

## Smartscape Principles and Benefits

*Smartscape* is a research-based program for the implementation of the fundamentals of horticulture in the urban Sonoran Desert. The key components of the program are efficient use of resources, landscape water conservation methods and best management practices for low-water-use landscapes.

*Smartscape* has adapted the core principles of *Xeriscape* and modified them for application in the Sonoran Desert.

- I. Xeriscape Principles
  - a. Good planning and design
    - i. The right plant in the right place
    - ii. Use of rainwater harvesting, both active and passive, and green stormwater infrastructure
    - iii. Drainage control
  - b. Low water-use plants
    - i. Native or desert adapted plant pallets
    - ii. No invasive species
    - iii. Correctly installed
  - c. Efficient irrigation
    - i. WaterSense labeled irrigation controllers
      1. Weather-based; or
      2. Soil Moisture-based
    - ii. Plants with similar water requirements zoned together
    - iii. Drip emitter irrigation, correctly designed and placed
  - d. Appropriate turf areas
    - i. Minimal turf areas
    - ii. Efficiently irrigated
  - e. Soil improvements
    - i. Minimal use of amendments
    - ii. When used, appropriate for the soil type and plant
  - f. Use of mulches
    - i. Use for moisture retention and temperature control
    - ii. Do not use D.G. (Decomposed Granite)
  - g. Appropriate maintenance
    - i. Correct tree pruning. No stubs, toppings, lion tails
    - ii. Correct shrub pruning. No shearing
    - iii. Regular inspection and repair of irrigation system
    - iv. Seasonally adjust irrigation schedules



## II. Benefits of Adapting Smartscape Principles

- a. Utilization of native and desert-adapted plants will:
  - i. Make neighborhoods cooler and more resilient in order to counter urban heat island effects
  - ii. Provide functional landscaping that enhances beauty and wildlife viewing opportunities, as well as providing social, economic and ecological benefits
  - iii. Reduce maintenance (labor) and utility costs, while enhancing the diversity, longevity, beauty, and vigor of plants
  - iv. Limit the need for outdoor irrigation, fertilizers, and pesticides reducing:
    1. Maintenance costs
    2. Possible hazards for humans and domestic animals
    3. Potential pollution, while providing quality habitat for wildlife
- b. Landscape diversity will be maximized by using a variety of:
  - i. Grasses, succulents, trees, shrubs, flowers
  - ii. Number/types of species
  - iii. Flowering times, color, shape, texture
- c. Use of plants with mutually compatible water requirements in the landscape design will enhance long-term viability of the installed landscaping
- d. Use of rainwater harvesting, green stormwater infrastructure techniques and irrigation maintenance will reduce:
  - i. Landscape water use (demand reduction)
  - ii. On-site flooding
  - iii. Pollutant discharge
  - iv. Off-site runoff
  - v. Downstream flooding

