# 6. MULTIPLE-USE CONCEPTS

With appropriate site planning, detention basins and stormwater harvesting basins can serve other practical purposes in addition to being a vegetated amenity. Other acceptable uses and/or benefits include passive and active recreation, habitat enhancement and landscaped bufferyards. These are more fully described below.

## 6.1 Multiple Benefit Concepts

### 6.1.1 Resource Benefits of Shaded Basins

1. Energy Reduction**:** Shade-producing vegetation planted in stormwater harvesting basins on the east, west and north sides of a building can be used to capture runoff from the building and adjacent impervious areas to irrigate vegetation that can shade the building and reduce the cooling costs.

2. Potable Water Reduction**:** Watering of vegetation accounts for a substantial portion of the potable water used in our region. The use of water harvesting can reduce amount of the potable water used for irrigation. When new landscaping is required, or if augmentation of the urban canopy is desired, these new plantings require irrigation. After an initial establishment period, the use of water harvesting basins can result in viable plants that do not need additional irrigation from potable water.

### 6.1.2 Public Health Benefits of Shaded Basins

1. Heat Reduction**:** Vegetation planted in basins produces shade that can reduce overall ambient air temperature which has a health benefit to the community. This benefit is particularly important if an impervious unshaded area can be replaced with a pervious shaded area. The overall reduction in temperature can also reduce energy demand for cooling.

2. Air Quality Improvements**:** Air quality improvements come in the form of reduction in dust from wind breaks provided by vegetation in basins, and mitigation of harmful gasses.

3. Water Quality Improvements**:** Basins can capture water that contains contaminants that might impact water quality. In addition, soil and plant processes can break down organic constituents like oil. Utilizing organic mulch such as wood chips in stormwater collection basins enhances the ability of soil and microbes to break down pollutants while maintain and improving soil infiltration capacity.

### 6.1.3 Transportation Benefits of Shaded Basins

1. Traffic Safety: Stormwater harvesting basins in curb-extensions and street intersections can slow traffic and increase safety in residential areas. Known areas of problematic speeding may be made safer with these traffic-calming features.

2. Extended Pavement Life: Shaded pavement has been shown to have a longer life in desert environments which can reduce the long-term expenditure for pavement maintenance.

3. Improved Pedestrian Accessibility: Shaded walking areas are more conducive to pedestrians and bicyclists and are an element of the Complete Street design. The placement of detention and stormwater harvesting basins adjacent to roadways and parking lots or within medians and islands can be used to capture runoff from the street or parking lot to irrigate vegetation that can shade streets or parking lots.

4. Reduced Street Noise: Vegetation planted in stormwater harvesting basins next to roadways reduces street noise.

### 6.1.4 Benefits of Basins to Habitat

1. Enhance Wildlife Corridors**:** The placement of basins adjacent to watercourses, riparian habitat or other existing vegetated areas creates a larger corridor for wildlife, and a bigger buffer from adjacent improvements. Utilization of native, multi-story canopies (e.g. a combination of ground covers, shrubs, and trees) further enhances structural habitat for wildlife.

### 6.1.5 Property Value Benefits

1. Increased Property Value: Creating a landscaped amenity of the stormwater features for the benefit of the site and/or public rights-of-way is encouraged. Greater abundance of trees and other vegetation has been shown to be associated with increased property values. This is the result of aesthetic improvements as well as some of the other benefits described above (e.g. reduced energy and water costs) which have a direct economic benefit.

2. Property Screening: Frequently, new development is required to provide bufferyards so that the intensity of development is not too severe, and that appropriate screening of the new

development occurs. By placing stormwater harvesting basins within the bufferyard, landscaping will receive increased amounts of runoff which can be removed from supplemental irrigation more quickly. In addition, due to the expected density of this vegetation, additional requirements for screening with walls or fences may be waived.

## 6.2 Multiple Use Concepts

### 6.2.1 Human Activity Zones

If the detention basin also is intended for human activity, the following additional design standards apply:

1. A basin designed with human activity zones shall contain a minimum of 1 pedestrian access slope of 8:1 or flatter and a maximum of 100 feet either to the base of an access slope or to a 4:1 or flatter basin side slope.

2. All facilities and furnishings placed below the elevation of the 100-year water surface shall be waterproof and not floatable.

### 6.2.2 Basins Containing Landscape Bufferyards

If the detention basin or stormwater harvesting basin is also intended to support bufferyard landscaping, the following additional design standards apply:

1. The drainage report must demonstrate that the multiple uses of the bufferyard for both landscaping and detention are compatible.

2. The project landscape plan must be submitted to the Floodplain Administrator for review prior to final approval of the development plan or plat.

3. The Floodplain Administrator will review for requirements of the applicable floodplain ordinances and policies. Landscape requirements shall be reviewed by the Development Services Department.