-private areas such as walkways from the street to the entrance of the dwelling or yards which are not for the exclusive use of the occupants.

Private outdoor spaces are an extension of the interior living space in terms of location and functionality. Minimum ***suggested*** area and dimensions of private outdoor areas are shown in the following table:

Type of dwelling units.	**Minimum Suggested Private Outdoor Space**	**Minimum Dimension of any Space Created**
Apartment Style Dwellings (Multi-Story with dwellings above other dwellings)	Ground Floor Dwellings 250 sf or 25% of floor area whichever is more. Upper Level Dwellings 250 sf or 25% of floor area whichever is more.	12’ 8’
Townhouse Style Dwellings (Attached side by side dwellings)	650 sf	15’
Semi-Attached Dwellings (dwellings with attached garages)	800 sf	15’
Single Family Dwellings	3000 sf	15’

Shared open space are developed for use of the residents of a neighborhood, a group of neighborhoods, or the whole community. providing facilities that serve the anticipated residents and is in addition to the amount of private open space.

Approximate amount by type

Shared Open Space	Area per Dwelling	Minimum size	Distance from dwellings
Mini Park	175 sf	1 acre or less	.25 mile / 5 minute walk
Neighborhood Park	1750 sf	10-15 acres	.5 miles / 15 minute walk
Community Park	3500 sf	20 -25 acres	2-3 miles / 15 minute bike ride / 5 minute drive

Shared spaces should:

- Be located apart from each other and as convenient as possible to the residential areas.
- Be fully developed, landscaped and designed to meet the needs of the intended residents. For example a neighborhood for seniors would have different needs than one for young adults.
- Be linked to dwellings by sidewalks, bicycle paths or informal pathways.
- Encourage installation of vatos (outdoor shade structures) for residential units, neighborhoods and/or complexes.

Multi-family dwellings that have smaller private open space areas have a greater need for shared open space and recreation facilities. When a neighborhood of 20 dwellings or more does not have convenient and safe pedestrian access to neighborhood recreation facilities, the multi-family development should provide recreation facilities related to the number of dwellings and type of resident expected to reside in the dwellings.

For example:

- In small neighborhoods of less than 15 dwellings provide passive outdoor gathering area(s) with facilities like shaded picnic tables and barbecue pits, sitting areas, pedestrian paths, a children's play area, etc.
- In projects of more than 15 dwellings, passive recreation areas like those in a. above and shaded children's play areas should be 400 square feet or 1% of the site, whichever is greater. Children's play areas are not needed where it is not llikely that children will reside in the neighborhood.
- In larger neighborhoods both passive and active recreation areas and facilities should be provided. Active facilities might include a clubhouse and gathering area, basketball or tennis courts and children's play areas. Large developments might include a swimming pool, or other amenities depending upon the scale and type of residents anticipated and availability and proximity to these types of facilities at the community level.
- Shade should be provided over a minimum of 50% of passive outdoor recreation facilities such as seating areas, picnic tables, and play areas.

BUILDING SEPARATION

Attached dwellings are considered one building.

When an entrance to a dwelling unit or common facility is between two adjacent buildings, the minimum dimension between the adjacent buildings is thirty (30) feet.

The minimum separation between any building sides when neither building has an entrance to a dwelling or to common facility and the area includes a walkway is twenty (20) feet. With no walkway, the separation should meet building and fire codes.

Separate walkways from building windows with landscaping or screening.

BUILDING DESIGN

Interior spaces based on minimum suggested quality of life standards:

- The minimum length and width of any bedroom should be ten (10) feet.
- Provide natural light into interior spaces from more than one direction wherever possible. Use building offsets, clerestories, skylights, interior courtyards in attached buildings to accomplish this.
- Provide operable windows for passive cooling and air circulation.
- Size kitchen countertops and cabinets in proportion to the number of dwelling occupants anticipated. A minimum of six (6) linear feet plus two (2) feet per bedroom of counter is suggested for upper and lower cabinets.
- Expand the volume of common interior spaces with features such as vaulted ceilings and alcoves.
- Minimize the amount of space used for hallways.

BULK STORAGE

Provide bulk storage areas designed for storage of materials such as tools, bicycles, recreational equipment, etc. and that are free of encumbrances such as water heaters or other types of mechanical or electrical equipment. Bulk storage does not include bedroom closets, kitchen cabinets, or food pantry.

One (1) cubic foot minimum of bulk storage for each three (3) square feet of gross floor area of the dwelling unit is recommended.

Bulk storage areas may be incorporated into garages, carports, screening walls, be attached to or within the dwelling unit. Typically, if within the dwelling unit, it is best near an entry or garage entry.

Exterior bulk storage facilities should use materials and details similar to those of the dwelling unit and be integrated with the appearance of the dwelling.

BUILDING ELEVATIONS

The architecture of multi-family buildings should reflect the following concepts:

- Emphasize residential scale and character throughout.
- The identity of the individual units should be evident in the elevation.
- In conversion of an existing structure, any additions should respect the architectural character, detailing, lines and proportions of the existing structure. A "facelift" on the existing building may assist in the accomplishment of this result.
- Additions should be integrated into the existing structure in a manner that they are difficult to identify and appear to have been a part of the original design of the structure.
- Architectural details should create the character of the building and the identity for each of the individual dwelling unit. Monotonous repetition, of the same elements should be avoided in favor of different, but compatible features for adjacent units.
- Balconies, overhangs, covered patios, and trellis should be considered to provide relief and contrast to the building and assist in breaking up large wall surfaces.
- When building elements, such as decks, chimneys, entry features, and other features are repeated, alteration of the details such as varying orientation, location, height and unique features of those

elements should be used within the context of the overall design to provide interest and avoid monotonous repetition.

- The mass of the building should be reduced by varying setbacks and building heights of individual units.
- Consideration should be given to partially screening stairwells or using architectural treatments so that they blend in with the overall building elevation rather than appearing tacked on.
- Design carports, storage units and other structures, in concert with the dwelling units, carrying details and design elements throughout the project.
- Vary long rooflines providing different heights or varying roof orientations. Interrupt parapet walls by setbacks or varying heights.
- Use architectural detailing and treatment of windows and doorways incorporate alcoves, recessed windows, raised trim and borders, awnings, shade structures or trellis.
- Design an obvious transition from public to semi-private to private space through use of physical features. The individuality and privacy of units should be emphasized with identifiable private or semiprivate entrees.
- Do not use catwalks or long corridors lined with entrances to units. Limit the number of units served by an exterior stairway to three or four units.
- Separate common walkways from any windows by a minimum of seven feet and landscape or otherwise design the space between the windows and the walkway to maintain that separation.
- Design patio and other exterior walls or fences as an integral part of building, compatible with the landscape theme and the main building materials.
- Screen mechanical equipment from public view and locate it away from patios or passive outdoor areas and/or buffer equipment noise from these outdoor areas. Roof mounted equipment is highly suggested wherever possible.

ENERGY CONSERVATION GUIDELINES

Give consideration to energy conservation through site layout and building design using as the following:

- Passive ventilation and solar cooling or heating.
- Operable windows for cross ventilation, higher ceilings, use of a copula to vent warm air.
- Solar or in line hot water systems.
- Solar assisted air conditioning.
- Natural lighting sources that limit heat gain and use of efficient lighting systems.
- Adequate roof and wall insulation and at least double pane glazing on all windows.
- Orient buildings and windows to improve energy conservation. Limit east and west facing windows. Provide shade devices or use trees for shade.
- Large overhangs to provide shading over southerly facing windows and walls.
- Landscaping and tree placement to optimize solar access in the winter while offering shade to windows, building walls, passive outdoor recreation areas and pedestrian walkways in the summer.
- Place garages and storage on the east or west sides of the building.

RELATIONSHIP OF PROJECT TO SURROUNDING LAND USES

The design of multi-family sites and dwellings should take into account the type of adjacent uses, building scale, building heights and density.

Particular sensitivity should be used when multi-family dwellings are adjacent to residential uses of lesser density to create a transition in density and dwelling unit types.

Use a mix of unit types, including detached single family units, duplex, and triplex, to create a transition to single family development on abutting sites.

Limit the height of multi-family dwellings abutting single family uses to similar heights as the adjacent single family homes.

Individual situations may require additional design considerations such as:

- Adding landscaping to serve as a buffer.
- Widening setbacks from the property line.
- Modifying the orientation of buildings.
- Modifying the location or orientation of windows and balconies for privacy.
- Screening with landscaping or patio walls.
- Relocating access ways, driveways or parking areas.

Locate active recreation facilities to minimize the intrusion of noise into an adjacent residential area or implement a method of mitigating noise from the recreation area.

Give careful consideration to views from within the dwelling units or from balconies and patios in site layout and floor plans of the individual dwelling units.

Orient buildings and windows to take advantage of pleasant off-site views and to minimize or screen poor or obtrusive views and to respect the privacy of adjacent dwelling units.

CIRCULATION AND PARKING

Provide a hierarchy of circulation in larger developments leading from public streets to private streets or access ways to parking courts.

Design streets and drives to evoke a natural response to drive at slower speeds rather than relying on signage or intrusive features like speed bumps.

Long, straight and wide drives encourage faster speeds and should be avoided.

Lay out the site to minimize interaction between pedestrian/bicycle ways and vehicular traffic and to avoid splitting of shared open space by vehicular traffic.

Where it is not possible to connect dwelling units to shared open space and recreation facilities without crossing vehicular traffic or parking areas, provide pathways and marked crosswalks or raised crosswalks.

Given equal consideration to pedestrian, bicycle and vehicular circulation.

Create pedestrian and visual links between the dwellings and on and off site amenities.

Create parking courts and small parking areas that have the character of a private parking area rather than long stretches of parking spaces along common driveways.

Utilize landscaping to break up large expanses of asphalt and to provide shading over paved areas.

Minimize negative traffic impacts on surrounding uses.

All ingress and egress the site shall be by forward motion of vehicles except in lower density townhouse or similar design where access should be to local residential streets or drives. No vehicle shall have access that requires backing on to an arterial or collector street.

Design pleasant visual focal points of drives and walkways. Avoid placing utilitarian facilities such as trash receptacles, electrical meters, and other items in these important focal points.

COVERED PARKING AND AMENITIES

Provide auto garages or two covered parking areas per dwelling unit.

Provide amenities such as small storage areas for tools and auto supplies as part of covered parking facilities, an outdoor hose bib for use for washing cars or watering plants and other such conveniences typical of single-family dwellings.