

# SUN VALLEY

## Area Drainage Master Plan



### *Scenery Multiuse Data Collection and Analysis*



January 2007





SUN VALLEY AREA DRAINAGE MASTER PLAN

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### SECTION 1: PROJECT OVERVIEW

#### 1.1 Project Understanding and Vision

The Sun Valley Area, west of the White Tank Mountains, in Maricopa County, has been recognized as an area of potential future growth for residential developments (Figure 1.1). Unlike some landscapes in Maricopa County, much of the Sun Valley Area has not yet been impacted by substantial development. However, with increased development and activities adjacent to and within the project area, the environment within this landscape is at risk of deterioration and potential loss of many highly valuable resources. The Town of Buckeye has approved several community master plans within the Study Area. Additional master plans are in early stages of planning and two of the approved plans are under construction. The proposed plans will transform the relatively undisturbed desert landscape into an intensively developed suburban area.

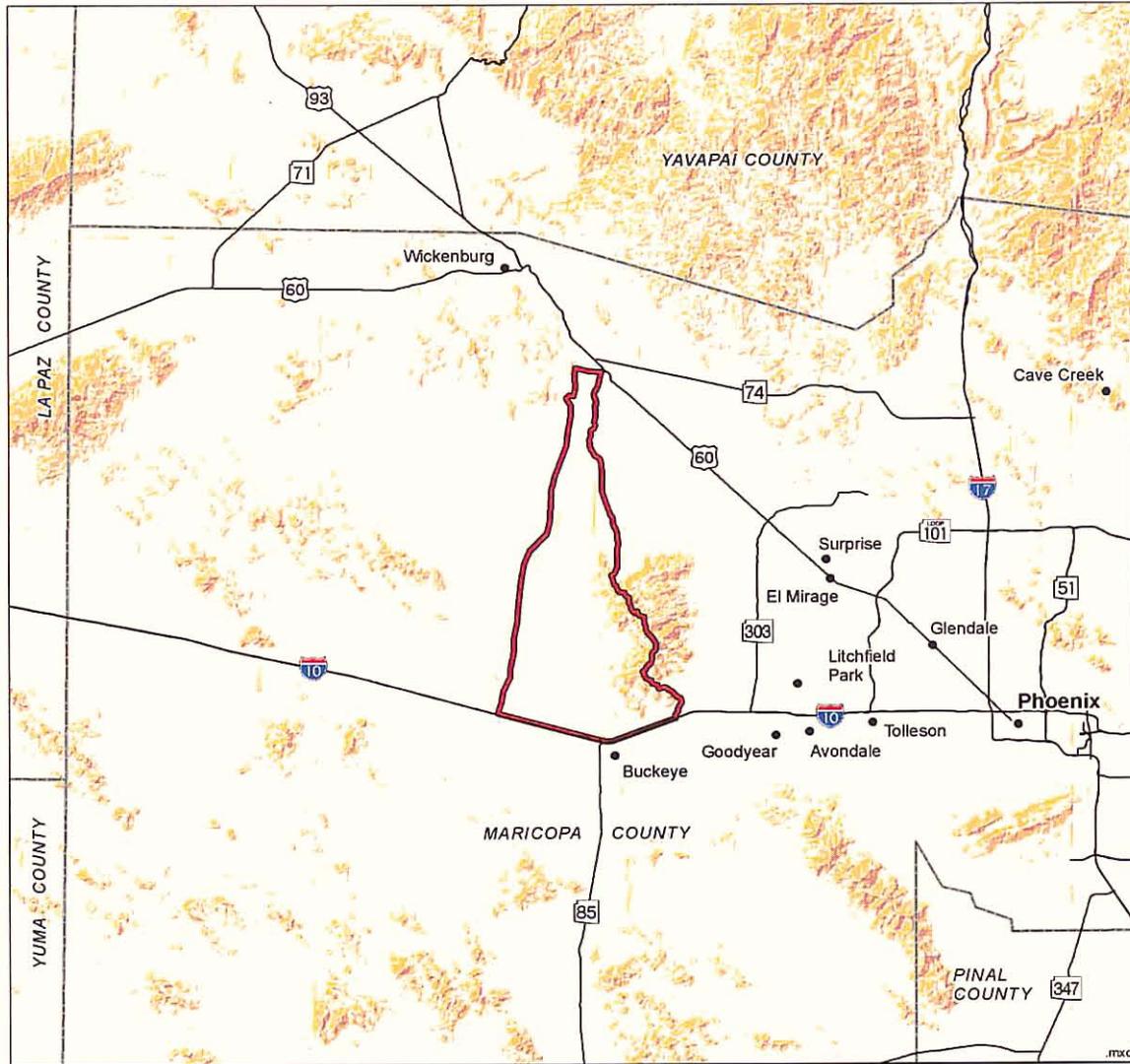
##### 1.1.1 Purpose and Need

The focus of this report is to assess scenic and recreational resources within and adjacent to the Sun Valley project area and identify opportunities to incorporate flood control facilities into the area in a context sensitive way. The plan will help determine the compatibility of various flood protection methods (non-structural vs. soft/hard structural) and landscape design themes (natural vs. parklike) that could be implemented in this area of the Maricopa County. The scenic and recreational data collection and analysis for the Sun Valley ADMP includes the following objectives:

- Successfully implement the District's aesthetic and landscape design policies within the design of flood protection facilities to be constructed within the Sun Valley ADMP area
- Preserve and enhance the historic, existing, and future desired landscape character, while emphasizing the unique natural and cultural features found throughout the Sun Valley ADMP area.
- Identify opportunities and constraints for a variety of flood protection methods.
- Identify landscape themes and develop design guidelines for a range of flood protection facilities for the Sun Valley ADMP area.
- Provide a broad range of recreation opportunities, including both active and passive experiences within the Sun Valley ADMP area.



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Source: Arizona Transportation Information System GIS Coverage (2004)

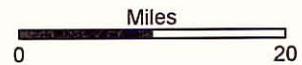


Figure 1.1

## Project Location



## 1.1.2 Landscape Aesthetic Goals

As part of the data collection process, the District's goals for incorporating and preserving aesthetic and scenery resources were obtained from the District's landscape architecture program manager and local communities in the regional planning area.

**Flood Control District** –The District's goals provide overall guidance for addressing the aesthetic treatment of facilities developed for flood control to make them more compatible with the surrounding landscape and reduce their visual impact for future residents and recreation users. The goals discussed with the District are outlined below.

- Plan and design the Flood Control District's projects to preserve and compliment the visual character of the landscape settings in which they occur.
- To protect the beauty of the natural, rural, suburban, and urban landscapes of Maricopa County
- To be responsive to achieving the future landscape character that is desired by the local communities.
- Identify landscape themes and aesthetic treatment design guidelines for implementing the themes for each project component in the plan.
- Identify right-of-way needs for incorporation of aesthetic features into project components of the plan.
- To develop aesthetic treatments that are consistent with District cost ceiling guidelines in its aesthetic treatment policy.

**Local Communities** – The goals for visual resources and landscape aesthetics of local communities were obtained from general plans and other planning documents and are shown in Table 1.1.



Table 1.1

Visual Resource Goals for Communities near the Sun Valley ADMP Area

	Maricopa County Comprehensive Plan	Buckeye	Goodyear	Surprise	Wickenburg
Community Appearance	<ol style="list-style-type: none"> <li>Promote development that considers adverse environmental impacts on the natural and cultural environment, preserves highly valued open space, and remediates areas contaminated with hazardous materials.                             <ul style="list-style-type: none"> <li>Encourage preservation of significant mountainous areas with slope over 15% for parks, open space, and/or compatible recreation use.</li> <li>Promote development that is compatible with the visual character and quality of the site.</li> <li>Promote the appreciation and preservation of significant archeological and historic resources within the framework of state and federal laws, regulations, and guidelines.</li> <li>Encourage the protection of habitat.</li> <li>Promote the protection and preservation of riparian areas.</li> </ul> </li> <li>Promote physical and visual public access to open space resources.                             <ul style="list-style-type: none"> <li>Promote the economic and quality of life benefits of open space.</li> <li>Protect and enhance environmentally sensitive areas, including mountains and steep slopes; rivers and significant washes; historic, cultural, and archeological resources; view corridors; sensitive desert; and significant wildlife habitat and ecosystems.</li> </ul> </li> <li>Encourage protection of view corridors within new and established scenic corridors.</li> <li>Design all road crossings to minimize disturbance to the natural environment, and to accommodate identified trail crossings and other open space.</li> <li>Encourage the use of native plant material for all types of landscaping.                             <ul style="list-style-type: none"> <li>Consider creation of a landscape ordinance.</li> <li>Explore implementation of flexible zoning techniques that promote open space preservation.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>Maintain spacious community appearance                             <ul style="list-style-type: none"> <li>Preserve natural habitats</li> <li>Enhance scenic roadscapes</li> <li>Maintenance, weed control in all common areas</li> <li>Protect views of mountain and desert spaces</li> </ul> </li> <li>Incorporate useable open space in all residential areas                             <ul style="list-style-type: none"> <li>Meet outdoor enjoyment needs at neighborhood level</li> </ul> </li> <li>Develop facilities that allow appreciation of vistas and views                             <ul style="list-style-type: none"> <li>Provide opportunity for public outreach and education through participation by the community and schools/libraries</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>Strategically locate manmade open spaces to convey a sense of openness in the community.                             <ul style="list-style-type: none"> <li>The City shall strongly support the provision and strategic location of golf courses and detention basins in locations that enhance the visual and functional quality of the built environment.</li> <li>The City shall encourage joint-use opportunities for developed active and passive open space whenever practical.</li> </ul> </li> <li>Continue to coordinate the provision of park land and major recreational facilities with other governmental entities and private, non-profit agencies.                             <ul style="list-style-type: none"> <li>The City shall partner with the Flood Control District of Maricopa County and other stakeholders to implement the El Rio Vision within and adjacent to the Gila</li> <li>4.2 Open Space Goals, Objectives and Policies 4-11</li> <li>River, the SR 303 Corridor/White Tank ADMP Update in the north and central region of the Goodyear Planning Area, and the future Estrella and Rainbow Valley/Waterman Wash Area Drainage Master Plans in the south region of the Goodyear Planning Area.</li> </ul> </li> </ol>	<ol style="list-style-type: none"> <li>Preserve the natural environment and scenic resources within the planning area by ensuring compatible development that protects environmentally sensitive areas.                             <ul style="list-style-type: none"> <li>Evaluate environmentally constrained areas for appropriateness as open space</li> <li>Encourage clustering in areas for the preservation of natural open space within residential neighborhoods. The integration of natural open space within clustered developments should promote openness within housing developments.</li> <li>Preserve the vistas of the White Tank Mountains</li> <li>In environmentally safe areas within the planning area, the City shall encourage the use of building envelopes that encourage the provision of natural buffers between buildings in order to protect sensitive landforms, vegetation, and/or wildlife corridors. Building envelopes designate the specific areas that can be disturbed in any way during or following construction. The area outside the envelope must be maintained in a natural state.</li> <li>Protect slopes 10 percent or greater from development.</li> </ul> </li> <li>Utilize natural and man-made corridors for land use buffers and open space connections.</li> <li>Strategically locate man-made open spaces to convey a sense of openness in the community.                             <ul style="list-style-type: none"> <li>The City shall strongly support the provision and strategic location of golf courses and detention basins in locations that enhance the visual and functional quality of the built environment.</li> <li>The City shall encourage joint-use opportunities for developed active and passive open space whenever practical.</li> </ul> </li> <li>The City shall amend the Zoning Ordinance to reflect revised definitions and standards for active and passive open space.</li> </ol>	<ol style="list-style-type: none"> <li>Maintain and preserve the open, scenic quality of the Wickenburg area environment.</li> <li>Develop community appearance standards.</li> <li>Protect Wickenburg character through dedicated open space buffers, protected view corridors and, to ensure spaciousness beyond the municipal limits, promote low density or master planned development patterns in unincorporated areas.                             <ul style="list-style-type: none"> <li>Wickenburg residents take pride in the Town's high desert setting and unique natural features. Strong efforts must continue to prevent environmental degradation. Incompatible uses should be buffered by open spaces serving as view corridors.</li> <li>Protect unspoiled views for all residents</li> <li>Develop an accessible equestrian trails system integrated with a pathway network serving pedestrians, runners and bicyclists</li> <li>Establish area greenbelt network linked to the Town trails and pathway system; integrate with residential neighborhoods.</li> </ul> </li> </ol>



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### 1.2 Scope of Analysis

The study area for the scenery and recreational resources data collection and analysis included both a regional and local evaluation of data influencing the Sun Valley project area. The primary focus of the study was the local environment within the project area and was emphasized since current and future management and development activities within the project area are most likely to influence scenic and recreational resources. However, it was recognized that the regional setting, in particular existing and future recreation and land use(s), also indirectly influence scenic and recreational resources in the project area. Therefore, the regional environment was evaluated for an area approximately 10 miles outside of the project area.

Figure 1.2 depicts the areas covered by the scope of the scenery and recreation resources data collection and analysis. There are four distinct areas used for various parts of the evaluation including the project area boundary. The areas are described as follows:

- The Regional Recreation Multiple-Use Assessment Area – this area was defined as occurring within 10 miles of the project area boundary. It can be characterized as a “bird’s eye view” of the Sun Valley area and its regional influence. It was considered in an effort to understand local municipality, county, state and federal existing and planned recreational resources in order to better understand cultural and natural themes that currently exist within the region.
- The Scenic Quality Assessment Area – this area was defined as occurring within 0.25 mile of the project area boundary. It can be characterized as containing scenic resources that are most susceptible to visual resource impacts with the construction of various types of flood control facilities within the Sun Valley ADMP area. The degree of severity of the impact would be determined through consideration of various factors related to project visibility and the compatibility of various flood control facilities in distinct landscape settings.
- The Landscape Character Assessment Area – this area was defined as occurring within 1 mile of the project area boundary. It can be characterized as an area specifically evaluated on the basis of cultural, natural, and physical characteristics that create the visual fabric within a variety of landscape settings. These landscape settings were aggregated within one type, three sub-types, and seven units. Each distinct level contains characteristically unique cultural, physical, and natural attributes that create the “landscape character” of the particular area.
- The Study Area -- this area was defined as the limits in which all aspects of the Sun Valley project evaluations would occur and was determined by the District based primarily on watershed boundaries. This area was not selected on the basis, solely, of understanding scenery and recreation resources; rather, all disciplines evaluated resources, constraints, and opportunities for developing flood control facilities within this study area.

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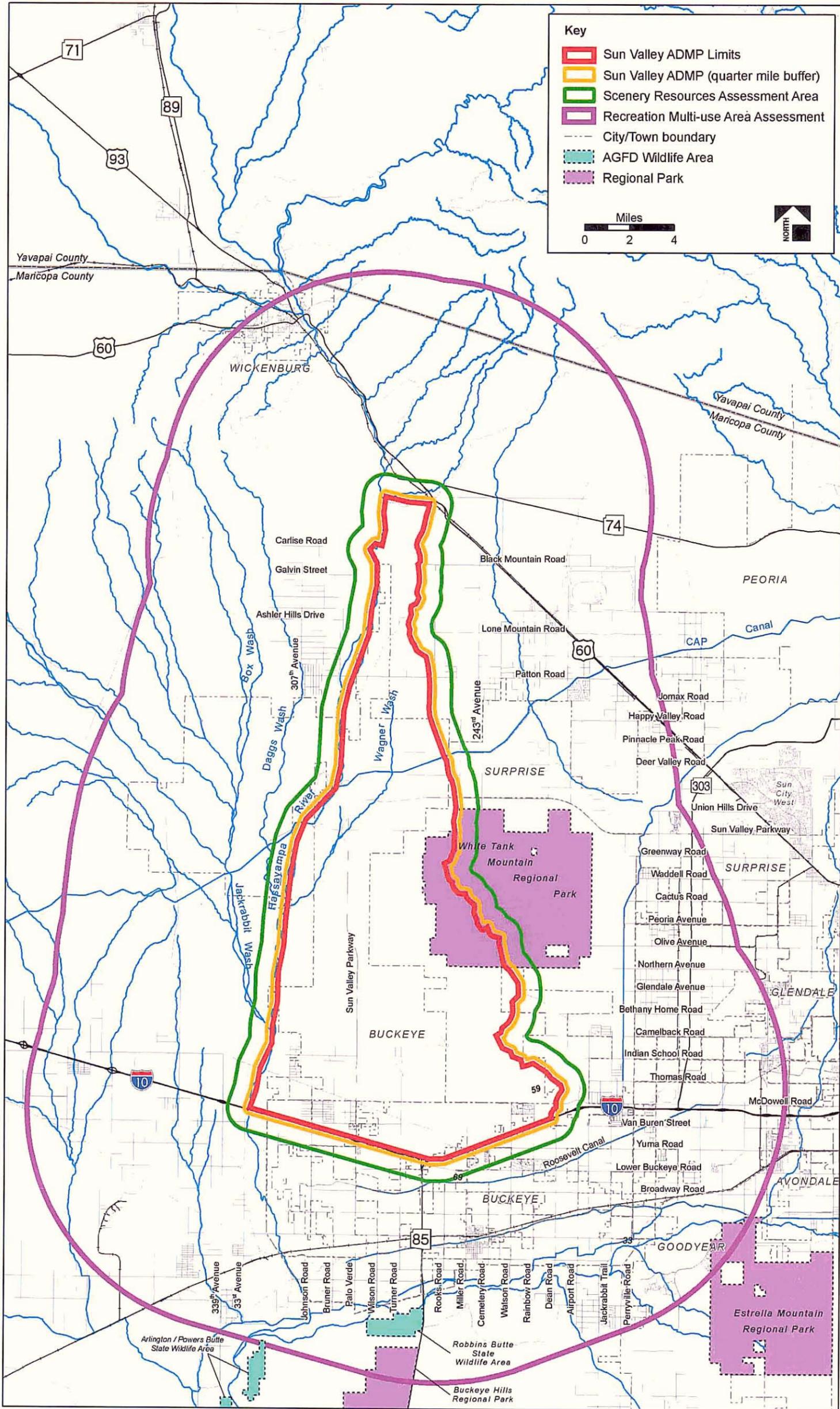


Figure 1.2

Scenery and Recreation Assessment Areas



### 1.3 Methodology

#### 1.3.1 Flood Control District of Maricopa County Guidelines

The planning and design of flood control facilities as places for people is a key issue and challenge facing floodplain managers in Maricopa County. Increasingly, local citizens and community leaders are calling upon the District to plan and design its flood protection facilities in ways that will preserve natural desert open spaces, enhance desired local community character, and provide opportunities for recreation such as desert green belts and new park lands.

In response to public concern for preserving and enhancing the visual beauty of the natural settings of Maricopa County, the District adopted a *Policy for the Aesthetic Treatment and Landscaping of Flood Control Projects*, in 1993. The primary objective of this policy is to plan and design the District's flood protection facilities to complement the visual character of the landscapes in which they may be situated, as well as consider integration of recreational activities where feasible.

The methodology to conduct the scenery and recreational data collection and analysis for the Sun Valley project area was based upon the direction and information provided in the following District documents:

- The Scope of Work developed for the project.
- Policy for Aesthetic Treatment and Landscaping of Flood Control Projects, Flood Control District of Maricopa County, December 1992.
- Aesthetic and Multi-use Design Guidelines for Flood Control Basins and Channels, Flood Control District of Maricopa County, Revision 6, September 2002.
- Landscape Character Assessment for Maricopa County, Flood Control District of Maricopa County, October 2003/October 2005.

#### 1.3.2 U.S. Department of Agriculture – Forest Service Guidelines

The data collection and analysis of scenery and recreational resources for the Sun Valley ADMP area also utilized the recreation and visual resource management concepts and terminology established by the USDA Forest Service. The Forest Service policies are outlined in the following documents:



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- Forest Landscape Description and Inventories – a basis for land planning and design, USDA Forest Service Research paper PSW-49, 1968
- National Forest Landscape Management Volume 1, Agriculture Handbook 434, USDA Forest Service, 1974
- Landscape Aesthetics, A handbook for Scenery Management, Agricultural Handbook 701, USDA Forest Service, 1995

### *1.3.3 Scenery and Recreational Resources Data Collection and Analysis Process*

The process for conducting the scenery and recreational resources data collection and analysis for the Sun Valley project area focused on two major efforts—Scenery Assessment and Recreation Assessment—in three phases each. For Scenery Assessment, three primary elements are used in broad-scale landscape assessment and analysis: landscape character, scenic quality and visual sensitivity. Landscape character is the overall impression created by scenery resulting from both natural processes and positive human influences. Landscape Character includes identification and analysis of existing, historic, and future planned landscape character. Scenic quality includes landscape variety and scenic integrity, which measure the overall uniqueness and level of intrusion into the visual landscape. Visual sensitivity is a measure of how sensitive the viewers of the landscape are to changes in the visual setting.

For Recreation Assessment, the purpose was to create a project area inventory and general assessment of regional facilities and opportunities for future collaboration and connectivity, so that future planning efforts can be efficiently coordinated by the District and its recreation planning partners.

The following is a general overview of the approach used for the scenery and recreational resources data collection and analysis. Refer to Chapter 2 – Scenery Resources Assessment and Chapter 3 – Recreation Resource Assessment for more detailed information regarding the approach.

### *1.3.4 Baseline Data Collection*

The focus of the data collection efforts consisted of review and compilation of several available data sets for historic, existing, and future uses within the Sun Valley project area. The following available secondary data sources were gathered from agencies including Maricopa County, Maricopa Association of Governments (MAG), and local communities.



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- Aerial Photography
- US Geological Survey (USGS) 7.5 minute topographic maps and digital elevation model (DEM) data
- General/area plans and site specific land use plans
- Vegetation maps
- Transportation networks
- Ground reconnaissance photography
- Landscape character types, sub-types and units
- Maricopa County Regional Trail System
- MAG Desert Spaces Plan

In addition to the collections of secondary data from available written and mapped sources, primary data were collected during ground level field reconnaissance consisting of several site visits to the Sun Valley project area. The field reconnaissance was conducted from July to September 2005. The sites visited were intended to confirm and supplement the secondary data and to assess the visual characteristics of the existing landscape.

New data collected that supported the scenery resource assessment included landscape character, scenic quality, viewpoints and visual sensitivity, and the existing, historic and planned future landscape character. The project also developed a geo-referenced photo log for consideration during implementation of future flood control projects within the project area.

New data collected that supported the recreation analysis include identification of designated recreation resources with 10 miles of the project area boundary, planned future recreation opportunities, type of recreation facility and/or open space, and trails.

Data collection and field mapping conducted for the Sun Valley project area were completed using a base map developed from a combination of recent aerial imagery and digital maps developed at LSD.

### *1.3.5 Analysis*

The focus for the analysis was to determine the most suitable areas and compatibility of various flood protection methods to be employed within the Sun Valley project area.



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The scenery assessment had three components that were evaluated: 1) landscape character, 2) scenic quality including a.) landscape variety, and b.) scenic integrity classes including identification of areas for landscape improvement through reclamation/rehabilitation activities, design, and management prescriptions; and 3) visual sensitivity analysis for viewers from areas such as trails, roadways, and residences. The recreational analysis will be used to assist with the identification of opportunities for development of future recreation facilities within and adjacent to those proposed in the ADMP alternatives.

The detailed data analysis allowed for the determination of overall compatibility or suitability of various flood protection methods with the historic, existing, and future Sun Valley area.



## **SECTION 2: SCENERY RESOURCES ASSESSMENT**

### **2.1 Introduction**

The primary purpose of the Scenery Resources Assessment is to: 1) assess the character, quality, and visual sensitivity of lands contained within and adjacent to the project area, 2) provide an analysis of opportunities and constraints for flood protection activities, 3) identify a range of appropriate landscape themes and associated landscape features to apply to the plan alternatives, 4) identify and develop plan alternatives that emphasize achievement of project landscape aesthetic goals, 5) assist in developing the preferred plan, including aesthetic planning and design guidelines, cost estimates for landscaping and aesthetic features, and guidance on needed right-of-way acquisition, and 6) assist in development of the maintenance and implementation plan.

The overall goal of the Scenery Resources Assessment is to maximize opportunities for preserving and enhancing the beauty of the landscape settings of Maricopa County as an integral part of planning for flood protection within the Sun Valley ADMP area.

The Scenery Resources Assessment includes three primary components: Landscape Character, Scenic Quality and Visual Sensitivity. Landscape character and Scenic Quality consist of sub-components which when combined with Visual sensitivity create six visual resource components for analysis and mapping. The Landscape Character component includes assessment of the existing, historic and future planned landscape character. Scenic Quality includes assessment of Landscape Variety and Scenic Integrity. Visual Sensitivity includes assessment of the views from trails, roadways and residential uses where the viewer may be sensitive to changes in the visual landscape. Visual Sensitivity does not have sub-components.

This chapter includes a description of the data collection for the six components of the Scenery Resources Assessment. These components consider the influences of both the natural and cultural environments on landscape character, scenic quality, and visual sensitivity. The six components are: existing landscape character, historic landscape character, planned future landscape character, landscape variety classes, scenic integrity classes, and visual sensitivity. Section 2.7 contains the analysis of opportunities and constraints for implementing the District's flood control methods in the study area.

The existing powerlines in the Sun Valley ADMP area are a very visible intrusion into the natural landscape character. They are especially noticeable in the central part of the planning area



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where they are near Sun Valley Parkway and in other areas where roads or trail are in proximity to the towers and overhead lines. The lattice type towers become less visible even at moderate distances, especially when looking east with the White Tank Mountains. The mountains are the dominant visual feature and the viewers eye is drawn to the color, texture and profile of the mountains instead of the power lines in the foreground. The lines, however do add a certain level of industrial nature to the visual setting in most of the Sun Valley ADMP area, but it is not a dominant characteristic. While there is not a truly undisturbed landscape character in the area, there is also not a significant detractor from the overall visual setting. The effect of the power lines is relatively consistent throughout the planning area, except in the areas of close proximity identified earlier. Though not explicitly identified as a feature in the individual visual components the existence of the power lines was considered throughout the scenery resources assessment and compatibility analysis prepared for the Sun Valley ADMP.

### **2.2 Landscape Character Assessment**

#### *2.2.1 Existing Landscape Character*

The purpose of the existing landscape character assessment is to identify the visual characteristics of the landscape settings found in the Sun Valley study area. The assessment will also help determine the compatibility of flood protection methods the existing of landscape settings and to develop aesthetic guidelines that support and provide direction for the development of flood control facilities within a variety of landscape settings.

The Scenery Resources Assessment is the establishment of a system for identifying, describing, and delineating existing landscape character within the study area at three different scales. This land classification system builds upon the system established by the USDA Forest Service for the Landscape Character Types and Subtypes for the State of Arizona, as well as the District's Landscape Character Assessment for Maricopa County.

The existing landscape character assessment is based on the county-wide assessment prepared by the District, under contract with EPG Inc.. The initial mapping and units were based on the preliminary assessment completed in 2003. That assessment identified seven character units that comprised over 99% of the Study Area. In 2005 the mapping was updated and revised mapping was provided during the planning process. The 2005 version included slightly different units than identified by the 2003 document that was in use at the beginning of the project. Additional landscape



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character units were identified, based on updated land use information from MAG. However, the predominant character units did not change substantially and the basic visual characteristics were described the same as in the earlier report.

The following section describes the Sonoran Desert Landscape Character Type, Subtypes and Character Units found within the planning area. The Character Type is a regional area of land having common distinguishing physical and visual characteristics. It represents the broadest and largest scale of landscape character delineation. The Character Subtype is a subregional area of land size having common distinguishing physical and visual characteristics. Subtypes are divisions of the Character Types that have significantly different visual characteristics from one another. The Character Unit is a local area of considerable size with common distinguishing physical and visual attributes. Character Units are divisions of the Subtype that contain significantly different visual characteristics from one another. Table 2.1 summarizes the hierarchy of the Landscape Character Types, Subtypes, and Units within the Sun Valley Scenery Resources Assessment Area, based on the 2005 mapping.

**Table 2.1**

**Landscape Character within Sun Valley Area**

<b>Landscape Character Type</b>	<b>Sonoran Desert</b>		
<b>Landscape Character Subtypes</b>	Sonoran Mountain Lands	Sonoran River Lands	Sonoran Valley Lands
<b>Primary Landscape Character Units</b>	Natural/Pastoral Bajada Natural/Pastoral Foothills Natural/Pastoral Mountains Rural Bajada Suburban Bajada Suburban Foothills Suburban Mountains Urban Bajada	Natural/Pastoral River Terrace Natural/Pastoral River Channel Rural River Terrace Rural River Channel Suburban River Terrace Suburban River Channel Industrial River Terrace	Natural/Pastoral Valley Plains Rural Valley Plains Suburban Valley Plain Industrial Valley Plainss

A small area of the Sonoran Arizona Uplands Character Type is located in the far northwest corner of the planning area. Early review determined that this area would not be subject to possible flood control improvements because it is on the other side of the Hassayampa River and the Sonoran Arizona Uplands character units are not assessed further in this analysis.



### 2.2.1.1 Sonoran Desert Landscape Character Type

The Sun Valley project is found within the Sonoran Desert Landscape Character Type. This character type is a landscape of striking contrasts and variety and extends to the southern, western, and southeastern borders of Maricopa County. The land is characterized as valleys and basins demarcated by a variety of mountain ranges and foothills drained by a *small number of large rivers/washes and several dry drainages*. Overall, the character type is typified by long views across open desert with desert mountains in the distance. The Sun Valley ADMP area contains all of the typical landscape features found in the Sonoran Desert Landscape Character Type, such as the *White Tank Mountains, Hassayampa River, several ephemeral washes, and valley lands consisting of natural desert open space*. The Sonoran Desert Character Type occupies approximately 86 percent of Maricopa County or about 5,125,320 acres. The elevations of this character type range from approximately 250 feet above sea level to over 5,000 feet above sea level at the top of the Harquahalla Mountains (Maricopa County – Flood Control District, 2004).

### 2.2.1.2 Landscape Character Subtypes

The Sonoran Desert Landscape Character Type has been subdivided further into three landscape character subtypes; *Sonoran Mountain Lands, Sonoran Valley Lands, and Sonoran River Lands*. (2005). The subtypes are based on the differences and similarities of the features that occur within the overall character type.

The Sun Valley project area contains all three character subtypes: Mountain Lands, River Lands and Valley Lands. Brief descriptions of the general characteristics of each subtype are included in this assessment. Detailed descriptions of each subtype can be found in the Maricopa County Landscape Character Assessment.

**Sonoran Mountain Lands Character Subtype** – The Sonoran Mountain Lands Character Subtype consists of the isolated mountains and mountain ranges of the Sonoran Desert. The mountains and mountain complexes are generally widely separated and rise from the desert floor. Included in this subtype are the White Tank, Sierra Estrella, Phoenix, North, McDowell, South, Belmont, Harquahala, Vulture, Belmont, Maricopa, Gila Bend, Painted Rock, Sand Tank, Saucedo, and Crater Range Mountains. This subtype also includes many other geologic formations visually resembling mountains such as the Buckeye and Union Hills.



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The Sonoran Mountain Lands Subtype comprises approximately 43 percent, or 2,190,665 acres, of the Sonoran Desert Character Type within Maricopa County. The Sun Valley ADMP area contains approximately 60,575 acres (about 50% of the study area) of mountain lands. The mountains typically form narrow ranges or combinations of individual peaks extending in length from 10 to 40 miles. They generally trend from the southeast to the northwest, with the exception of the Harquahala, Vulture, and South Mountains. In southwestern Maricopa County, these mountains are generally characterized by wide bases and relatively low elevations ranging up to 1,000 feet above mean sea level (msl), whereas the mountainous areas in the northeast exhibit narrower bases with more dramatic changes in elevations ranging up to 4,000 feet above msl.

**Sonoran River Lands Character Subtype** – The Sonoran River Lands Character Subtype contains the largest and most distinctive water features found within Maricopa County. These features are comprised of the watercourses and associated vegetation communities of the Salt, Gila, Verde, Hassayampa, and Agua Fria rivers. They form a large tributary system that drains a majority of the mountain and valley lands of the Sonoran Desert within Maricopa County. This tributary system is a unique feature that distinguishes the Sonoran Desert from other regions of the Basin and Range Physiographic Province that typically drain into large salt flats called playas.

The Sonoran River Lands Character Subtype covers approximately 246,831 acres and comprises approximately 5 percent of the Sonoran Desert Landscape Character Type in Maricopa County. The longest, the Gila River, extends in overall length approximately 90 miles. The Verde River is the shortest, extending in overall length approximately 20 miles. The Sun Valley ADMP area contains approximately 19,454 acres (about 16% of the study area) of river lands. Elevations within the subtype range from 1,700 feet where the Verde River enters northeastern Maricopa County, to 800 feet above sea level where the Gila River exits in the Southwest.

**Sonoran Valley Lands Character Subtype** – The Sonoran Valley Lands Character Subtype comprises the valley floor of the Sonoran Desert. The subtype generally surrounds and encompasses the Sonoran Mountain Lands Character Subtype and, is itself, divided into irregular parts by the Sonoran River Lands Subtype. Included within the subtype are Luke and Higley basins; Hassayampa, Harquahala, Gila Bend and Palomas plains; Rainbow,



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Paradise, Dendora, Arlington, Childs, Saucedo, Kaka and Citrus Valleys; Tonopah Desert; and the Buckeye and Whitman areas of Maricopa County.

The Sonoran Valley Lands Subtype contains approximately 2,687,824 acres and comprises approximately 52 percent of the Sonoran Desert Character Type in Maricopa County. The Sun Valley ADMP area contains approximately 39,900 acres (about 33% of the study area) of valley lands. Elevations within the subtype range from a little over 400 feet in the southwest near the Gila River to a little over 1,600 feet in northeastern Maricopa County near the City of Scottsdale.

### 2.2.1.3 Existing Landscape Character Units

The following section provides a brief description of the primary Landscape Character Units found within the Sun Valley ADMP study area. The existing landscape character units are shown on Figure 2.1. The descriptions are based on the Maricopa County Landscape Character Assessment (Maricopa County 2005) and detailed descriptions of the units can be found in that document. Representative photographs of the landscape character units are included with the description and additional photographs of the landscape character units are found in Appendix C. The photographs were taken during the summer of 2005 and were also used in the Scenic Quality Assessment described in Section 2.5

Since the units comprise the vast majority of the study area the descriptions provide a good overview of the existing visual conditions. The additional units contained in the 2005 Assessment do not materially alter the basic description of the visual setting. The additional or secondary units that have been identified in the study area are listed at the end of the section and the descriptions can be found in the Maricopa County Landscape Character Assessment (2005).

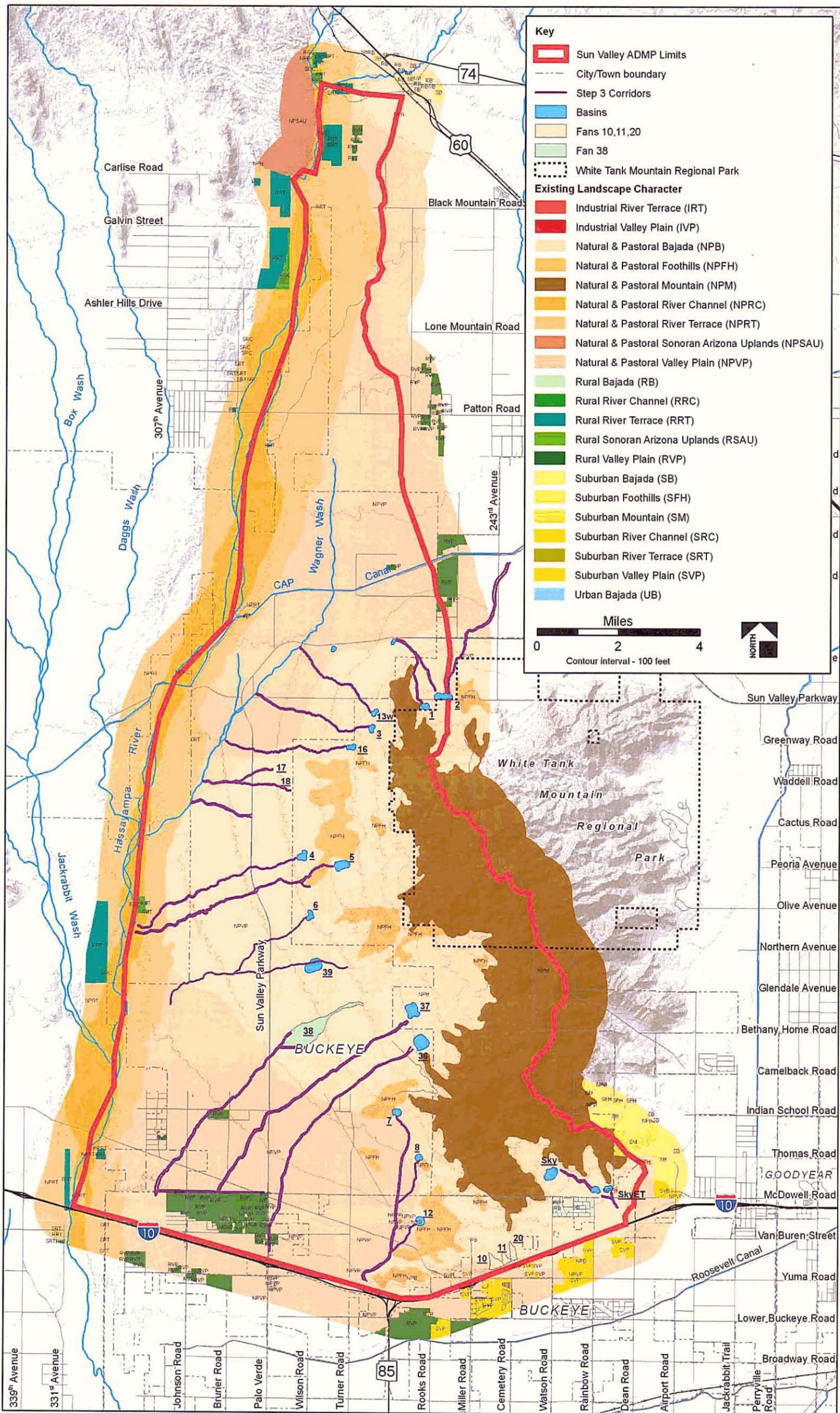


Figure 2.1  
Existing Landscape Character Units



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**Natural and Pastoral Mountains Landscape Character Unit** – The Natural and Pastoral Mountains Character Unit (Figure 2.2) is predominant in the Mountain Lands Subtype and occupies approximately 9 percent of Maricopa County. There are approximately 15,680 acres of this Character Unit within the ADMP area. Generally, three types of mountains exist within the County including northeast trending metamorphic core complexes with their characteristic domed shape, northwest trending Basin and Range mountains with their long narrow bases and craggy peaks, and volcanic mountains consisting of long ridges and isolated and striking peaks and hoodoos<sup>1</sup>. All three mountain types consist of steep, jagged slopes intersected by v-shaped ravines, which channel eroded material (detritus) and runoff to the Bajada Character Unit below. The upper elevations of mountains exhibit bare rock covered with desert varnish. Inversely, the more level lower elevations exhibit more vegetation, although still sparse when compared to the Bajada Character Unit.

**Natural / Pastoral Bajada Landscape Character Unit** – The Natural and Pastoral Bajada Character Unit (Figure 2.3) occupies approximately 22 percent of Maricopa County. There are approximately 40,320 acres of this Character Unit within the Planning Area. The Bajada is a slightly sloping landform exhibiting a braided network of u-shaped shallow washes and arroyos. Typically, this physical division begins at the base of the Mountains Character Unit and extends downward to the Valley/Plains Character Unit. The soil, composed of primarily detritus (eroded rock, sand, and silt) originating from the mountain slopes and peaks, is extremely fertile and provides excellent drainage. These soil conditions allow Sonoran vegetation to flourish, especially the saguaro, which typically requires good drainage for its small and shallow root system to function properly. The resulting dense saguaro stands, sometimes referred to as “forests”, characterize this physical division and the rest of the Sonoran Desert. In addition, the Bajada Character Unit includes volcanic hills with saguaros associated with the Sentinel Volcanic Field in southwestern Maricopa County and the upland valleys of northern Maricopa County that sometimes exhibit stands of saguaro, palo verde, and mixed cacti.



**Figure 2.2**  
**Natural/Pastoral Mountains**



**Figure 2.3**  
**Natural/Pastoral Bajada**



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**Natural / Pastoral Foothills Landscape Character Unit** – Natural and Pastoral Foothills Character Unit (Figure 2.4) occurs in the Mountain Lands and occupies approximately 6 percent of Maricopa County. There are approximately 4,235 acres of this Character Unit within the ADMP area. A large variety of foothill types exists in Maricopa County and varies in size, elevation, and surface character. In the Sun Valley, study area the foothills character unit is a *minor portion of the landscape and is dominated by the Mountains* character unit of the White Tanks Mountains. The primary differences between the Mountains Character Unit and the Foothills Character Unit include the scale of the landforms, the occurrence of v-shaped ravines, and vegetation cover. Generally, foothills consist of gentle to steep slopes bisected by u-shaped valleys, occasionally v-shaped ravines, and peaks that are smooth to angular. In Sun Valley the foothills are small, somewhat isolated landforms and in most cases are contained within the Bajada character unit and are not adjacent to the Mountains. Saguaro, palo verde, and cactus occur in varying densities and compositions across the units. The vegetation patterns, although not as dense, resemble the Bajada rather than the sparsely vegetated Mountains Character Unit.

**Natural and Pastoral River Channel Landscape Character Unit** – The Natural and Pastoral River Channel Character Unit (Figure 2.5) occurs within the Sonoran River Lands Subtype and occupies approximately 1 percent of Maricopa County. There are approximately 3,870 acres of this Character Unit within the ADMP area. The River Channel Character Unit usually consists of a braided network of small shallow channels that typically exhibit slight undulations between the channels. In the Sun Valley study area the River Channel character unit is associated with the Hassayampa River and is a wide, flat, sandy bottom channel with smaller side channels in a few locations. Steep banks are found on both sides of the River channel in many locations and the River Terrace Character Unit above the bank is situated at the higher elevation. *It is at the boundary of these two units where the characteristic cottonwood tree occurs, although they do occur in other areas depending on environmental conditions that occur within this physical division.* At Sun Valley, cottonwood does not appear to have been a significant species as it is in the more northern reaches of the river. The river channels of the Hassayampa and Aqua Fria Rivers are similar in landform but dissimilar in vegetation. These river channels tend to be occupied by xeroriparian species such as mesquite and palo verde. The occurrence of tamarisk is much lower in these drier river channels.



**Figure 2.4**  
**Natural/Pastoral Foothills**



**Figure 2.5**  
**Natural/Pastoral River Channel**



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**Natural and Pastoral River Terrace Character Unit** – The Natural and Pastoral River Terrace Character Unit (Figure 2.6) occurs within the Sonoran River Lands Subtype and occupies approximately 3 percent of Maricopa County. There are approximately 15,170 acres of this Character Unit within the Planning Area. The River Terrace Character Unit consists of multiple elevations of linear flat lands demarcated by eroded rims. At Sun Valley, the river terrace has very rolling topography from numerous small drainages that enter into the Hassayampa River. The ground surface is covered with a mixture of gravel and sand, providing the appropriate drainage for desert vegetation to occur. Saguaro and other Sonoran Desert species exist in varying densities and compositions.

**Natural and Pastoral Valley Plains Character Unit** – The Natural and Pastoral Valley Plains Character Unit occurs within the Sonoran Valley Lands Subtype. There are approximately 38,350 acres of this Character Unit within the Planning Area. The Valley Plains consists of a slightly sloping plain composed of compressed sediment thousands of feet deep. Surface veneer varies across the landscape including sand, desert pavement, caliche, and loose gravel. Vegetation varies across the landscape depending on elevation, soil conditions, and adjacent landscape types. The upper elevations, adjacent to the Bajada, sustain a mixture of saguaro, palo verde, creosote, and cactus. The lower elevations adjacent to the River Terrace unit exhibit large areas of predominantly widely spaced creosote bush. Undisturbed drainages allow saguaro and a variety of other plant species that typically occur in upper elevations of this physical unit to occur in the lower elevations.

**Rural Valley Plain Landscape Character Unit** – This character unit in Sun Valley lacks many of the agricultural features typically associated this unit in other areas. In the Sun Valley ADMP area, this unit is mostly very low density, rural residential units, many with horse facilities. There is a grid street system, but it does not have a developed streetscape. Vegetation, mostly introduced species mixed with some remaining native vegetation, is typically planted in front or rear yards. The cultural setting is predominant in this landscape character unit with color and line being the prevailing visual elements. The forms and lines are still generally horizontal and do not dominate the horizon. There are approximately 1,560 acres of this Character Unit within the ADMP area.

**Additional Landscape Character Units** – Table 2.2 lists the additional landscape character units depicted in the 2005 Landscape Character Assessment of Maricopa County. The units are generally scattered parcels and comprise less than 1% of the Study Area.



**Figure 2.6**  
**Natural/Pastoral River Terrace**



**Figure 2.7**  
**Natural/Pastoral Valley Plain**



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Since the updated character unit mapping was received during the planning process, the additional units were not identified for assessment in the original Scope of Work. Descriptions of the units can be found in the Landscape Character Assessment of Maricopa County. Inclusion of these units would not likely have materially alter the Scenery Resource Assessment for Sun Valley since they comprise a very small amount of the overall project area.

Table 2.2

Updated Landscape Character Units (2005 Assessment)

Landscape Character Subtypes	Sonoran Mountain Lands	Sonoran River Lands	Sonoran Valley Lands
Secondary Landscape Character Units	Rural Bajada Suburban Bajada Urban Bajada Industrial Bajada Rural Foothills Suburban Foothills Suburban Mountains	Rural River Terrace Suburban River Terrace Industrial River Terrace Rural River Channel Suburban River Channel	Suburban Valley Plain Urban Valley Plain

### 2.2.2 Historic Landscape Character Assessment

Human occupation has occurred in the area where greater Phoenix is located since the arrival of pre-historic Native Americans. To better understand the range of cultural resources that may be present, in the study area, The District requested the preparation of a cultural resource report that focused on the Sun Valley study area. The report, "An Archeological Overview of the Sun Valley ADMP Area of West-Central Maricopa County, Arizona", was completed in August 2005. Archival research was the primary method used for preparing the report and was supplemented with a small amount of fieldwork. Several master planned communities in the study area are in various stages of planning, design, and construction. Cultural resource reports that may have been prepared for those developments were not reviewed as part of this project.

The Sun Valley overview identified over 80 cultural resource investigations that had been previously completed. Fifty-three of the studies were intensive field surveys that covered about 8,800 acres or less than 12% of the study area. Many of the sites have been disturbed or destroyed. Generally the Sun Valley ADMP area was not historically or pre-historically widely occupied or settled. The survey projects identified have primarily been carried out at sites in the southern portion



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of the study area and numerous historic roads cross the southern and central portions of the study area.

### 2.2.2.1 Historic Landscape Character Themes

The archeological overview for Sun Valley identified two pre-historic and nine historic cultural landscape themes. These themes, based on the uses of the area and types of sites may represent opportunities to incorporate aspects of the cultural landscape into the visual character of future flood control facilities. The themes identified are shown in Table 2.3.

**Table 2.3**

#### **Historic Landscape Character Themes**

Prehistoric– (A.D. 400–1450)	Historic– Arizona Territorial (1863–1912) and Statehood (1912–1952) periods
<ul style="list-style-type: none"> <li>○ Temporary habitation</li> <li>○ Resource exploitation</li> </ul>	<ul style="list-style-type: none"> <li>○ Canal irrigation</li> <li>○ Community growth and development</li> <li>○ Farming</li> <li>○ Homesteading</li> <li>○ Mining</li> <li>○ Railway transportation</li> <li>○ Ranching</li> <li>○ Roadway transportation</li> <li>○ Trash deposition</li> </ul>

### 2.2.2.2 Historic Landscape Character Zones

Based on the analysis of the type of sites identified in the Archeological Overview, several zones have been identified that could be used in the development of themes for multi-use facilities (Figure 2.8). Flood control facilities in Sun Valley ADMP area. These zones are general areas where there is a concentration of sites of related types. As additional surveys are performed in advance of development, additional sites in those areas could be expected. The zones could also be used to assist communities in developing interpretive components in conjunction with flood control facilities and perhaps influence the landscape development of the facilities.

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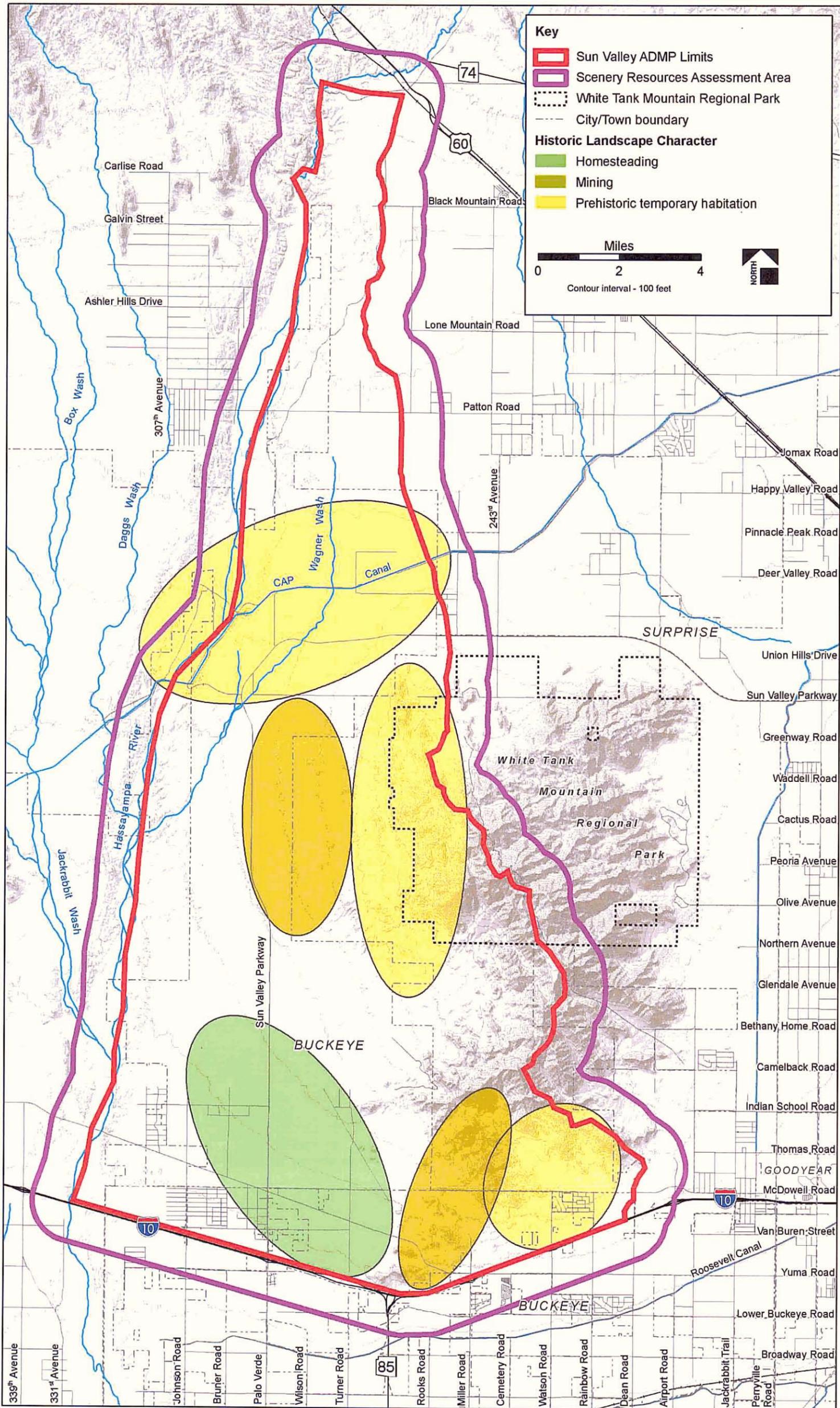


Figure 2.8  
Historic Landscape Character



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### 2.2.3 *Planned Future Landscape Character*

The rapid development of the Sun Valley area will change the character of the visual landscape. The relatively undisturbed setting will be replaced with a landscape dominated by the forms, lines and colors of suburban development. The general form of the land will stay similar to the existing conditions and the scene will be one of development occurring primarily on the valley plains and bajadas. Figure 2.9 shows a composite of several of the approved master planned communities that are in various stages of development in the Sun Valley area. The development will ascend the shallow slopes up to the base of the White Tank Mountains and descend to the edge of the Hassayampa River. The mountains and the river will continue to be the dominant natural features and the mountains especially will become a striking visual contrast to the development below. This is reinforced by the MAG Desert Spaces Plan which identifies high to medium high priority areas near the White Tanks Regional Park and suggests general strategies to maintain the important areas as open space.

The Planned Future Landscape Character Units for the Sun Valley ADMP area were identified in the *Landscape Character Assessment for Maricopa County (2005)* and the mapping of the units was created using data for that report. As shown in Figure 2.10, six character units comprise the vast majority of the future change in the landscape character of the Sun Valley ADMP area. A summary of the Planned Future Landscape Character of the project area is provided below along with brief description of the six primary units. Detailed descriptions of all the units can be found in the County Assessment document.

The dominant planned future landscape character units will be the rural and suburban versions of the Natural/Pastoral Bajada and Valley Plains units as the natural landscape is converted to development. Those units will occupy nearly all the area between the White Tank mountains and the Hassayampa River and will eventually comprise about 78% of the Sun Valley ADMP area. Cultural elements will dominate the landscape with forms and lines becoming rectilinear and color changing from the green of vegetation to the typical earth tones of suburban development. Along the river, the suburban river terrace and suburban river channel will replace the natural/pastoral settings as development is expected to encroach to near the river's edge.

The White Tank Mountains will retain their natural/pastoral character though in some areas the sense of a natural landscape will be lost because of the proximity of adjacent

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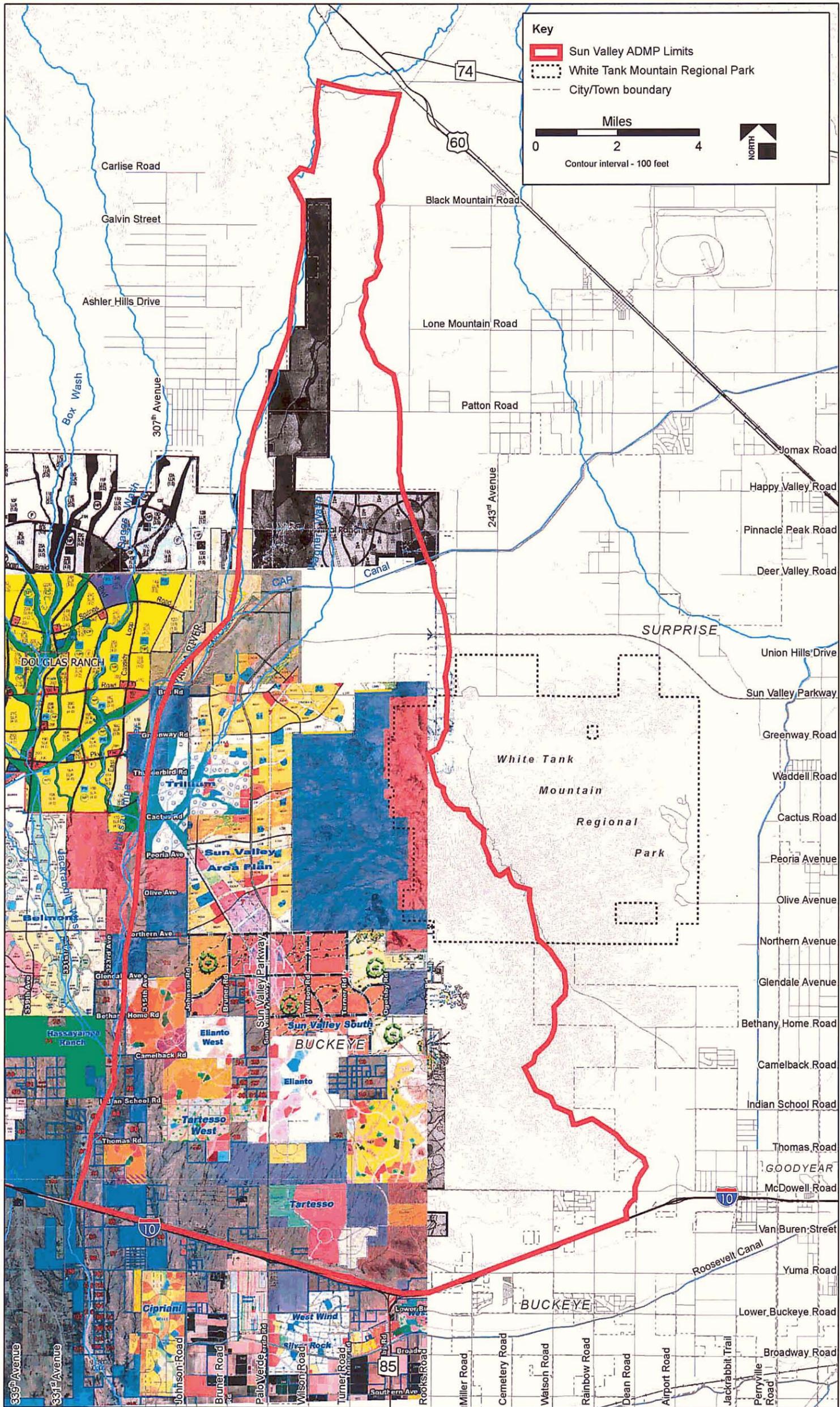


Figure 2.9  
Proposed Master Planned Communities

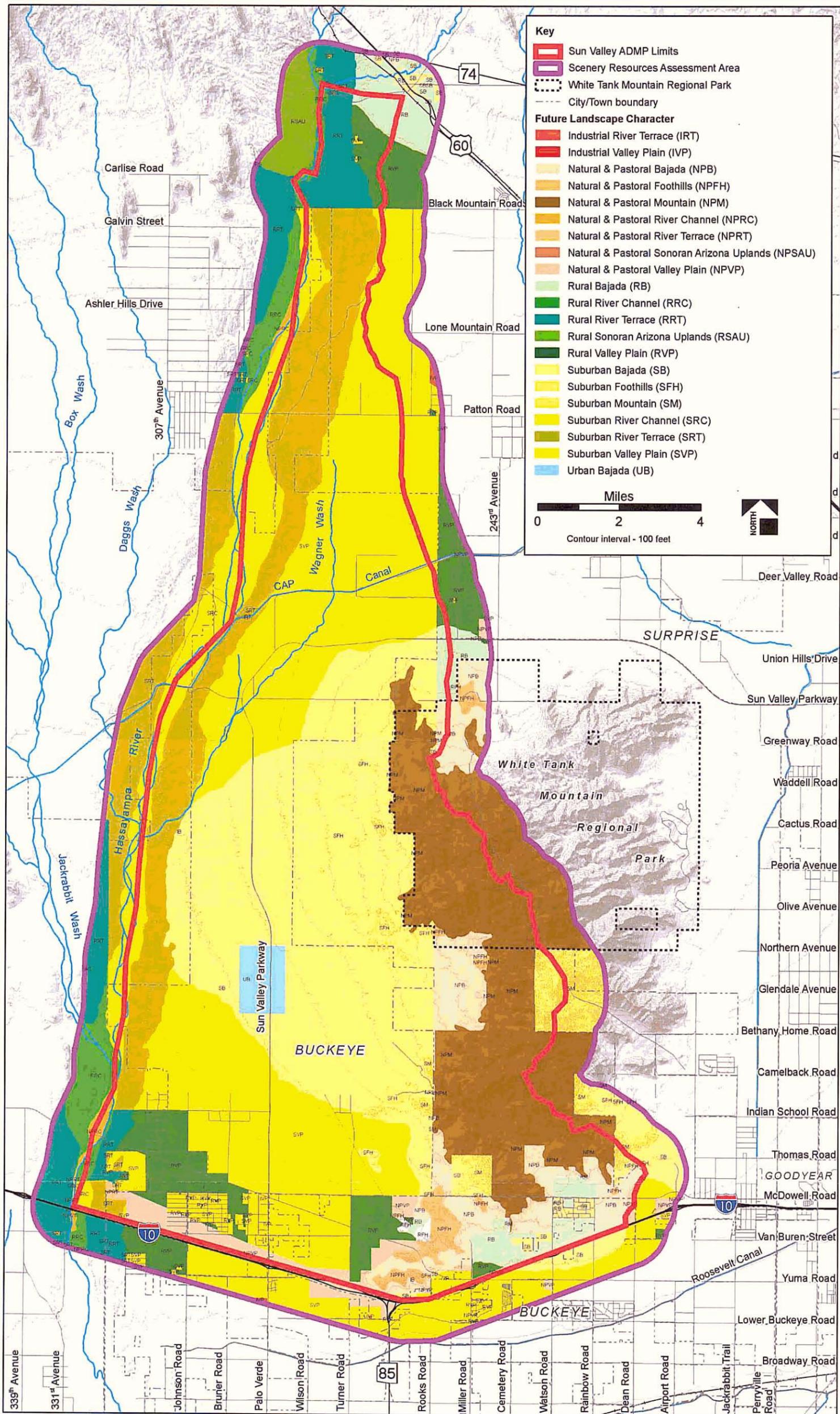


Figure 2.10

Planned Future Landscape Character Units



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development. Natural/pastoral mountains, bajada and river character units will still cover large areas and coupled with small areas of natural/pastoral foothill and valley plains a natural character will be retained on about 20% of the study area. The natural character of the mountains will form a prominent backdrop for developments that occur on the lower slopes of the Bajada.

### 2.2.3.1 MAG Desert Spaces Plan

The MAG Desert Spaces Plan identifies over 500,000 acres of high to medium high priority areas around the White Tanks Regional Park. Much of it is in public ownership and but are considered unprotected. Small areas are also in private ownership. Most of the areas near the mountains are identified as conservation areas in the Plan and would be managed by the public and private owners for conservation. Lower priority areas extend northwest from the White Tank Mountains to the Hassayampa River near Wickenburg. While not as high priority as other areas the open space would provide a vital link between the mountains and the river. Implementation of the MAG Desert Spaces Plan would retain substantial areas of the existing Sonoran Desert character and provide open space that is integrated into the planned regional network of open space in Maricopa County.

### 2.2.3.2 Rural Valley Plain

The formal patchwork-like appearance of the rural setting harmonizes with the horizontal lines associated with the valley plains. This leads to a landscape character unit where the cultural and natural attributes are co-dominant. The lack of vertical elements in both the rural setting and physical division reinforce the visual harmony of the unit. Furthermore, all elements of form, line, color, texture in both the natural and cultural landscapes retain their identities in this landscape character unit.

The Rural Valley Plains Landscape Unit consists of a slightly sloping (indiscernible to the naked eye) flat broad surface with shallow surface undulations. The development pattern of the rural setting is predominantly based on a grid pattern and is low-density residential land use. A rectilinear street system consisting of improved and unimproved roads provides the primary circulation system. Normally, one to two story homes are situated adjacent to other homes or undisturbed desert. Other structures such as storage sheds are common occurrences in the landscape. This setting is open in nature, usually lacking physical barriers between undisturbed desert and the residences.



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### 2.2.3.3 Suburban Valley Plain

The organizational element of the suburban setting, the grid, is uninhibited in this physical unit. The result is a complete transformation of the visual landscape from the medium texture of the creosote flats and wide-open views to the hard angular lines associated with strip malls and the large mass of residential red tile roofs. Vegetation, mostly introduced species, is typically planted along city streets and neighborhoods, further articulates the grid and results in straight line and introduced color. The cultural setting is predominant in this landscape character unit with color and line being the prevailing visual elements.

The Suburban Valley/Plains consist of a slightly sloping (indiscernible to the naked eye) flat broad surface with shallow surface undulations where the land has not been disturbed. The landscape unit typically starts at the edge of the Bajada Physical Division, sloping downward towards the river terrace physical division. The vegetation in undisturbed areas of the Suburban Valley/Plains ranges from mixed paloverde and cacti including saguaro, adjacent to the Bajada Physical Unit, to creosote flats adjacent to the Sonoran River Land. Where development has occurred, introduced species are fairly common and include a wide variety of species from around the world.

The development pattern of the suburban setting is usually uniform and based upon a formal or semi-formal grid pattern at a macro scale. The circulation systems for individual developments can be rectilinear or curvilinear, with nonnative to native vegetation planted adjacent to streets. Residential structures are the predominant building types that occur within the suburban setting. The structures tend to be one to two stories that are spatially based on rectilinear parcels.

Open space in the suburban setting typically includes golf courses and neighborhood and regional parks. High-end large-lot residential and commercial developments often occur adjacent to the open space that occurs in the suburban fabric.

### 2.2.3.4 Suburban Bajada

The undulating sloped landform of the Bajada typically softens the structured circulation and development patterns associated with suburban settings. At Sun Valley this landscape unit will include master planned communities with large residential lots that abut the mountains and medium to small-sized lots separated by arroyos (often functioning as open space). Access tends to be curvilinear in nature in response to the terrain, meandering



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around each arroyo and ascending and descending to different elevations of the Bajada, resulting in lines that are soft and flowing.

The Bajada sustains the most diverse and dense vegetation communities found throughout the Sonoran Desert Character Type. The most visually notable plant that occurs within this unit is the saguaro. Another common plant is the palo verde, which sometimes forms large, contiguous stands of medium sized trees. Other vegetation that occurs in relatively high densities includes barrel cactus, prickly pear cactus, bursage, creosote, cholla, ironwood, and catclaw acacia.

The development pattern of the suburban setting is usually uniform and based upon a formal grid pattern. In this landscape unit, the grid pattern responds to the physical constraints imposed by the many drainages that occur on the surface of the Bajada, resulting in an informal development pattern. The suburban bajada's circulation systems are generally rectilinear with nonnative to native vegetation planted adjacent to streets. Residential structures are the predominant building types that occur within the suburban setting. The structures tend to be one to two stories on moderate sized lots parcels. Higher end residential developments tend to be organized more informally, with curvilinear access and spatial arrangements of the structures. Larger "big box" commercial developments occur at *intersections of main access routes* and include a wide variety of structure sizes ranging from individual rectilinear one story buildings to large two story strip malls. Open space in the suburban setting typically includes golf courses and neighborhood and regional parks. High-end large-lot residential and commercial developments often occur adjacent to the open space that occurs in the suburban fabric.

### 2.2.3.5 Suburban Foothills

*The Foothills Physical Landscape Unit inhibits the grid pattern associated with the suburban setting primarily because of topographic relief. The formal rectilinear lines associated with circulation patterns in the suburban setting are transformed to curvilinear line when they intersect the rolling forms of the foothills. Structures associated with the suburban setting, primarily residential, are organized adjacent to the modified grid pattern. The result is a landscape where both the cultural and natural landscapes are visually predominant.*

Typically, the landforms of the Foothills Physical Division consist of slightly sloping to steep, naturally shaped landforms with moderate topographic relief. The scale of the forms



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ranges from a few acres to several thousand acres, forming a complex that resembles mountains. The foothills may exhibit mountain-like forms such as jagged peaks and extremely steep slopes. A medium density of Sonoran vegetation is typical, including saguaro, paloverde, ironwood, and mixed cactus and much of the vegetation could remain in place in some areas based on the development patterns. The inhibiting nature of the foothills results in a more informal development and circulation pattern

Residential structures are the predominant building types that occur within the suburban setting. The structures tend to be one to two stories on larger lots than in some of the other character units because of the topography. Higher end residential developments tend to be organized more informally, with curvilinear access and spatial arrangements of the structures. Open space in the suburban setting typically includes golf courses and neighborhood and regional parks. Commonly, high end large lot residential and commercial developments occur adjacent to the open space that occurs in the suburban fabric.

### 2.2.3.6 Suburban River Terrace

The river terrace is visually subordinate to the suburban setting. The hard angular line of the grid development pattern is repeated in this landscape. Vegetation is planted adjacent to the major linear arterials adding color and texture to the landscape. However, the flowing edge of the terrace softens the grid resulting in a line that is curvilinear. Occasionally, developers take advantage of the softness associated with the river terrace and design trails or pedestrian pathways adjacent to it. Although the developed setting is dominant in this landscape, the terrace edge is well articulated when viewed from various locations in the landscape. Vegetation varies in this physical division primarily based on the river flow (e.g., perennial, ephemeral, or intermittent) associated with the adjacent River Channel character unit. Mesquite tends to occur adjacent to river channels that exhibit perennial to ephemeral flow regimes.

The development pattern of the suburban setting is usually uniform and based upon a formal grid pattern at a macro scale. At a micro scale, the streets and residential structures immediately adjacent to the terrace must respond to the flowing edge, which results in an informal development pattern. The circulation systems tend to have nonnative to native vegetation planted adjacent to streets. These plantings reinforce the street pattern that the suburban setting is based upon. However, at a smaller scale, the circulation may be more curvilinear, responding to the terrace.



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Residential structures are the predominant building types that occur within the suburban setting. The structures tend to be one to two stories that are spatially based on *rectilinear parcels*. Higher end residential developments tend to be organized more informally, with *curvilinear access* and spatial arrangements of the structures. Open space in the suburban setting typically includes golf courses and neighborhood and regional parks. Commonly, high-end large lot residential and commercial developments occur adjacent to the open space that occurs in the suburban fabric. The terrace becomes the main element of open space within the suburban setting.

### 2.2.3.7 Urban Bajada

Though not identified in the County landscape character mapping for Sun Valley, an area of Urban Bajada was identified based on the proposed master planned communities. The hard angular lines and bold forms of the urban landscape setting dominate the soft visual elements associated with the Bajada. The form of the Bajada is gentle and subordinate because of its lack of vertical topographical features and horizontal orientation. The scale and density of the urban landscape setting and resulting infrastructure (i.e., sewage, water pipes, etc.) completely replaces all that was natural in the Bajada except for the largest arroyos. In addition, urban settings typically are formal and use shiny and contrasting colors and textures that dominate the subdued green gray hues of the Bajada landscape. Buildings are typically massed in high densities, resulting in bold form which adds contrast to the typically subtle and soft landscape of the Bajada.

The vertical development pattern typically associated with the urban setting is based on a *modified grid pattern within this landscape unit*. The geometric shapes associated with urban structures are recurrent throughout the landscape. Circulation patterns of this landscape unit typically emulate the modified grid patterns that dictate the development pattern. The streets tend to be narrow in nature because of the densely arranged structural elements. Formal arrangements of low-density vegetation occur adjacent to streets and pedestrian sidewalks, articulating the modified grid circulation pattern.

A large variety of building types exist in this landscape unit. Apartment style residences, two to five stories in height, typically occur on the perimeter of the urban environment. High-rise office buildings constructed of concrete, steel, and glass, and ranging from 4 to 10 stories occur towards the middle of the landscape unit, forming the core associated with urban settings. Large open spaces generally do not occur in the urban setting



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because of the density of the structures and associated circulation patterns. However, small open spaces associated with undisturbed tracts of desert occur frequently throughout the landscape.

### 2.3 Scenic Quality Assessment

The purpose of the scenic quality assessment was to determine the relative scenic value of the landscapes found within the Sun Valley project area. Identification of areas of high scenic quality will help guide the development of flood control measures to preserve and protect those areas to the extent possible. Identification of areas of low scenic quality may offer opportunities for enhancement or improvement through implementation of the Sun Valley ADMP. The assessment of scenic quality consists of two components; the evaluation of landscape variety classes and the scenic integrity classes.

#### 2.3.1 Methodology

Landscape variety classes and scenic integrity classes were developed based on the existing landscape character units. Each landscape character unit was evaluated in the field from a minimum of three and up to six representative locations. The evaluation points were located at dispersed points in each unit to provide a general overview of the unit in the overall planning area. Each unit was assigned a variety class and a scenic integrity class rating at each evaluation point. After the units were evaluated from all points, each unit was assigned an overall variety class and scenic integrity class based on the average of the individual ratings. Many of the landscape character units are very large and cover extended portions of the study area. The use of multiple points to evaluate the units reduces the influence of positive or negative features that could occur at a given location within the unit. The result is a better overall assessment of the scenic quality components of the character units in the study area. The evaluation forms and photographs of each unit depicting the variety and integrity are located in Appendix A.

#### 2.3.2 Landscape Variety Classes

Landscape variety classes are based upon the premise that all landscapes have an inherent degree of scenic value. Landscapes with a high degree of diversity or distinctive variety have the most potential for high scenic appeal.

Variety classes were separated into three categories including:

- Class A-landscapes with outstanding or distinctive scenic value



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- Class B-landscapes with common or typical scenic value
- Class C-landscapes with indistinctive or nominal scenic value

Figure 2.11 illustrates the landscape variety classes found in the Sun Valley project area.

**Variety Class A** – The areas that received an evaluation rating of Variety Class A are primarily associated with the White Tank Mountains and Hassayampa River. These elements, in their mostly undisturbed state, represent distinctive features that are not commonly found throughout the County. *The Bajada on the west flank of the White tanks is a highly diverse and distinctive landscape* was evaluated as variety Class A. The White Tank Mountains were assigned an A+ rating to distinguish them from the Bajada since they are an even more distinctive feature in this area. The refinement of the variety class retains the high scenic quality ratings of the Bajada landscape character unit while distinguishing the specific positive attributes of elements within the overall outstanding landscape.

**Variety Class B** – The balance of the study area, not assigned to Class A received a variety class B rating. The Valley Plains are more common in the Sonoran desert but areas of Sun Valley retain a greater density and variety of vegetation than is normally found on shallow-sloped areas. Much of the Valley Plains character unit in the Study Area forms a transition zone to the adjacent Bajada unit and thus retains some of those topography and vegetation characteristics, resulting a higher quality visual landscape. The isolated foothills at the base of the White Tanks were also evaluated as Class B for landscape variety. While the foothills landforms are somewhat common in the regional landscape the distinctiveness of the surrounding Bajada resulted in less than outstanding rating for the foothills. Except for the variable topography, the foothills in this area are closer in characteristics such as vegetation variety to the shallow plains than the nearby mountains.

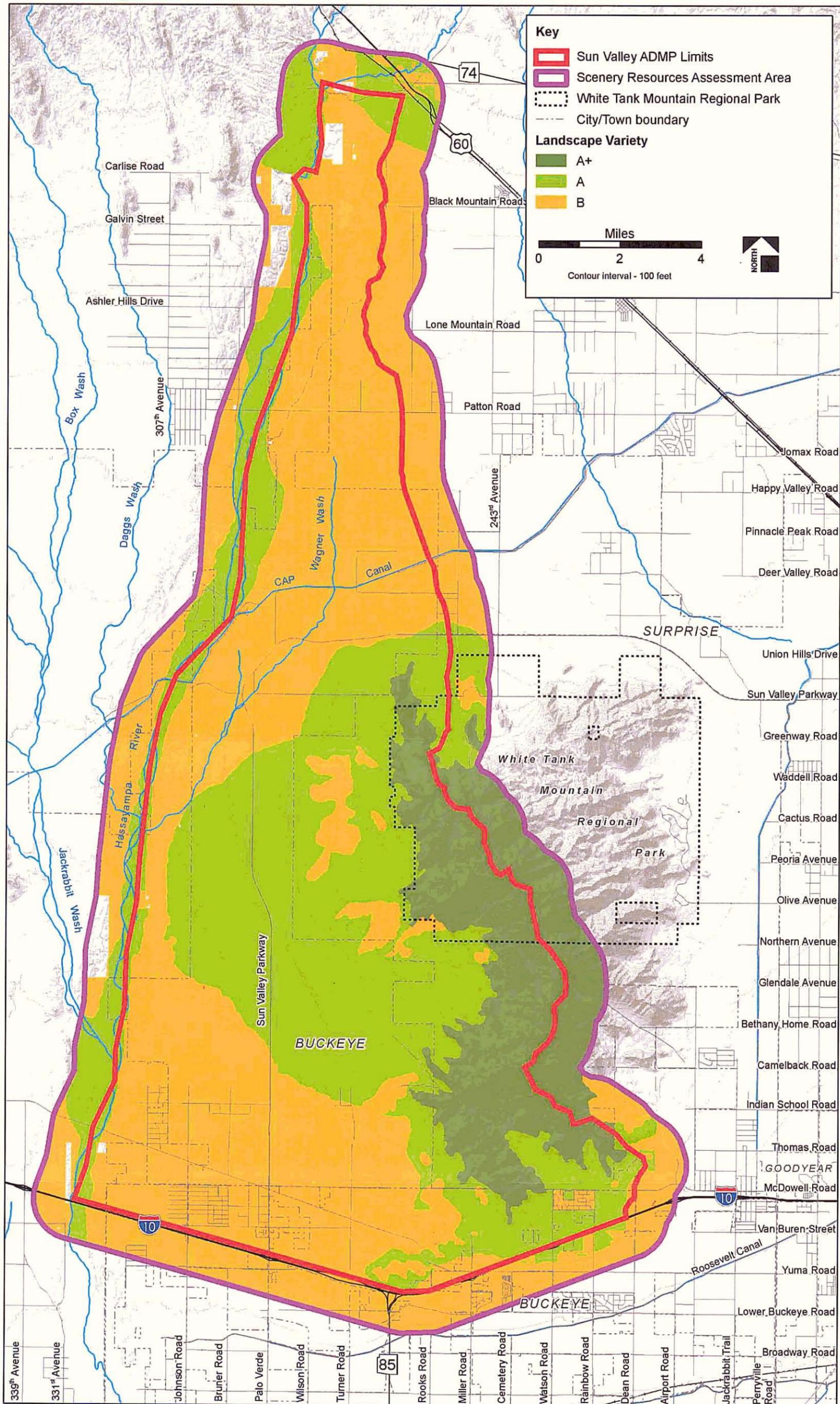


Figure 2.11  
Landscape Variety



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### 2.3.3 Scenic Integrity Classes

Scenic integrity indicates the degree of intactness and wholeness found throughout the landscape as well as how a landscape is perceived in terms of completeness with respect to its aesthetic appeal. Scenic integrity is essentially a measure of the degree of visible disruption or deviation in the typical form, line, color, and texture of natural and cultural features found in the study area. Scenic integrity classes fell into three categories including:

- High—landscapes with features and areas that appear to be visually intact and devoid of negative deviations that detract from the visual character of the landscape unit or sub-unit
- Moderate—landscapes with features and areas that contain slightly to moderately evident negative deviations that detract from the visual character of the landscape unit or sub-unit.
- Low—landscapes with all features and areas containing negative deviations that strongly detract from and visually dominate the visual character of the landscape unit of sub-unit

Lower scenic integrity does not necessarily imply less overall value. But could represent areas where there are opportunities to improve the scenic integrity through future management and design decisions. The scenic integrity classes found throughout the Sun Valley study area are shown in Figure 2.12 area.

The character of the native Sonoran Desert setting is substantially intact, and with limited development, in the Sun Valley ADMP area. The vast majority of the landscape is of high scenic integrity with most disruptions limited to small areas that area visible within a limited area. The landscape of the Sun Valley ADMP area is changing rapidly and new construction has caused significant disruptions to the integrity of the landscape since the initial evaluation.

Moderate scenic integrity landscapes identified in the Sun Valley project area occur along the Hassayampa River. The river while mostly intact does have several locations where sand and gravel mining operations or agricultural uses disturb the naturalness of the visual landscape.

Areas of low scenic integrity were identified in areas where low-density residential development has occurred and in proximity to the existing Flood Control Structures 1, 2 and 3. In proximity to the residential development, it disrupts the natural landscape and dominates the visual character of the Natural/Pastoral landscape character units. The existing FRS form



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the southern boundary of the study area and extend from the Hassayampa River, approximately 14 miles to the east to near the foothills of the White Tank Mountains. The structures are substantial negative deviations in the landscape and dominate the visual setting over a much larger area than existing development. The District is currently developing a rehabilitation plan for the structures to address safety issues and a scenery resource assessment and recreation opportunities assessment are part of that study. Outlined below are several recommended aesthetic treatments that could be incorporated into the proposed retrofit of the existing FRS to be compatible with the existing landscape setting.

### Existing FRS retrofit opportunities:

- Plate structural form of facilities with native soil to create variable slopes up to 4H:1V maximum. Use plating on top of structures to create vertical undulation in O&M road on top of structure.
- Landscape flood pool areas with native vegetation species and patterns to mimic the Natural Valley Plains and Bajada landscape character.
- Develop O&M road below FRS into multi-use recreation trail to provide a connection from the Hassayampa River to the White Tank Mountains. The current O&M road on top of structures are not suitable for recreation use because the top of the structure is too narrow to provide safe conditions. If enough plating material can be incorporated into the structure to widen the top to approximately 30' the O&M road could be used for recreation purposes.
- Develop portions of the flood pool areas with active recreation play fields to meet future needs of the Town for regional park facilities.
- Re-grade the flood pool areas to create low areas and islands for landscaping with native vegetation. Grading design should mimic the natural landforms of the Valley Plains and Bajada character units.

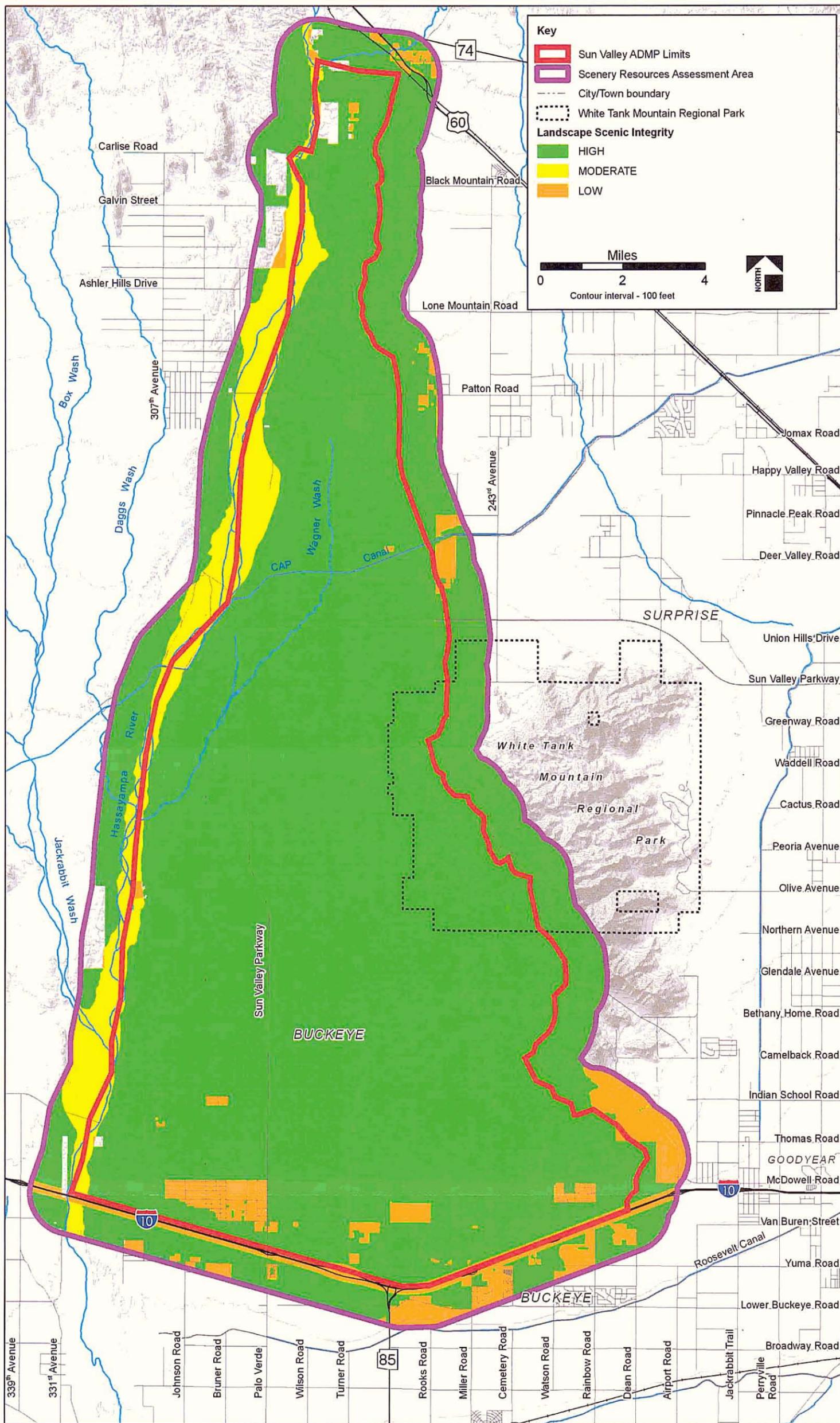


Figure 2.12  
Scenic Integrity



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### 2.4 Visual Sensitivity Assessment

Visual sensitivity is a measure of the viewer's concern for the scenic quality of the landscape and especially changes to the existing conditions. Sensitivity levels for the Sun Valley ADMP visual assessment were determined by identifying regional facilities that could have a significant number of viewers who might be sensitive to changes in the visual landscape. No sensitivity surveys were performed for this assessment. After identifying the regional platforms, a systems of distance zones was established, similar to those used in the USFS Visual Management System. The distance zones are established to help understand how changes in the landscape may be perceived depending on their distance from potential viewers. In the foreground zone most changes in the landscape would be highly visible and viewers could be more sensitive to those changes, especially if they introduce high contrasting forms, lines and colors with high contrast to the surrounding landscape. As the distance from the viewer increases, changes in the landscape should be less visible and sensitivity to those changes should be reduced. The distance zones used for the Sun Valley assessment are identified below.

Foreground 0 – .25 miles

Middleground .25 – 3 miles

Background 3 miles and greater

#### 2.4.1 Visually Sensitive Areas

Areas of high visual sensitivity within the Sun Valley project area include the areas visible from existing residential use areas, designated recreation use areas and trails, and major public travel ways, including Sun valley Parkway, I-10, and White Tank Mountains Regional Park (Figure 2.13). Moderate to low sensitive areas occur in areas away from the regional platforms. In this assessment the future park to be developed by Buckeye and the Maricopa trail corridors that would occur along existing facilities such as power lines are included as regional platforms. Other trail corridors for identified for the Maricopa Trail will also be highly sensitive areas for consideration of changes in the landscape character. However those corridors will be determined by the pattern of future development and are not included in the assessment since the locations are not known.

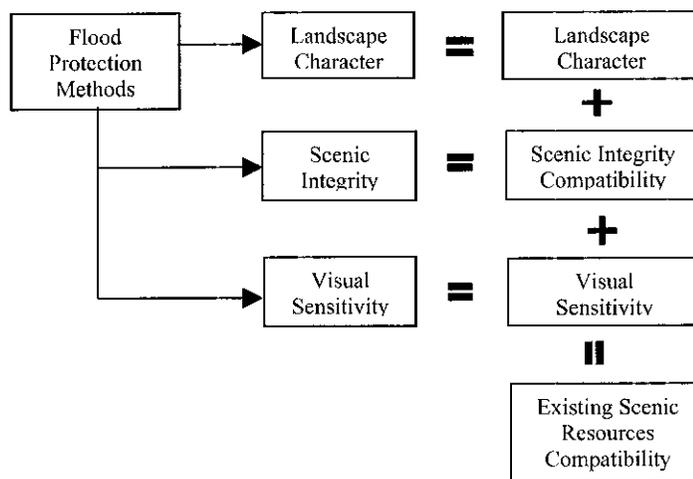




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## 2.5 Scenery Resources Opportunities and Constraints Analysis

The opportunities and constraints analysis is based on the approach outlined in the District's Assessing the Relative Ability of Flood Protection Methods to Complement and Achieve Compatibility with the Visual Character of Landscape Settings in Maricopa County. The document provides framework for assessing the aesthetic components of a project and can serve as a basis for assessing the magnitude of change in visual character. The approach entails comparing the landscape character, the scenic integrity and the visual sensitivity found within study area and mapped in the data collection phase with the visual characteristics of a range of flood protection methods. The comparison determines the relative compatibility, or ability of the flood protection methods to achieve context sensitivity with the character of the landscape character units of the study area. The flow chart below shows the general study sequence of the opportunities and constraints analysis.



The Flood Control District has identified six general flood control methods that are used on flood projects throughout the County. The Scenery Resources Assessment determines the relative compatibility of each flood protection method with the existing scenery resources of the project area. The descriptions of the flood control methods below are taken from the Flood Protection Methods, Scenery and Recreation Resource Assessment for Maricopa County report (FCDMC, 2006).

### Non-Structural Method

The non-structural method of flood protection employs the use of regulatory mechanisms such as erosion control setback zones and zoning regulations as mechanisms for providing flood protection. This method is characterized by an absence of structural elements or features for flood protection. Exceptions may include provision of low standard road facilities for carrying out flood control



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monitoring, operations and maintenance activities. Natural drainage features such as rivers, washes, and arroyos perform the function of storm water conveyance. Interior valleys and playas perform the function of storm water storage and natural ridges sometimes perform the function of floodwater retardation and containment. The existing character of the landscape is usually preserved under this method. This method will usually complement and achieve context sensitivity with the visual character of most landscape settings.



### Soft Structural Method

The soft structural method includes construction of large-scale flood protection structures such as conveyance channels, storage basins and flood retarding structures. The superstructure is constructed of earthen materials and the overall form of the structure is designed to emulate the character of natural landforms found in the surrounding landscape (Character Type). Hard structural components are absent, buried, concealed or designed to blend with and minimize their visibility in the landscape. Additionally, the soft structural method incorporates landscape architectural design themes, features and materials that are designed to complement

the valued character of natural, pastoral, rural and suburban landscape settings in which these structures are located and includes right of way for landscape setbacks and other features to enable the structure to visually blend with and complement adjacent land use areas. This method



also offers significant potential for enhancing heavily built environments such as the suburban, urban and industrial landscape settings through the preservation or introduction of natural features within these settings.

### Semi-Soft Structural Method

The semi-soft structural method includes construction of large-scale flood control facilities constructed predominantly of earthen materials. The overall form of the superstructure is designed to emulate the character of natural landforms found in



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the surrounding landscape (Character Type). Structural components such as grade control structures, energy dissipaters, low flow features, inlets and outlets may be visually evident but their overall form, color, texture and materials usage is designed to remain visually subordinate to and complement the valued character of the landscape settings in which they are located through careful placement, materials usage, and landscape architectural design. This method also incorporates landscape architectural design themes, features and materials that complement the valued character of the settings in which flood control structures are located and includes

right of way to provide landscape setbacks and other features to enable the structure to visually blend with and complement adjacent land use areas. As a result, this method can complement and



achieve context sensitivity with a wide range of landscape settings in Maricopa County, including natural, pastoral, rural, suburban and urban landscapes. The semi-soft method also has a large potential for introducing positive variety into and enhancing heavily built environments.

### Hard Structural Method with Aesthetic Treatment

The hard structural method with aesthetic treatment includes construction of large scale flood control structures with superstructures that are fully or partially concrete lined. Structural components are also typically constructed of hardened (concrete) materials. This method produces structures that stand out as visually dominant feature attractions within most urban and industrial landscape settings in Maricopa County. It incorporates landscape design themes, features and materials that complement the valued character of urban and industrial landscape settings. Examples of aesthetic treatments include gracefully meandering the overall form of the superstructure, use of color, textural patterns, rustication techniques, urban art, other architectural embellishments and landscape plantings to establish visual and cultural context sensitivity primarily within urban and industrial settings. This method also includes right of way to provide an adequate landscape setback to enable these structures to visually blend with and complement adjacent land use areas. This method has a large potential for





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being viewed as a negative deviation that can detract from the valued character of natural, pastoral, rural and many suburban landscape settings.

### Semi-Hard Structural Method

The semi-hard structural method includes construction of large-scale flood control structures constructed predominantly with earthen materials. These structures typically employ standard civil engineering design practices without inclusion of landscape architectural design or aesthetic features. The superstructure typically contains a geometric form, with uniform side slopes, bottom (invert) and over-bank areas. Component structures for grade control, energy dissipation inlets and outlets are characteristically standard engineering designs that do not incorporate landscape architectural design or aesthetic features. Vegetation treatments are typically limited to those required for erosion and dust control or for meeting USACE 404 permitting requirements. Right of way for establishing a landscape setback is typically not included with this method. Except for rural and industrial landscapes, this method generally lacks the ability to complement the visual character of and achieve context sensitivity with natural, pastoral, suburban and urban landscape settings in Maricopa County.



### Hard Structural Method

The hard structural method includes the construction of heavily armored large-scale flood control structures and component structural features. The superstructure and component structures typically employ standard civil engineering design practices without inclusion of landscape architectural design or aesthetic treatments. The superstructure typically contains a strongly geometric form, with uniform profile, side slopes, bottom (invert), and over-bank areas. Component structures for grade control, energy dissipation, inlets and outlets are also characteristically standard engineering designs that have a strongly geometric appearance. Vegetation planting is typically limited to the over-bank and/or perimeter area around the structure and only to the extent required for dust and erosion control or USACE 404 permitting requirements. Right of way for establishing a landscape





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setback is typically not included with this method. The hard structural method is usually complementary to and achieves context sensitivity only with heavy industrial landscape settings within Maricopa County. Within other settings, this method has a large potential to introduce very strong negative deviations that will detract from the valued landscape character.

The comparison to the flood protection methods results in a common classification system to the various visual analysis components. For example, Class 2 areas would be areas where non-structural and soft structural approaches to flood control would be compatible with the assessment components such as variety, sensitivity or future desired landscape character. The data can then be used in GIS to generate a map displaying the range of flood protection methods that will be compatible with the landscape settings identified within the study area. Each class represents a level of compatibility for flood control components within the landscape. The map layers can then be overlaid to create a composite map of the locations where the types of flood control methods are most compatible. The composite map can be used as a tool to guide the selection of compatible flood protection methods in the formulation of environmentally sensitive plan alternatives.

Table 2.3 shows the compatibility classes for the types of flood protection methods and the application of the classes to each of the visual analysis components follows in subsequent sections. The compatibility analysis was a cooperative effort performed with the District's landscape planning team.

**Table 2.3.**

**Compatibility Classes**

Class 1	Non-structural					
Class 2	Non-structural	Soft Structural				
Class 3	Non-structural	Soft Structural	Semi-soft Structural			
Class 4	Non-structural	Soft Structural	Semi-soft Structural	Semi-Hard Structural		
Class 5	Non-structural	Soft Structural	Semi-soft Structural	Semi-Hard Structural	Hard w/ aesthetic treatment	
Class 6	Non-structural	Soft Structural	Semi-soft Structural	Semi-Hard Structural	Hard w/ aesthetic treatment	Hard Structural





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### 2.5.1 Existing Landscape Character

The existing character units of the Sun Valley ADMP area were derived from the Landscape Character Assessment of Maricopa County (2005). That study has also determined the compatibility of various flood control methods in the units. The compatibility analysis is shown in Table 2.4. This approach assures consistent application of the compatibility classes throughout the County. It also allows the visual and multi-use opportunities of the specific planning area to have a consistent level of influence in the selection of alternatives and recommended plans on a project to project basis because the existing and future land use are not subject to a high amount of interpretation. Individual land use characteristics will still be considered within the framework of the analysis in the countywide plan. The compatibility classes for the existing landscape character units are shown on Figure 2.14.

In the Sun Valley ADMP area, seven existing landscape character units comprise approximately 99% of the area and these units form the dominant visual characteristics of the study area. Table 2.4 identifies these units under the column heading E, under Dominant Character Units heading. This section of the table has been added to the compatibility matrix because of the high level proposed development in the Sun Valley ADMP area. The matrix can then show the distinction between the landscape character units that influence the existing and future compatibility of flood control methods in the Sun Valley ADMP area. The units highlighted under the F column heading are the dominant Future Landscape Character units as identified in the Landscape Character Assessment of Maricopa County (2005).

### 2.5.2 Planned Future Landscape Character

The planned future landscape character units for the Sun Valley ADMP area were derived from the Landscape Character Assessment of Maricopa County (2005) and are shown in Figure 2.15. The compatibility of various flood control methods with each landscape character unit was also determined as part of the study and the units and compatibility are shown in Table 2.4. The units developed in the future landscape character study are the same as the existing character units except that the dominance of units with a natural setting has been replaced with high level of suburban or other developed units. The dominant units expected in the future are shown in Table 2.4 under the F column heading, under the Dominant character units. A review of the list of the existing units versus those expected in



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Table 2.4 Landscape Character Compatibility Classes Matrix								
Landscape Character Units		Flood Protection Method						
		Non-Structural	Soft Structural	Semi-Soft Structural	Semi-Hard Structural	Hard Structural w/ Aesthetic Treatment	Hard Structural	
<b>Dominant Character Units</b>								
<b>F</b>	<b>E</b>	<b>Tonto Landscape Character Type Units</b>						
		Natural and Pastoral Sonoran Arizona Uplands	C	C	C	IC	IC	IC
		Rural Sonoran Arizona Uplands	C	C	C	IC	IC	IC
		<b>Sonoran Desert Landscape Character Type Units</b>						
		Natural and Pastoral Bajada	C	C	C	IC	IC	IC
		Natural and Pastoral Foothills	C	C	C	IC	IC	IC
		Natural and Pastoral Mountain	C	C	C	IC	IC	IC
		Natural and Pastoral River Channel	C	C~	C~	IC	IC	IC
		Natural and Pastoral River Terrace	C	C	C	IC	IC	IC
		Natural and Pastoral Valley Plain	C	C	C	IC	IC	IC
		Rural Bajada	C	C	C	IC	IC	IC
		Rural River Channel	C	C~	C~	IC	IC	IC
		Rural River Terrace	C	C	C	IC	IC	IC
		Rural Valley Plain	C	C	C	C	C	IC
		Suburban Bajada	C	C	C	IC	IC	IC
		Suburban Foothills	C	C	C	IC	IC	IC
		Suburban Mountain	C	C	C	IC	IC	IC
		Suburban River Channel	C	C~	C~	IC	IC	IC
		Suburban River Terrace	C	C	C	IC	IC	IC
		Suburban Valley Plain	C	C	C	IC	IC	IC
		Urban Bajada	C*	C*	C*	C	IC	IC
		Industrial River Terrace	C*	C*	C*	IC	IC	IC
		Industrial Valley Plain	C*	C*	C*	C	C	C

C = Compatible

IC = Incompatible

E = Existing landscape character

F = Future landscape character

Class 3

Class 4

Class 5

Class 6



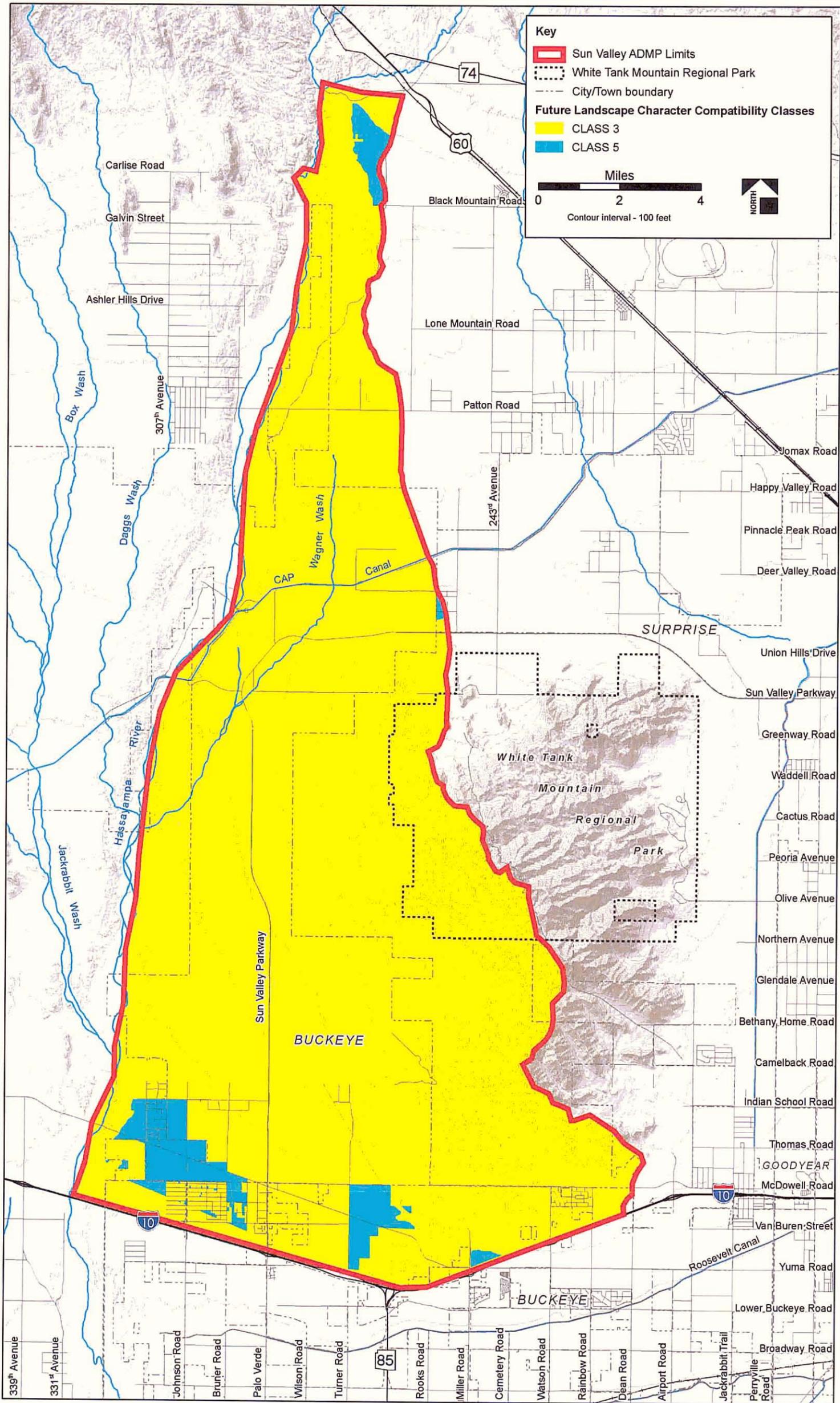


Figure 2.15

Future Desired Landscape Character Compatibility Classes



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the future reveals how the landscape will transform as development takes place. The mostly natural landscape will become primarily suburban in character, along with some rural and urban areas. Figure 2.9 shows the proposed or approved master planned developments within the Sun Valley ADMP area. The proposed developments appear to have little consideration of the landscape character and forms that currently exist except that most proposed plans have open space planned along existing wash corridors. These areas will accommodate drainage from the development and help retain washes as required by other regulatory permitting. The development of flood control facilities in the Sun Valley ADMP area presents an opportunity to retain larger areas with some of the characteristics of the existing landscape.

### 2.5.3 Scenic Quality

The compatibility analysis of the scenic quality components of variety and integrity were prepared in conjunction with the District and the results are shown in Tables 2.5 and 2.6 respectively. The compatibility class maps are shown in Figures 2.16 and 2.17. While the A+ rating of the White Tank Mountains would only support non-structural flood control methods, the impact of the area being incompatible with other methods should not affect flood control activities. Most of the area is within the Regional Park and other areas that would not be subject to development.

**Table 2.5.**

**Landscape Variety Compatibility Analysis**

Landscape Variety Class	Methods of Flood Protection					
	Non-structural	Soft Structural	Semi-soft	Hard w/ aesthetic treatment	Semi-Hard	Hard
A+	C	IC	IC	IC	IC	IC
A	C	C	C	IC	IC	IC
B	C	C	C	C	IC	IC

C-Compatible IC-Incompatible

The relatively high level of landscape integrity however indicates that one could interpret that it is only compatible with methods of flood control that would occur in Class 1 or 2. This could affect the implementation of appropriate flood control methods, especially

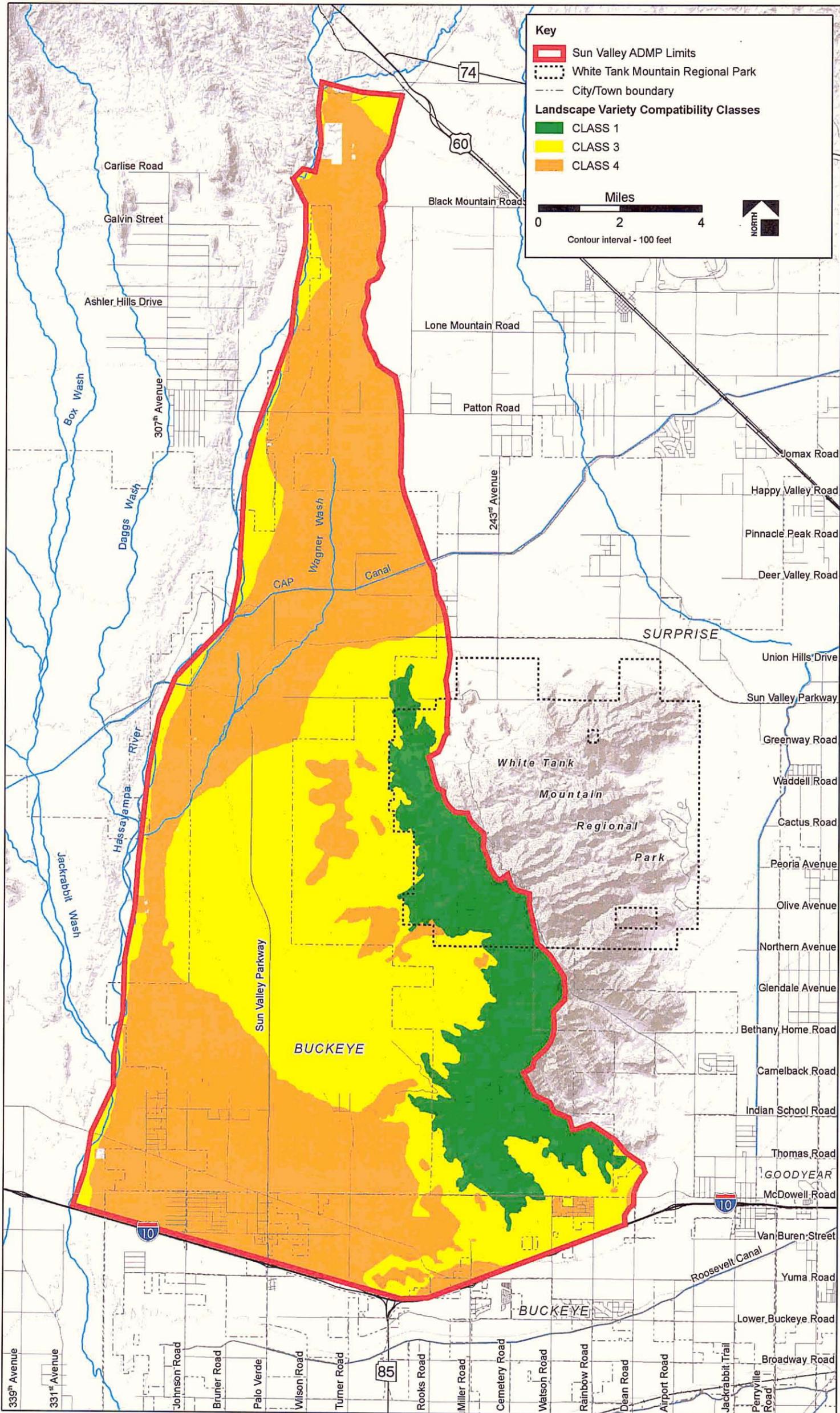


Figure 2.16  
Landscape Variety Compatibility Classes

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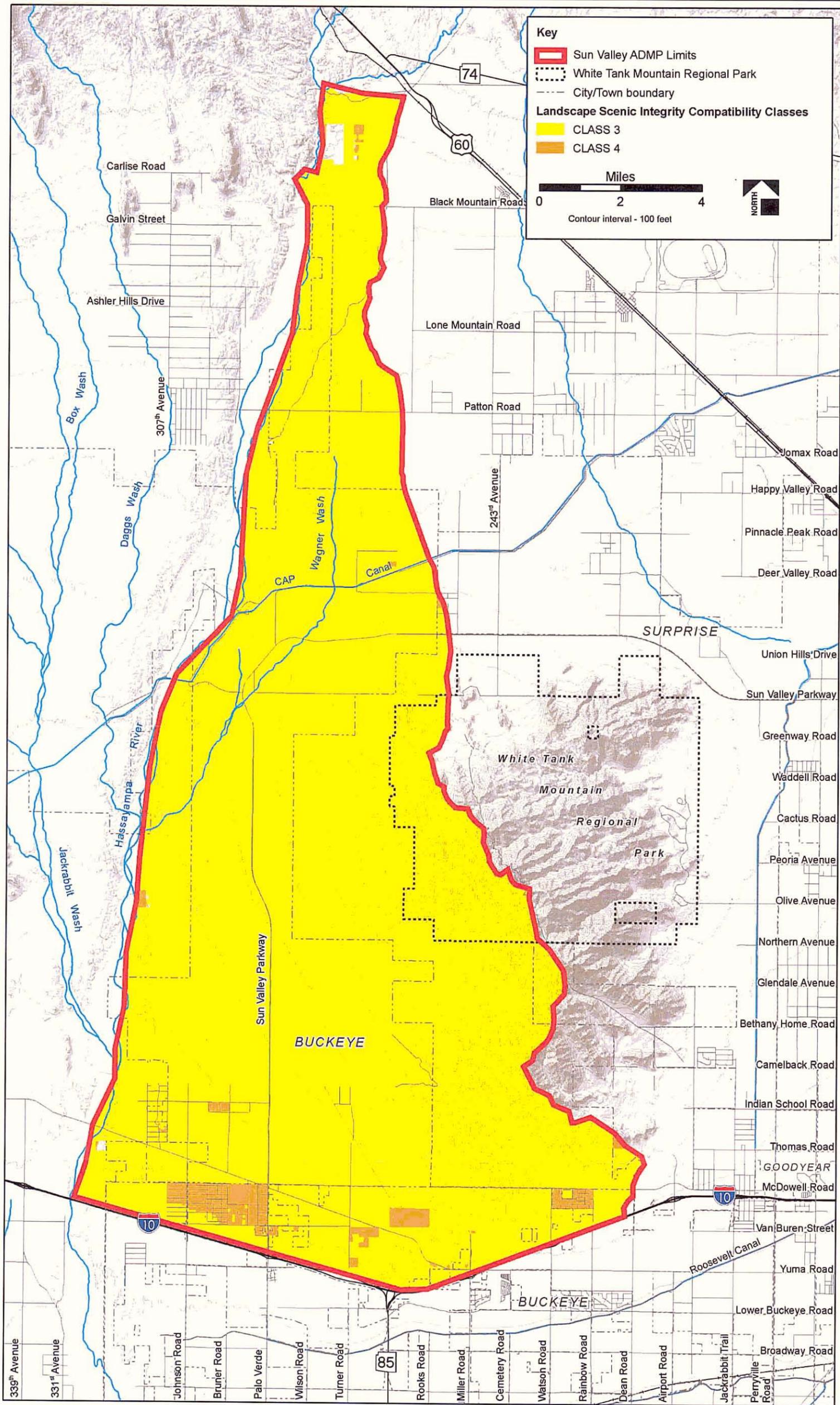


Figure 2.17

Scenic Integrity Compatibility Classes



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with the amount of planned development in the Sun Valley ADMP. However, while planned future development will significantly alter the landscape the integrity of the area could be sustained at a high level. The consistency and quality of development would present a landscape of intact suburban character intermixed with natural open space. Therefore, in the Compatibility Analysis it was felt that additional methods of flood control would be compatible with the developed landscape even though it could have a higher level of integrity than unplanned development. The high and moderate integrity areas were both assigned to Class 3 to allow more options for development of flood control facilities and still be compatible with the future development. The class would also retain a strong level of sensitivity in development of flood control facilities in areas where the facilities are developed in the existing landscape.

**Table 2.6.**

**Scenic Integrity Compatibility Analysis**

Landscape Integrity	Methods of Flood Protection					
	Non-structural	Soft Structural	Semi-soft	Hard w/ aesthetic treatment	Semi-Hard	Hard
High	C	C	IC	IC	IC	IC
Moderate	C	C	C	IC	IC	IC
Low	C	C	C	C	IC	IC

C-Compatible, IC-Incompatible

### 2.5.4 Visual Sensitivity

The compatibility of various flood control structures in relation to the existing regionally significant elements indicates that most of the Sun Valley ADMP area is compatible with class 4. Class 3 areas occur only within the foreground zone of regional roads, trails and the White Tanks Mountains Regional Park. The compatibility classes for visual sensitivity are shown on in Table 2.7 and the mapped classes are shown on Figure 2.18. The future development of additional regional trails and open space corridors within planned development will create new areas that could be sensitive to the development of flood control facilities. Also, the general slope of the bajada landform could increase the visibility of flood control structures and more viewers could be sensitive to the views of the facilities from middleground distances. Distant views and the change in elevation from viewers to facilities will be considered in the development of the landscape design components and design guidelines for development of flood control facilities.

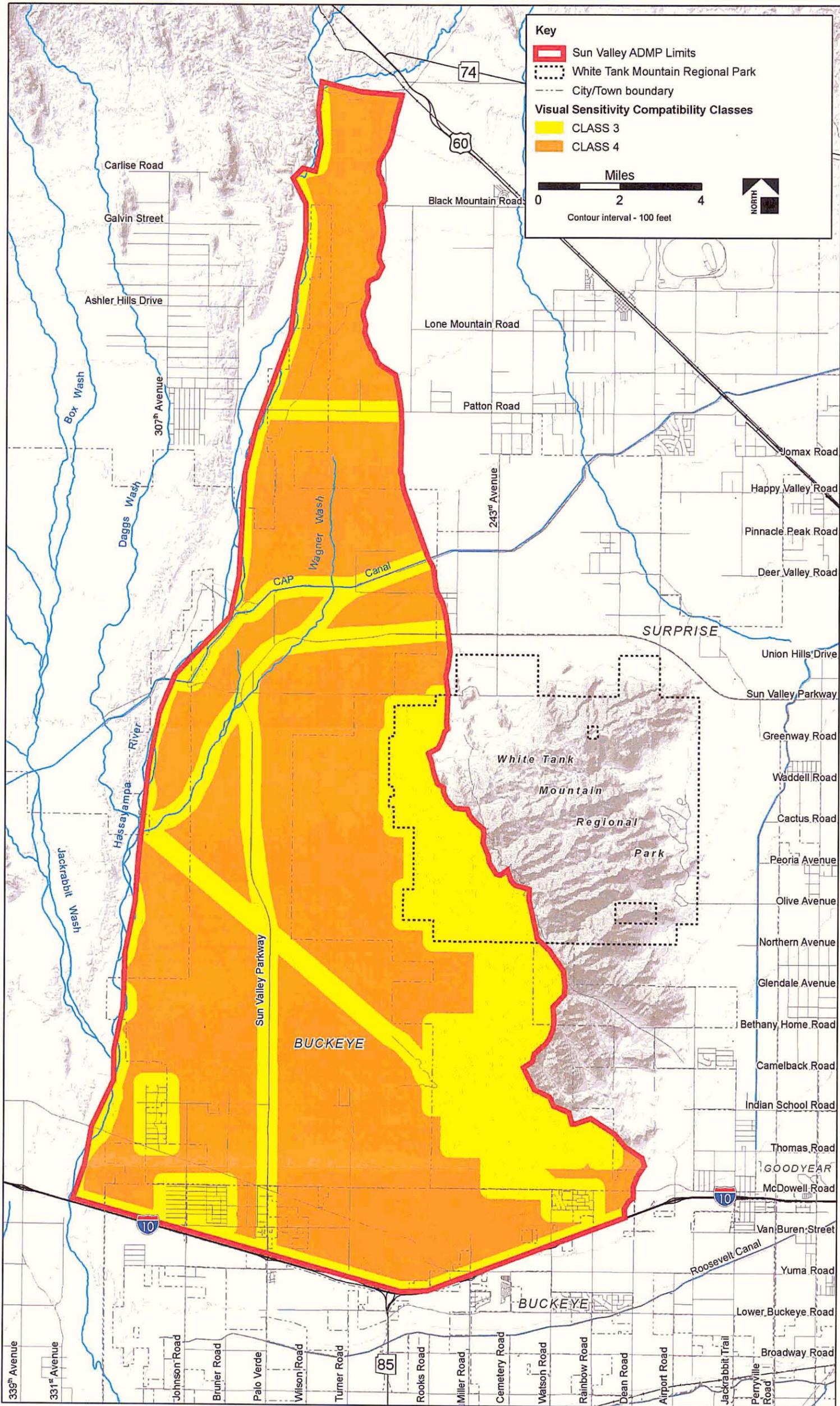


Figure 2.18  
Visual Sensitivity Compatibility Classes



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Table 2.7.

## Visual Sensitivity Compatibility Analysis

Integrity	Methods of Flood Protection					
	Non-structural	Soft Structural	Semi-soft	Hard w/ aesthetic treatment	Semi-Hard	Hard
Foreground	C	C	C	IC	IC	IC
Middle ground	C	C	C	C	IC	IC
Background	C	C	C	C	C	IC

### 2.5.5 Scenery Resources Opportunities and Constraints

The final step in the analysis of the opportunities and constraints for implementing flood control projects with respect to visual resources is preparing a composite of the compatibility classes that were developed for the landscape character and scenery components. Using GIS the compatibility classes of scenic quality and sensitivity and future desired landscape character were combined to form a single map that displays composite of the classes from the individual analyses (Figure 2.19). In the composite analysis the vast majority of the Sun Valley ADMP area is Class 3 with some minimal areas for Class 4 in the southern portion of the area. Non-structural, Soft Structural and Semi-soft structural flood control methods would be compatible in most of the Sun Valley ADMP area. However, the compatibility analysis is not a prohibition of using other flood control methods. If engineering and functional requirements determined that a hard structural method with aesthetic treatment (suitable for Class 4 areas) was needed to meet flood control objectives, extra effort in the design and aesthetic treatment of the facilities will be required to make them more compatible with Class 3. The design guidelines to be developed for the ADMP will provide the framework for high quality design of flood control features to meet this objective. The developers of the master planned communities in the Sun Valley ADMP area should also have an interest in developing aesthetically pleasing flood control facilities to maintain the quality of their developments. . Continued coordination with the developers throughout their planning and design processes should help ensure that proposed flood control methods are compatible with future landscape settings.





## SECTION 3: LANDSCAPE THEMES

### 3.1 Introduction

A landscape theme is a unifying design element that defines the distinctive characteristics of the local landscape setting. Landscape themes are applied to flood control facilities during final design using forms, colors and textures that draw upon the local landscape setting help achieve context sensitivity of the facilities with the surrounding landscape. Potential themes for the landscape and aesthetic improvements for the Sun Valley ADMP were identified after evaluating the existing and future landscape character and reviewing the cultural resource and environmental overview reports prepared for the project. Theme components were also developed in the recreation/multi-use workshop conducted for the project and through various meetings and workshops with the study team and stakeholders throughout the project. The known plans for development of new master planned residential communities also influenced the development of themes.

Based on the relatively undisturbed landscape and the primary features of the White Tank Mountains and the Hassayampa River, it was apparent that themes focusing on the Sonoran Desert were appropriate to consider. Impending future development and the need for open space and parks to serve future residents also resulted in a theme that could easily integrate into the new communities. *Through the design and evaluation process six themes were identified that would encompass the wide range of designs that could potentially be needed to successfully coordinate the landscape of flood control features with the surrounding area.*

During theme development, it became apparent that three of them contained the basic elements contained in the full set of themes. These three were identified as the primary themes. The three remaining, or special emphasis, themes are important to the overall development of the landscape character of flood control facilities in the Sun Valley area but would not be as recognizable to the public as a theme such as Natural Sonoran Desert. These special emphasis themes are more specific to certain areas or subjects and would need to be explained through interpretive elements or programs so they are apparent to the public.

The following section describes the primary and special emphasis themes and provides conceptual sketches of the primary themes. Because of the wide range of future developments planned for the area, there is the potential that all the themes could be used on flood control projects in the Sun Valley and would successfully integrate flood control facilities with the aesthetics and character developed by the various communities.



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### 3.2 Primary Themes

#### 3.2.1 *Natural Sonoran Desert Theme*

This theme is based on reinforcing the relatively undisturbed, native desert landscape of the Sun Valley ADMP area. Landscaping and revegetation will be accomplished with Sonoran desert natives, specifically those in the Sun Valley area. A preliminary plant list of Sonoran Desert natives is provided in Appendix D. The final selection of plants should be based on the existing vegetation in area of each specific project.

The use of the Sonoran Desert theme would consider the context of the immediate area of the project and utilize the existing native landscape character as a basis of the design. For example, projects would incorporate the landform and features of the river, valley plains, Bajada, foothills and mountains for projects located in those character units. Development of detailed designs incorporating elements of these features would become site-specific, sub-themes as listed below.

- a) Natural Sonoran Desert River Theme
- b) Natural Sonoran Desert Valley Plains Theme
- c) Natural Sonoran Desert Bajada Theme
- d) Natural Sonoran Desert Foothills Theme
- e) Natural Sonoran Desert Mountains Theme

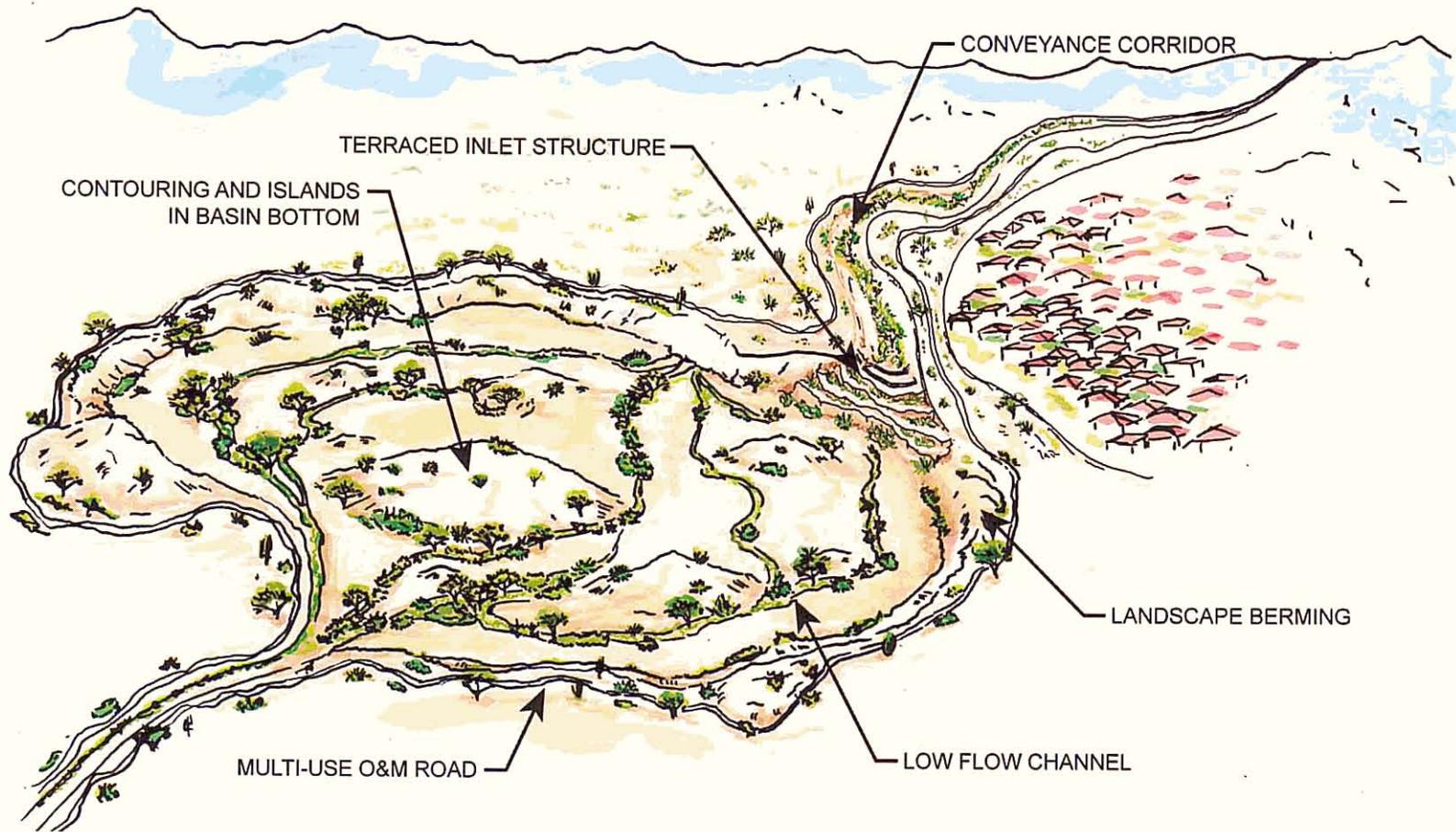
Modifications to the landscape with these sub-themes would create topography similar to surrounding area and utilize plants, boulders and ground cover in ways that mimic undisturbed Sonoran Desert areas. Using multiple sub-themes within a drainage corridor extending from the Hassayampa River to a basin near the White Tank Mountains would create distinct, but somewhat subtle changes in the landscape over the length of the corridor and have a higher level of compatibility with the surrounding area over its entire length.

Most of the flood control alternatives considered in the Sun Valley ADMP include drainage corridors that preserve existing washes within a wider flood control corridor. In developing the landscape plans for specific projects, special attention should be paid to preserving and enhancing riparian by mimicking the colors, materials, texture, and landforms of existing natural desert washes in new designs.



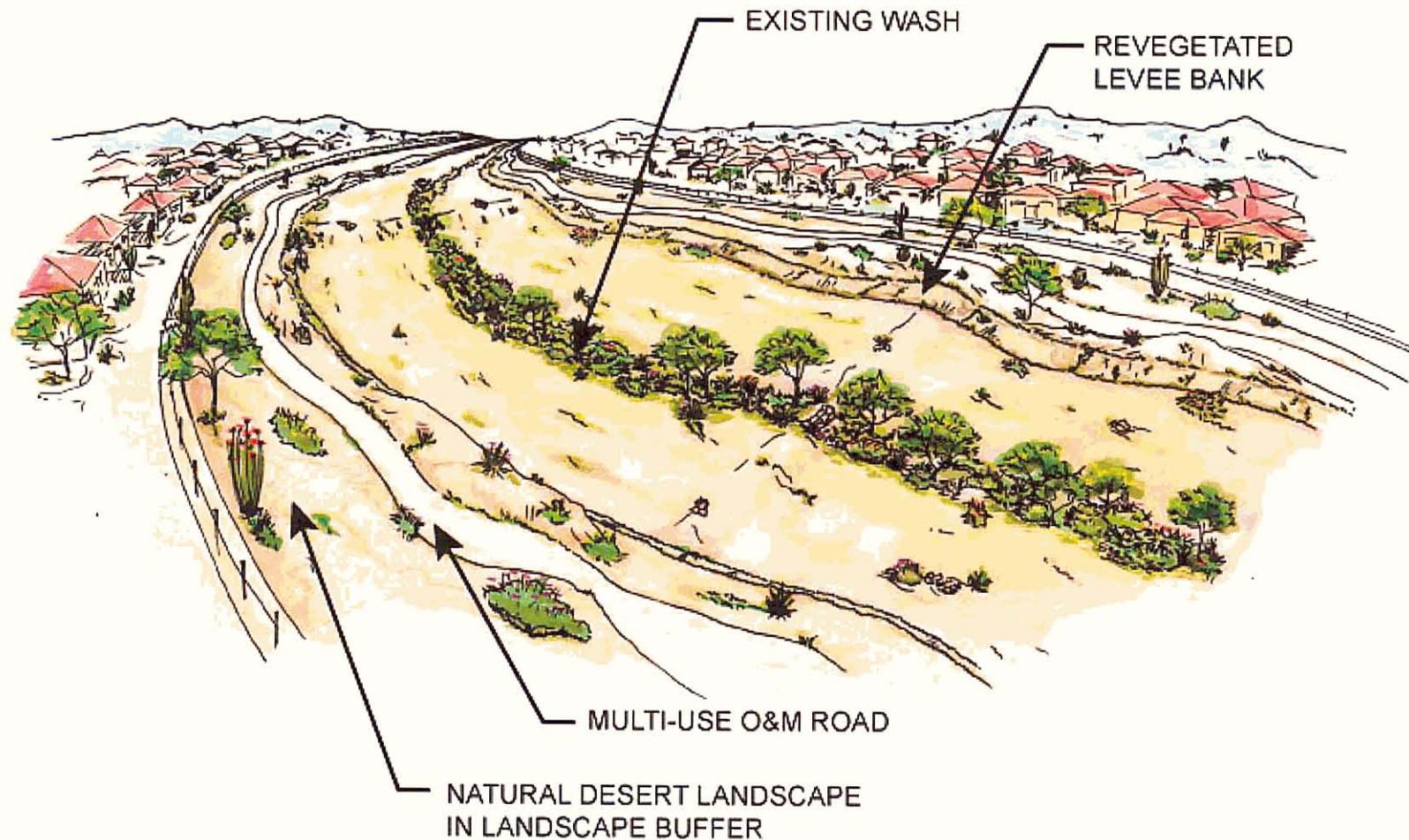
## SUN VALLEY AREA DRAINAGE MASTER PLAN

The Sonoran Desert theme would preserve existing character, extend it into future development areas and provide connectivity to preserved wash corridors and into the White Tank Mountains. Figures 4.1 and 4.2 depict a general concept of the Natural Sonoran Desert theme as applied to a basin and drainage corridor. Features of this theme would reinforce the forms, lines colors and textures of all of the natural desert character areas, including unique elements such as desert pavement and boulder/rock outcrops.



Natural Sonoran Desert Theme

Figure 4.1



Natural Sonoran Desert Theme

Figure 4.2



### 3.2.2 *Semi-natural Sonoran Desert/Desert Adapted Park Theme*

The Semi-natural Sonoran Desert/Desert Adapted Park Theme would also reinforce the desert character of the planning area by focusing primarily on native materials and natural landforms. The landscaping and aesthetic features would also include desert adapted, people-friendly plants in areas of high activity, especially in the areas adjacent to neighborhoods of residential development areas. A preliminary list of plants developed to reflect this theme is in Appendix D. This theme could also draw upon the adjacent landscape character and incorporate the features and landforms of the natural river, valley plains, Bajada, and mountain character units.

This theme would include the modest use of turf for passive recreation in key areas for use by local residents, but generally not include large turf areas such as softball and soccer fields. Figures 4.3 and 4.4 depict a general concept of the Semi Natural Sonoran Desert/Desert Adapted Park Theme as it could be applied to a basin and a drainage corridor.

Additional design features would include the development of structures such as drop structures or basin inlets/outlets that would compliment the color, texture and scale of adjacent landforms. Techniques could include extensive use of boulders to create rock outcrops and use of colors such as desert varnish. Form liners or other texturing techniques could also be used on concrete elements to enhance the transitional relationship between the desert and adjacent development.

### 3.2.3 *Suburban Park-Like Theme*

Even though most of the Sun Valley area is currently planned for residential and mixed-use development the use of the Suburban Park-Like Theme should be limited to areas of the highest intensity of development. This theme would act as a transition to surrounding suburban development and reinforce the relationship of open space to surrounding development. However, major emphasis would be on creating usable open space for the benefit of a large segment of the community. The preliminary list of suitable plants for this theme would include all the plant material from the Semi-Natural Sonoran Desert/Desert Adapted Park Theme, as well as the plants listed in Appendix D for the Suburban Park-Like Theme. The use of plants on the Suburban Park-Like list should be limited to the areas around the highest intensity development and primarily use the plants on the Semi-Natural





# SUN VALLEY AREA DRAINAGE MASTER PLAN

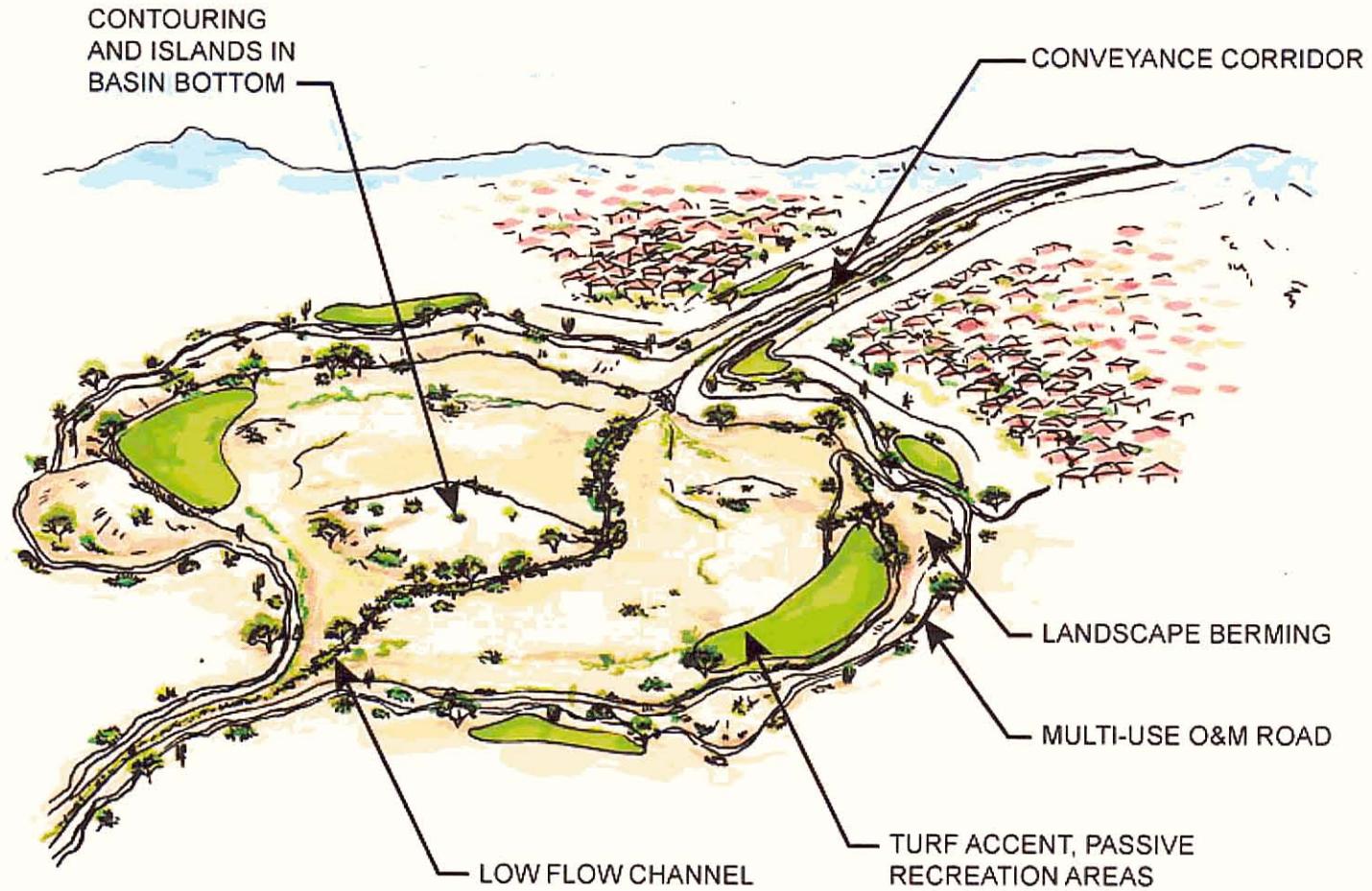
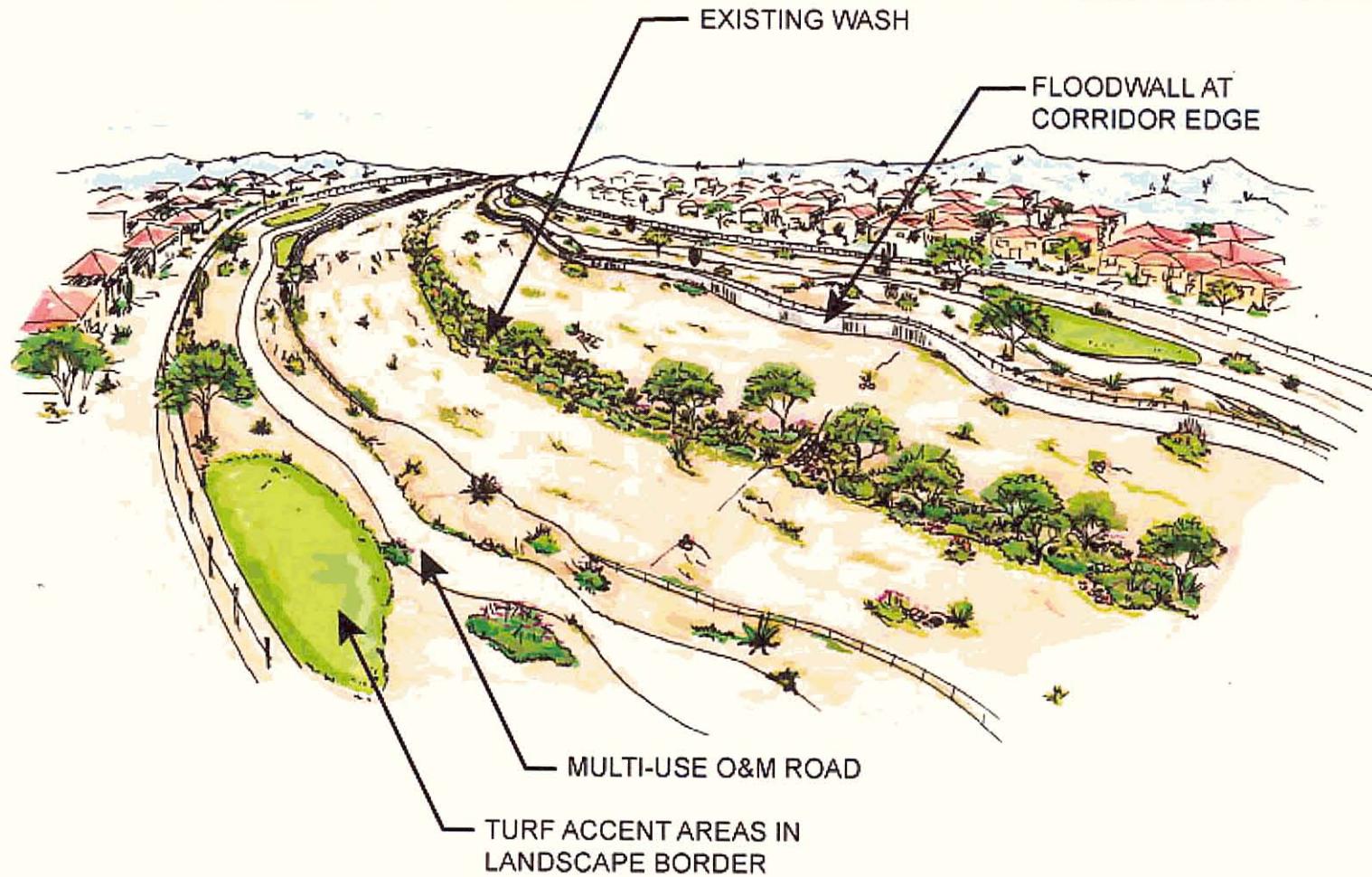


Figure 4.3



# SUN VALLEY AREA DRAINAGE MASTER PLAN



**Semi-Natural Sonoran Desert/Desert Adapted Park Theme**

Figure 4.4



## SUN VALLEY AREA DRAINAGE MASTER PLAN

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Sonoran Desert plant list in lower intensity areas of development. Landscape designs would allow for active recreation elements as appropriate for the local developments and as required by the Town of Buckeye. Figures 4.5 and 4.6 depict a general concept of the Suburban Park-Like Theme as it would apply to a basin and drainage corridor. In Figure 4.6, the theme is applied to Alternative B-3, which would retain the existing natural wash and provide flood drainage in an adjacent, excavated channel. The Suburban Park-Like Theme would also apply in and around the excavated channel while maintaining the area adjacent to the wash in its natural condition. Project components such as drop structures and inlets/outlets, would be designed to coordinate with adjacent structures (bridges, culverts etc.). The design of the structures could change as corridors moved through different developments. Elements such as drop structures would be architectural in nature and incorporate park features when possible. Form liners could be used for creation of architectural designs, and patterns in structures

### 3.3 Special Emphasis Themes

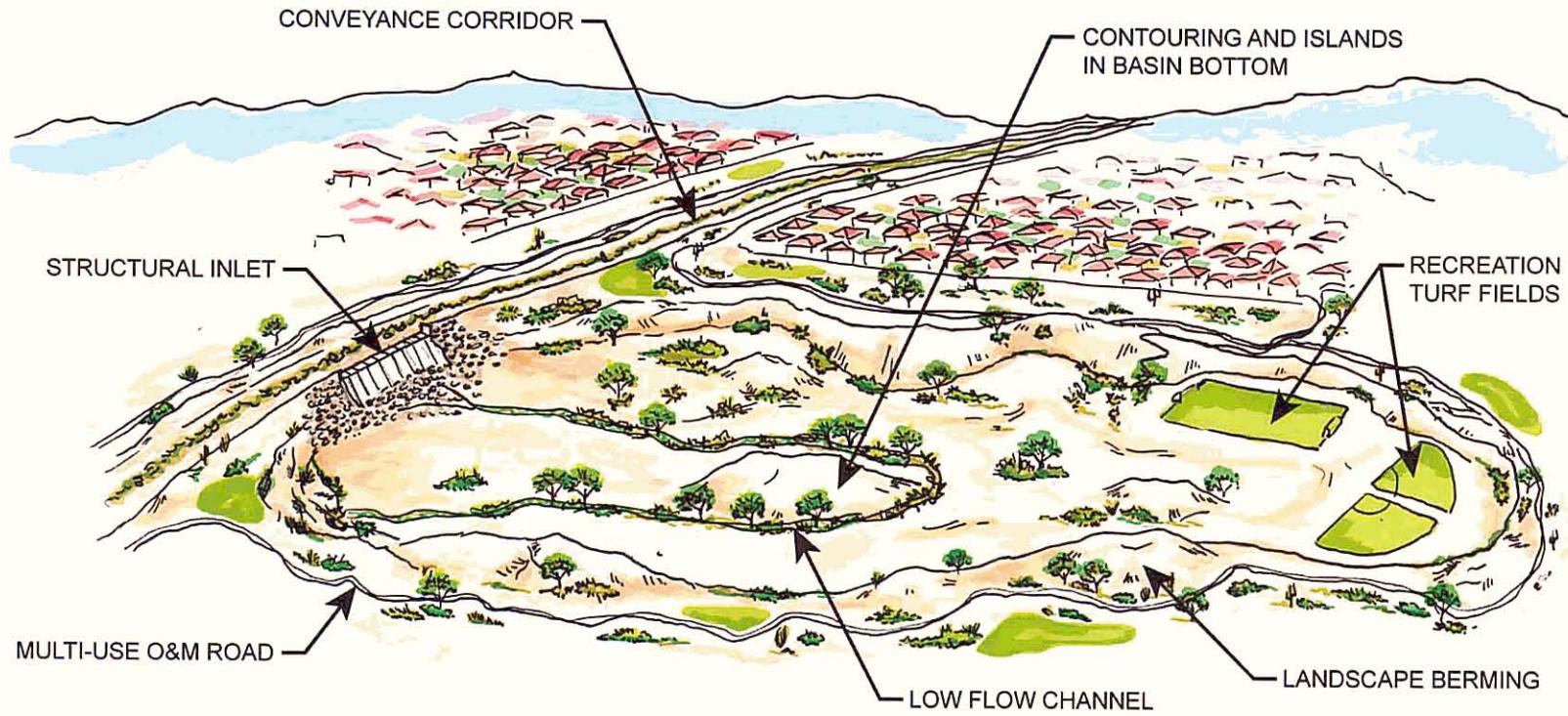
#### 3.3.1 Mining

The region where the Sun Valley planning area is located has a rich history of mining, especially in the area around Wickenburg. The Sun Valley planning area however does not have a large number historic sites related to mining and most are located in the southern area, north of I-10. There are several cultural resource sites related to mining, including abandoned mines and a small amount of associated equipment and structures. The cultural resources in this area would provide an opportunity to develop an interpretive trail system that links the sites and provides a historic overview of the mining tradition. The area is also in proximity to the new mountain park proposed by Buckeye and the interpretive trail system could be used to provide a southern access into the desert mountain area and into White Tank Mountains Regional Park.

Design elements of this theme would primarily be focused on structures that would evoke images of mining equipment or materials. This may include the use of heavy timbers and iron elements in the design of drop structures, walls or other flood control components. The use of formliners for concrete structures would give a similar look but avoid the use of wood on FCD structures. The theme could be reinforced by using similar design elements at trailheads or interpretive stops.



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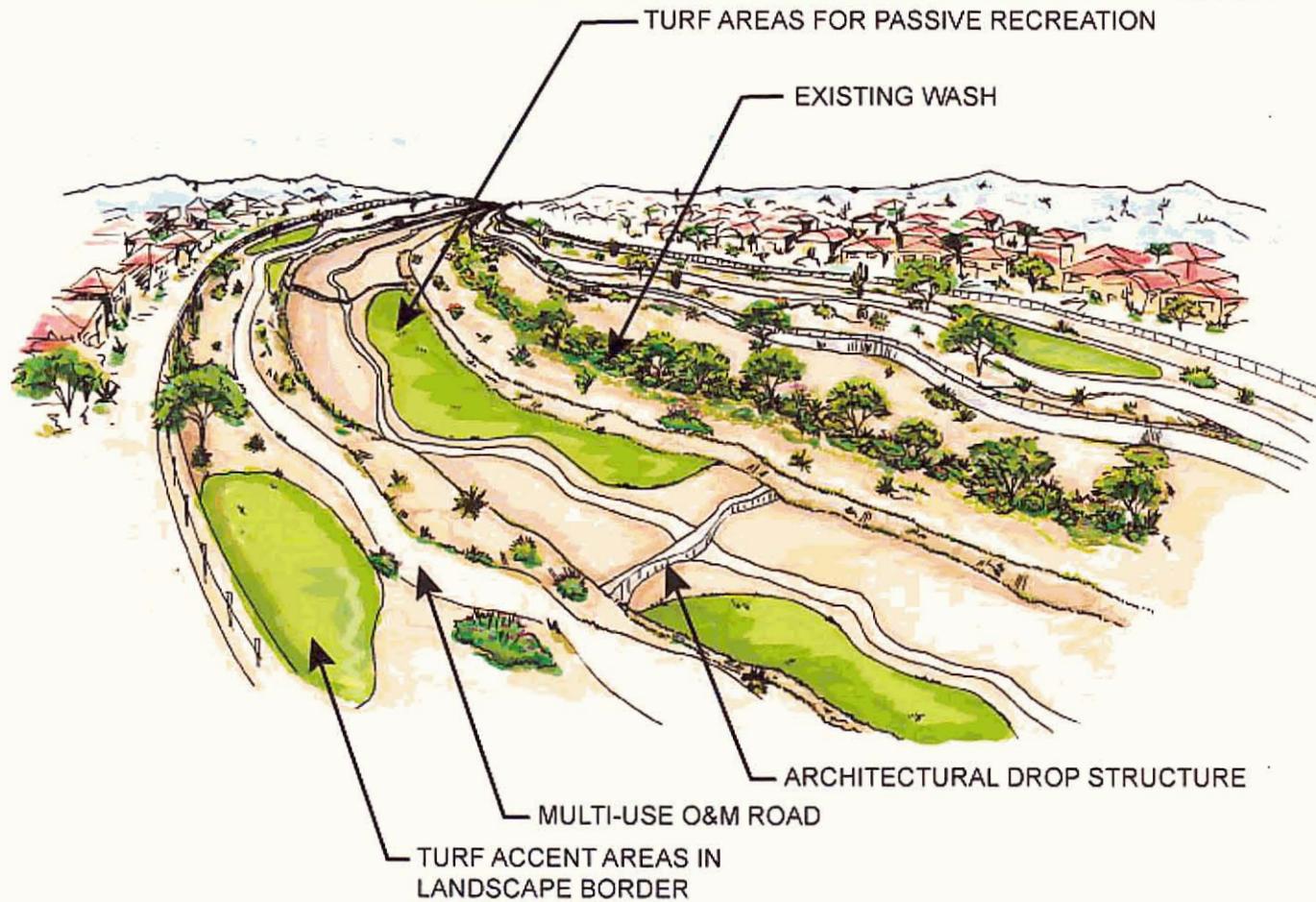


Suburban Park Like Theme

Figure 4.5



# SUN VALLEY AREA DRAINAGE MASTER PLAN



**Suburban Park Like Theme**

Figure 4.6



## SUN VALLEY AREA DRAINAGE MASTER PLAN

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### 3.3.2 *Native American Resource Use/Gathering*

The Sun Valley ADMP area does not have a high level of sensitive cultural resource sites. The area was primarily used for gathering resources such as food, building material and possibly medicinal plants. It does not appear to have been used for extensive permanent habitation. The cultural resource investigation for the ADMP was an archival search only and did not include field surveys. Only a small portion of the area was found to have had survey work done on it in the past and future surveys could reveal additional cultural sites. A cultural resource theme developed for the ADMP focuses on the resource uses of the area and landscape and aesthetic features would emphasize use of plants with food and/or medicinal value to Native Americans. These elements would best be used in areas that could provide interpretive opportunities to future residents to help retain a community connection to the region.

In the development of landscape and aesthetic treatments and flood control structures there could also be an emphasis on the mountains to river connection by extending the plants, forms, textures and colors of these two major landscape character units into the future development areas. These major character units were the most important to the Native Americans because they provided the diversity landforms and habitats that resulted in the wide variety of vegetation and wildlife in the area. Extending these elements into the developments would also provide the opportunity to develop interpretive trails in multiple areas to highlight resources in mountains, uplands, washes and the river. Design of structures would evoke Native American construction techniques with the use of stone and desert woods. Forms, colors, and textures of Native American features could also be interpreted in materials such as concrete and steel to evoke the essence of the cultural elements but also provide long-term durability and lower maintenance of the features.

### 3.3.3 *Wildlife*

The river and mountain ecosystems and associated upland transition areas of the Bajada and valley plains provide wide variety of habitats for wildlife. The Wildlife Theme would emphasize the movement of wildlife especially in corridors connecting the mountains to the river. The plant palette would be similar to the Natural Sonoran Desert Theme, focusing on plants native to the Sun Valley ADMP area. Additional emphasis would be placed on the use of plants that provide food and cover to a wide variety of wildlife.

*Structures such as drop structures would be designed to be easily traversable by a variety of*



## SUN VALLEY AREA DRAINAGE MASTER PLAN

wildlife. Because the activity and disturbance near corridors could discourage use by wildlife, specific corridors would be identified for wildlife use and development of trails and other features that would encourage human use would be minimized. While food and cover plants would be used throughout the corridors, they would also be concentrated in specific locations to create high value habitat in areas away from high levels of human use. Wildlife could then easily move along the corridors, finding good habitat at multiple locations away from disturbances without having to traverse the entire corridor in a short period. Wildlife viewing areas could also be identified in adjacent developments to provide viewing opportunities to area residents





## SECTION :4 RECREATION RESOURCES ASSESSMENT

### 4.1 Introduction

Flood control and protection is the main goal of the District and while the District may not be able to implement all the elements presented in the Sun Valley study, the multi-use recreational opportunities are highlighted to demonstrate the potential for these types of recreational facilities to be incorporated into, or around, flood control structures. District funding for aesthetic or multi-use treatments is limited to features that are part of, or supplementary to, the flood control structure. Including multi-use recreational alternatives as part of the plan, allows for possible alternative funding partnerships with municipal or community organizations willing to sponsor their implementation.

The purposes and goals of the Recreation Resource Assessment are to: 1) identify existing and proposed multi-use recreation and open space resources in both the study area and regional context to the study area, 2) evaluate the potential to incorporate multi-use recreation into existing and proposed District facilities to meet the recreational needs of the surrounding communities, 3) serve as a catalyst for incorporating multi-use recreational opportunities into plan alternatives for Sun Valley, 4) serve as a guide for the development of multi-use recreational design and implementation guidelines for Sun Valley, and 5) identify partnering opportunities.

### 4.2 Recreation Multi-use Goals

The Districts goals for developing recreation multi-use opportunities in the Sun Valley ADMP area are defined by its limited ability to provide facilities in support of flood control requirements. The District works closely with local communities and the Maricopa County Parks and recreation Department to achieve the implementation of recreation facilities and assist the communities in reaching their recreation goals. The Districts primary recreation goal and those of the communities surrounding the Sun Valley ADMP area are outlined below so that they can be considered in the development of the alternatives and final recommended plan.





## SUN VALLEY AREA DRAINAGE MASTER PLAN

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### 4.2.1 *Flood Control District of Maricopa County*

Maximize opportunities for recreation and other public uses and benefits of flood plains in the planning and design of flood protection facilities in the ADMP area and to the extent desired by local communities.

Pursuit of the Districts goal is guided by the two primary components.

- For any project there must be a flood control purpose
- The project cannot include expenditure of District funds for facilities that serve purely a recreation function.

### 4.2.2 *Recreation goals of local communities*

The goals identified by local communities in their most recent General Plans or Open Space Plans have been compiled and are shown in Table 3.1. The goals may change during plan updates and continued coordination with the communities as projects proceed toward implementation will assure meeting their objectives





Table 4.1.

Open Space Goals for Communities in the Sun Valley ADMP Area of West – Central Maricopa County, Arizona

	Maricopa County Comprehensive Plan	Buckeye	Goodyear	Surprise	Wickenburg
Citizen Involvement	<p><b>Promote physical and visual public access to open space resources.</b></p> <ol style="list-style-type: none"> <li>1. Encourage efforts to protect and improve public access to open space resources.</li> <li>2. Encourage protection of view corridors within new and established scenic corridors.</li> <li>3. Encourage protection of public access around existing regional parks from urban encroachment.</li> </ol>	<p><b>Enable broad use of facilities.</b></p> <ol style="list-style-type: none"> <li>1. The Town’s parks and recreation program is ultimately responsible for increasing the variety of activities commensurate with a rapidly growing municipality. Multi-generational facilities, with flexible indoor and outdoor space, are seen as particularly sound investments because they are adaptable for expansion and changing resident preferences.</li> </ol>	<p><b>A Responsive Recreation Program that Serves the Diverse Needs of the Community.</b></p> <ol style="list-style-type: none"> <li>1. Periodically determine the recreational program needs and cost implications within the planning area.                             <ul style="list-style-type: none"> <li>• The City shall conduct a recreational survey every two years to revalidate/identify recreational program and park facility needs, and user demand trends in the City.</li> <li>• The City shall evaluate the cost/benefit of developing new or expanded recreational programs and facilities to serve year-round recreational programs.</li> <li>• The City shall continue to partner with the West Valley Fine Arts Council and other organizations to provide arts related and cultural programs for its citizens of all ages.</li> <li>• The City shall partner with multiple riparian and recreation oriented entities (e.g., American Rivers, Nature Conservancy, BLM, Arizona Game and Fish) to explore and promote eco-tourism opportunities and protect the riparian habitat system along the Gila River.</li> </ul> </li> <li>2. Provide conveniently located recreational programs and facilities to serve the community.                             <ul style="list-style-type: none"> <li>• The City shall investigate additional joint use facility opportunities (i.e., swimming pools, ice arena) with non-public schools, churches and other for- and non-profit organizations.</li> <li>• The City shall coordinate with the private sector to locate future community centers within proximity of the City Center or Village Centers identified in the Land Use Plan.</li> <li>• The City shall continue to partner with the YMCA to provide recreational, social and educational programs within the community.</li> </ul> </li> </ol>	<p><b>Enhance the amount and variety of recreation activities available to city residents.</b></p> <ol style="list-style-type: none"> <li>1. Survey city residents every three years to determine their desires for new recreational activities and programs.</li> <li>2. Initiate and gain partnerships with all school districts (e.g., Dysart Unified School District), charter school providers, or other educational providers within the planning area to utilize their facilities for city-sponsored recreational programs.</li> </ol>	<p><b>Provide a variety of recreational experiences.</b></p> <ol style="list-style-type: none"> <li>5 Respond to youth preferences (e.g. skate board park)</li> <li>6 Acquire sites and plan facilities that are adaptable to multiple activities</li> <li>7 Involve citizens of all ages in recreation program development</li> <li>8 Maintain Western activities (e.g. equestrian trails, rodeo)</li> </ol>



TableE - 4.1. (Continued)

Open Space Goals for Communities in the Sun Valley ADMP Area of West – Central Maricopa County, Arizona

	Maricopa County Comprehensive Plan	Buckeye	Goodyear	Surprise	Wickenburg
Linkages	<p><b>Establish regional open space connectivity and linkages for both recreation and wildlife purposes.</b></p> <ol style="list-style-type: none"> <li>1. Coordinate trail linkages in new developments with Maricopa County Flood Control projects and other open space projects and/ or resources.</li> <li>2. Encourage development of trails along rivers, significant washes, and canals to link existing open space resources throughout the region.</li> <li>3. Design all road crossings to minimize disturbance to the natural environment, and to accommodate identified trail crossings and other open space.</li> <li>4. Encourage preservation of Upper Sonoran Desert areas to serve as major links between regionally significant open space resources. In addition, encourage inclusion of smaller areas of foothills (bajadas), flatlands, and small valleys to provide connectivity and transition functions.</li> <li>5. Encourage completion of the Sun Circle Trail (Figure 2) through integration into the Maricopa County Regional Trail plan.</li> <li>6. Support and participate in the planning, development, and implementation of the proposed Maricopa County Regional Trail in coordination with local stakeholders, to ensure a widely accessible, unified trail system.</li> <li>7. Encourage integration and consideration of the proposed Maricopa County Regional Trail into future development.</li> <li>8. Support partnerships with public and private entities whenever possible to establish open space corridors and linkages.</li> </ol>	<p><b>Become proactive in land acquisition for community open space.</b></p> <ol style="list-style-type: none"> <li>1. Federal government initiatives to protect vast stretches of Sonoran desert south of Buckeye help significantly to fulfill regional open space goals.</li> <li>2. The County's White Tank Mountain Regional Park is an asset that abuts and is accessible to Town residents and visitors; there is a strong desire for the community to acquire lands adjacent to this facility as a municipal contribution to spaciousness.</li> <li>3. El Rio, a 17-mile stretch from the confluence of the Agua Fria/Gila Rivers to SR85, is designated as a multi-purpose riparian preserve. It is a top priority for open space improvements. Water feature emphasis will offer special attraction as a tourism destination as support for community economic development.</li> <li>4. Buckeye aims to provide six acres of accessible, active, recreation areas for each one thousand residents. For a future population of 500,000, about 3,000 acres of parks are needed compared to the current need of 30 acres.</li> </ol>	<p><b>A Regionally Connected, Locally Accessible Open Space System.</b></p> <ol style="list-style-type: none"> <li>1. Establish external connections to regional parks through the City. <ul style="list-style-type: none"> <li>• The City shall utilize the Maricopa Association of Governments Desert Spaces Plan, adopted in 1995, as a resource to establish a regionally connected open space system.</li> <li>• The City shall utilize the implementation strategies denoted in the 2002 Parks, Trails, and Open Space Master Plan to augment its public and private open space inventory.</li> </ul> </li> <li>2. Utilize natural and man-made corridors for land use buffers and open space connections. <ul style="list-style-type: none"> <li>• The City shall utilize Bullard, Corgett, and Lum Washes and the Gila River corridor as land use buffers and multi-use trails.</li> <li>• The City shall consider the use of the Roosevelt and Buckeye Canals and the easements beneath overhead electrical power line corridors as land use buffers and multi-use trails.</li> <li>• The City shall utilize proposed regional drainage corridors as defined in the Flood Control District of Maricopa County's Water Course Master Plans (El Rio) and in the Area Drainage Master Plans (SR 303 Corridor/White Tanks, Estrella, and Rainbow Valley/Waterman Wash) as land use buffers, multi-use trails, and open spaces.</li> </ul> </li> </ol>	<p><b>Identify the appropriate location of natural open space areas and corridors within the Surprise planning area.</b></p> <ol style="list-style-type: none"> <li>1. Monitor the planning and design process of the West Valley Recreational Corridor that focuses on the connectivity of the Agua Fria/New River Corridor from Estrella Regional Park to north of Lake Pleasant Regional Park for pedestrians, bicyclists, and equestrians.</li> <li>2. Work with the Town of Buckeye and Maricopa County to identify and implement open space corridors between White Tank Mountain Regional Park and the Hassayampa River.</li> <li>3. Utilize natural washes as part of the comprehensive trail system throughout the planning area. Washes should also be considered as natural drainage basins.</li> </ol> <p><b>Identify the appropriate locations for manmade open space area and corridors within the Surprise planning area.</b></p> <ol style="list-style-type: none"> <li>1. Work with the Cities of Peoria and El Mirage, Maricopa County, the Maricopa Water District, and the Bureau of Reclamation to utilize McMicken Dam, Central Arizona Project canal, Beardsley Canal, and the Agua Fria River as the primary open space linkages between White Tank Mountain Regional Park, Lake Pleasant Regional Park, and Estrella Mountain Regional Park.</li> <li>2. Protect ridge/crestline, steep-slope (more than 10 percent), and Pal Verde-Saguaro vegetation areas as open space through the use of density transfer or purchase of development rights, acquisition, donation, or other acceptable methods.</li> <li>3. Discourage development within the boundaries of the 100-year floodplain and encourage the dedication of a continuous 25-foot minimum setback on both sides of the 100-year floodplain boundary as a buffer and potential trail corridor.</li> <li>4. Ensure that the natural drainage channels are protected and used as a connected trails system to link open space, recreational facilities, schools, and other public facilities.</li> <li>5. Development near floodplains (i.e., within 100 feet) will require a hydrology study to determine appropriate setbacks greater than 25 feet.</li> </ol>	<p><b>Establish an open space acquisition and maintenance plan.</b></p> <ol style="list-style-type: none"> <li>1. Retain scenic vistas, desert washes and vegetation; protect from encroachment</li> <li>2. Respect property rights with purchase, acquisition of easements, tradeoffs for open space</li> <li>3. Include sensitive areas -- riparian resources, wildlife habitat/corridors, native vegetation -- as preservation priorities</li> <li>4. Develop an accessible equestrian trails system integrated with a pathway network serving pedestrians, runners and bicyclists</li> <li>5. Establish area greenbelt network linked to the Town trails and pathway system; integrate with residential neighborhoods <ul style="list-style-type: none"> <li>• Provide a pathway network for pedestrian, bicyclist and equestrian use integrated with open space corridors, parks, residential neighborhoods, Downtown and other commercial areas.</li> </ul> </li> </ol>



TableE - 4.1. (Continued)

Open Space Goals for Communities in the Sun Valley ADMP Area of West – Central Maricopa County, Arizona

	Maricopa County Comprehensive Plan	Buckeye	Goodyear	Surprise	Wickenburg
Social / Community Values	<p><b>Promote the economic and quality of life benefits of open space.</b></p> <ol style="list-style-type: none"> <li>1. Encourage communication efforts with open space stakeholders to share information and discussion on current issues and/or projects.</li> <li>2. Discuss and encourage open space preservation with applicants during the zoning and subdivision process.</li> <li>3. Explore implementation of development standards for open space.</li> <li>4. Participate in multi-jurisdictional projects that promote open space protection.</li> <li>5. Encourage on-going education and communication with residents about open space needs.</li> <li>6. Support and encourage efforts to preserve agricultural land where deemed appropriate.</li> </ol>	<p><b>Make long-range planning for open space needs a process of the development approvals process.</b></p> <ol style="list-style-type: none"> <li>1. Upgrades to existing facilities are necessary. Safety, cleanliness, and capacity enhancements should be appropriately funded so as to maintain standards for current residents; however, the principal effort should be to plan for future needs. This entails long-range planning and land reservation for community and regional open space in addition to other land acquisition objectives.</li> <li>2. As the demand for recreational facilities grows, needs analysis should be conducted regularly. New, master-planned communities are encouraged to contribute to overall Town facilities as well as maintaining leisure enjoyment assets for the exclusive use of their neighbourhoods' residents.</li> </ol>	<p><b>Make wise use of fiscal resources</b></p> <ol style="list-style-type: none"> <li>1. The City shall determine appropriate funding or sponsorships/partnerships (i.e., adopt-an-area) to provide long-term operational and maintenance needs.</li> <li>2. Continue to leverage joint use opportunities for recreational, educational and stormwater facilities that serve planning area residents.                     <ul style="list-style-type: none"> <li>• The City shall update the Southwest Cities, Schools, and Developers Partnership to identify the need for a minimum of five acres for a park adjacent to K-8 school sites and joint use of on-site recreational facilities at high school sites.</li> <li>• The City shall examine the joint benefits of using existing and future large stormwater detention facilities as large urban parks/sports complexes and potential dog parks or "off-leash" running areas.</li> </ul> </li> <li>3. The City shall consider partnering with its surrounding municipalities (i.e., Avondale, Litchfield Park, Buckeye) to discuss the desire for, timing of, and management of regional recreational facilities (i.e., multi-generational facility, sports complex, etc.).                     <ul style="list-style-type: none"> <li>• The City will partner with private non-profit organizations (e.g., YMCA) to permit them to operate City constructed facilities and programs.</li> </ul> </li> </ol>	<p><b>Balance fiscal and environmental responsibilities</b></p> <ol style="list-style-type: none"> <li>1. Ensure that property owners provide approval, in writing, prior to rezoning lands for open space per Arizona State Statutes.</li> <li>2. Designation areas identified as "Conservation Areas" on the <i>MAG Desert Spaces Plan</i> as open spaces.</li> <li>3. Strive to achieve an open space standard of six acres per 1,000 residents.</li> <li>4. Evaluate the annual contribution of funds to maintain and enhance White Tank Mountain Regional Park.</li> </ol>	<p><b>Establish an open space acquisition and maintenance plan.</b></p> <ol style="list-style-type: none"> <li>1. Retain scenic vistas, desert washes and vegetation; protect from encroachment                     <ul style="list-style-type: none"> <li>• Resolve to adopt the Open Space Element's designated trails/wash alignments for acquisition to achieve continuous riding/hiking pathways and open space corridors.</li> <li>• Budget for acquisition of additional parks and open space -- including youth recreation facilities; establish community coalition for activity programming serving all ages.</li> </ul> </li> <li>2. Respect property rights with purchase, acquisition of easements, tradeoffs for open space</li> <li>3. Include sensitive areas -- riparian resources, wildlife habitat/corridors, native vegetation -- as preservation priorities</li> </ol>



TableE - 4.1. (Continued)

Open Space Goals for Communities in the Sun Valley ADMP Area of West – Central Maricopa County, Arizona

	Maricopa County Comprehensive Plan	Buckeye	Goodyear	Surprise	Wickenburg
Environmental Stewardship	<p><b>Protect and enhance environmentally sensitive areas, including mountains and steep slopes; rivers and significant washes; historic, cultural, and archeological resources; view corridors; sensitive desert; and significant wildlife habitat and ecosystems.</b></p> <ol style="list-style-type: none"> <li>1. Conserve mountainous areas that contain important wildlife habitats, cultural resources, and scenic areas.</li> <li>2. Discourage development on ridge or crestlines and on steep slopes.</li> <li>3. Encourage the use of native plant material for all types of landscaping.</li> <li>4. Consider creation of a landscape ordinance.</li> <li>5. Explore implementation of flexible zoning techniques that promote open space preservation.</li> <li>6. Consider alternate funding sources and protection techniques for acquisition of priority open space areas.</li> <li>7. Discourage development in areas that are environmentally sensitive.</li> </ol>	<p><b>Offer a variety of open space experience.</b></p> <ol style="list-style-type: none"> <li>1. Maintain spacious community appearance                             <ul style="list-style-type: none"> <li>• Preserve natural habitats</li> </ul> </li> <li>2. Prefer low water-use landscaping                             <ul style="list-style-type: none"> <li>• Use non-potable water for irrigating turf areas</li> <li>• Encourage distinctive planting themes in various parts of the community</li> <li>• Maintenance, weed control in all common areas</li> </ul> </li> <li>3. Respect Desert Ecosystem                             <ul style="list-style-type: none"> <li>• Encourage retention of natural vegetation</li> <li>• Prefer desert landscaping</li> <li>• Protect cultural or historic sites</li> </ul> </li> </ol>	<p><b>A mix of developed and natural open space.</b></p> <ol style="list-style-type: none"> <li>1. Critically evaluate natural and agricultural areas in a comprehensive manner.                             <ul style="list-style-type: none"> <li>• The City shall consider the Farmland and Desert Preservation Committee recommendations on land in agricultural production within the 65 DNL noise contour of Luke Air Force Base as a high priority for acquisition and preservation while respecting existing development agreements and individual property owner's rights.</li> <li>• The City shall prepare and adopt a Transfer of Development (TDR) policy to facilitate the preservation of open space, parks...</li> <li>• The City shall evaluate the potential funding sources identified in the adopted Parks, Trails, and Open Space Master Plan (i.e., grants, sales tax, revenue bonding, etc.) to acquire both high and medium prioritized open space parcels.</li> <li>• The City shall determine appropriate funding or sponsorships/partnerships (i.e., adopt-an-area) to provide long-term operational and maintenance needs.</li> <li>• The City shall review any proposed vegetation, construction/design of buildings, etc. for wildlife hazard management with the United States Department of Agriculture (USDA)-Wildlife Services Department.</li> </ul> </li> </ol>	<p><b>Coordinate park planning and improvements with other jurisdictional entities in the region.</b></p> <ol style="list-style-type: none"> <li>1. Coordinate with the Maricopa County Parks Department to buffer adjacent uses, protect/provide access, and potentially expand the White Tank Regional Park.</li> <li>2. Coordinate with Maricopa County Planning and Development Department to incorporate adopted city park and open space standards within proposed developed at urban densities.</li> <li>3. Coordinate with the Town of Buckeye and City of Peoria to maintain appropriate park service area coverage where common jurisdictional boundaries exist.</li> <li>4. Communicate on a frequent basis with the Arizona State Land Department and gain their consent for the appropriate designation, disposition, or acquisition of land classified as open space under management within the Surprise planning area.</li> <li>5. Define open space as either natural or developed. Natural open space is a tract of land that is preserved in its natural state. Developed open space has been created by man to convey a sense of openness that may contain passive recreation activities such as seating, viewing, etc., as well as golf courses, landscape tracts and retention basins for storm water.</li> <li>6. Create an open space zoning classification within the City's municipal code to implement the designation of open space in the general plan.</li> </ol>	<p><b>Promote spacious, natural appearance.</b></p> <ol style="list-style-type: none"> <li>1. Maintain, increase shade in public places</li> <li>2. Plant native and drought-tolerant landscape specimens in parks (Coffinger Park, a good example; Sunset Park, needs cooling shade)</li> <li>3. Encourage use of native desert plant materials on private properties and in new developments</li> <li>4. Protect view corridors, hillsides, native vegetation</li> <li>5. Cluster development around useable open space                             <ul style="list-style-type: none"> <li>• Begin planning with and follow through on API applications to the Arizona State Land Department and coordination with the Bureau of Land Management for preservation/protection of prominent scenic vistas and landmarks, such as Vulture Peak as a regional park.</li> <li>• Plant native and drought tolerant shade trees and vegetation in parks and public use areas.</li> </ul> </li> </ol>



TableE - 4.1. (Continued)

Open Space Goals for Communities in the Sun Valley ADMP Area of West – Central Maricopa County, Arizona

	Maricopa County Comprehensive Plan	Buckeye	Goodyear	Surprise	Wickenburg
Interaction of Natural and Built Environments	<p><b>Encourage appropriate open space between communities and land uses.</b></p> <ol style="list-style-type: none"> <li>Promote transitional land uses around mountainous areas, open space linkages, and public access points.</li> <li>Encourage density transitions to separate rural from urbanized areas and to buffer preserve areas from urbanized areas.</li> <li>Protect view corridors through buffering, screening, and other development standards.</li> </ol>	<p><b>Offer a variety of open space experience and place a priority on community space appearance.</b></p> <ol style="list-style-type: none"> <li>Maintain spacious community appearance                             <ul style="list-style-type: none"> <li>Protect views of mountain and desert spaces.</li> </ul> </li> <li>Incorporate useable open space in all residential areas.                             <ul style="list-style-type: none"> <li>Meet outdoor enjoyment needs at neighborhood level.</li> <li>Maintenance, weed control in all common areas.</li> </ul> </li> </ol>	<p><b>Use the development approval process to expand open space inventory</b></p> <ol style="list-style-type: none"> <li>Strategically locate man-made open spaces to convey a sense of openness in the community.                             <ul style="list-style-type: none"> <li>The City shall strongly support the provision and strategic location of golf courses and detention basins in locations that enhance the visual and functional quality of the built environment.</li> <li>The City shall encourage joint-use opportunities for developed active and passive open space whenever practical.</li> </ul> </li> <li>The City shall amend the Zoning Ordinance to reflect revised definitions and standards for active and passive open space.</li> </ol>	<p><b>Continue to improve, expand, and construct parks in conjunction with housing growth, demographic composition, and user desires.</b></p> <ol style="list-style-type: none"> <li>Review the Open Space and Recreation Element in the City's consideration of development proposals to determine the need for new parks and their requirements generated by the proposed project.</li> <li>Increase the amount of park and open space identified in the City's development agreements to total 13 percent (i.e., equally divided between parks and open space areas) of the net project area.</li> <li>Evaluate the appropriate impact fee or dedication of land –in-lieu of impact fee to assemble the land and fund park design and development.</li> <li>Prepare a Capital Improvements Program (CIP) that will include the design, development, and revitalization of parks utilizing available resources over a six-year timeframe.</li> <li>Community or urban parks should be developed when the residentially designated land within its service area is fifty percent built out.</li> <li>Neighborhood or school parks proposed as an amenity in a subdivision shall be developed in conjunction with the first phase of the proposed development.</li> </ol>	<p><b>Establish an open space acquisition and maintenance plan.</b></p> <ol style="list-style-type: none"> <li>Retain scenic vistas, desert washes and vegetation; protect from encroachment.</li> <li>Respect property rights with purchase, acquisition of easements, tradeoffs for open space.                             <ul style="list-style-type: none"> <li>Update land development codes to promote clustered home sites with dedicated trails and connections, useable open space areas, preserved habitats, and protected hillsides.</li> </ul> </li> <li>Include sensitive areas -- riparian resources, wildlife habitat/corridors, native vegetation – as preservation priorities.</li> </ol>



TableE - 4.1. (Continued)

Open Space Goals for Communities in the Sun Valley ADMP Area of West – Central Maricopa County, Arizona

	Maricopa County Comprehensive Plan	Buckeye	Goodyear	Surprise	Wickenburg
Open Space Inventory	<p><b>Improve quantity, quality, and diversity of open space and recreational opportunities.</b></p> <ol style="list-style-type: none"> <li>1. Support efforts to expand regional park boundaries to conserve and protect adjacent open space resources.</li> <li>2. Protect significant cultural resources on developable lands from degradation by encouraging sensitive development or public acquisition.</li> <li>3. Monitor and coordinate with the State Land Department, the Bureau of Land Management, and the U.S. Forest Service regarding reclassification, exchange, disposal, and acquisition of lands identified as proposed open space under their management, to promote the cause of open space conservation.</li> </ol>	<p><b>Offer a variety of open space experience.</b></p> <ol style="list-style-type: none"> <li>1. Provide for recreational activities                             <ul style="list-style-type: none"> <li>• Develop multi-use parks and trails systems</li> <li>• Support outdoor events and venues</li> <li>• Use canal banks for linear parks</li> </ul> </li> <li>2. Maintain spacious community appearance                             <ul style="list-style-type: none"> <li>• Protect views of mountain and desert spaces</li> <li>• Preserve natural habitats</li> <li>• Enhance scenic roadscapes</li> </ul> </li> </ol>	<p><b>A High Level of Active Open Space Acreage and Facilities to Serve Existing and Future Residents.</b></p> <ol style="list-style-type: none"> <li>1. Implement a hierarchy of desired park types.                             <ul style="list-style-type: none"> <li>• The City shall utilize the park standards and guidelines as identified in this element and update its Parks, Trails, and Open Space Master Plan accordingly.</li> <li>• The City shall encourage strategically located neighborhood parks (and K-8 schools) within residential communities that are linked with trails.</li> <li>• The City shall diversify its existing level of park acreage to meet the increasing diverse recreational facility needs (i.e., dog parks, skate parks, community parks, and sports complexes) of its residents.</li> <li>• The City will evaluate the need and timing to enhance its full time and volunteer Parks and Recreation Division personnel to operate and manage its open space facilities and recreation programs.</li> </ul> </li> <li>2. Continue to coordinate the provision of park land and major recreational facilities with other governmental entities and private, non-profit agencies.                             <ul style="list-style-type: none"> <li>• The City shall coordinate with the Arizona State Land Department to include the location of parks within future conceptual and master plans.</li> <li>• The City shall coordinate with the BLM to assess land within BLM's jurisdiction for beneficial passive and active recreational facilities.</li> <li>• The City shall partner with the Flood Control District of Maricopa County and other stakeholders to implement the El Rio Vision within and adjacent to the Gila River, the SR 303 Corridor/White Tank ADMP Update in the north and central region of the Goodyear Planning Area, and the future Estrella and Rainbow Valley/Waterman Wash Area Drainage Master Plans in the south region of the Goodyear Planning Area.</li> <li>• The City shall coordinate the location and timing of adequate large urban park/sports complex land and consider the joint management responsibilities with other adjacent jurisdictions to ensure service area coverage along common planning area boundaries.</li> </ul> </li> </ol>	<p><b>Identify the conceptual locations, types, and general standards for parks.</b></p> <ol style="list-style-type: none"> <li>1. Utilize the park classifications (e.g., neighborhood park/school park, and urban park/sports complex) to increase and enhance recreational acreage within the city.</li> <li>2. Define a park as a tract of land that contains a mix of active and passive recreation facilities potentially including tot lots, defined and improved playing fields and/or sport court areas, and picnic/seating/shade areas that are landscaped/hardscaped in a pleasant manner. Parks should generally be located in the center of their service area and can be developed jointly with schools and serve as retention basins for storm water.</li> <li>3. Establish a standard of six acres of parkland per 1,000 population accomplished through general locational and size requirements for park types.</li> <li>4. Fund and staff full time maintenance personnel to manage the City's existing and new park resources in a high-quality manner.</li> <li>5. Prepare and adopt a Parks Master Plan to determine the specific size, facilities, and locations for new parks; revitalization activities for existing parks; and programs/enhancements for existing public and private recreation programs.</li> <li>6. Prepare a specific park plan for the McMicken Dam Recharge Project, located on the north side of McMicken Dam.</li> </ol>	<p><b>Establish an open space acquisition and maintenance plan.</b></p> <ol style="list-style-type: none"> <li>1. Retain scenic vistas, desert washes and vegetation; protect from encroachment</li> <li>2. Respect property rights with purchase, acquisition of easements, tradeoffs for open space</li> <li>3. Include sensitive areas – riparian resources, wildlife habitat/corridors, native vegetation – as preservation priorities</li> <li>4. Prefer larger, shared open spaces in all land use categories.</li> </ol>



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### 4.3 Regional Recreation Setting

As the west valley continues to be one of the fastest growing areas of new development, recreation facilities have been identified as being an integral component to the community's quality of life standards. New developments are typically providing recreation facilities that support their individual communities and where appropriate capitalize on the existing large regional recreation facilities in the area. As development occurs adjacent to facilities such as Estrella Mountain Regional Park, White Tanks Mountain Regional Park, and the Maricopa Trail Regional Trail System, the developers will create connections for their community residents and be able to capitalize on the features for marketing of their projects. Since the early to mid 1900's these areas have been, and will continue to be, the primary recreational facilities that provide large open space opportunities for passive recreation.

This multi-use assessment focuses on a regional area, which is within 10 miles of the Sun Valley project (Figure 3.1). Recreational resources within this 10-mile study area were identified through agency or municipal plans, websites, or direct contact with agency staff. Each site was inventoried by facility type, owner, and location.

### 4.4 Existing Regional Recreation Resources

This section identifies and describes those recreation facilities found within the 10-mile regional study area. Recreational resources having regional significance to the Sun Valley Project include occur on land owned and managed by federal, state, and county government agencies as well as private landowners. The following is a brief description of the regionally significant recreation resources that exist within the 10-mile Sun Valley ADMP study area and illustrated on Figure XX.

#### 4.4.1 Federal Recreation Resources

**Bureau of Land Management** – The mission of the BLM is to sustain the health, diversity, and productivity of public lands for the use and enjoyment of current and future generations. In Arizona, the BLM administers 12.2 million surface acres of public lands. The Phoenix Field Office, located in the heart of the Sonoran Desert, strives to provide for the protection of renewable and nonrenewable resources by balancing recreational, scientific, commercial, and cultural interest. One of seven field offices, the Phoenix Field Office provides ample opportunities for hiking, primitive camping, horseback riding, off-highway-vehicle travel, mountain biking, wildlife watching, rockhounding, nature study, and







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photography. Within the Sun Valley study area, these activities can occur in and around the BLM managed Hieroglyphic Mountains, Vulture Mountains, Belmont Mountains, and the Hassayampa River Riparian Area.

**Hassayampa River Riparian Area** – The Hassayampa River Riparian Area is located just southeast of Wickenburg along US 93. Designed as a rest area, the BLM collaborated with the Arizona Department of Transportation, US Fish and Wildlife Service, and the Arizona Game and Fish Department’s Heritage Fund to develop 15 interpretive signs describing the Sonoran Desert wildlife and their riparian habitat. Serving as a major migration corridor for many species of birds, this facility offers visitors the opportunity to not only view the ever changing river corridor but the animals that use it.

### 4.4.2 *State Recreation Resources*

**Robbins Butte Wildlife Area** – Located 7 miles southwest of the Town of Buckeye, this 1,681-acre area is administered by AGFD as a wildlife enhancement and viewing area. Selected in the 1950s as an area along the Gila River with the greatest potential for waterfowl habitat enhancement the goal was to not only optimize the habitat potential for wildlife but also provide current and future generations of the public the opportunity to enjoy wildlife-oriented recreation. The primary management emphasis at Robbins Butte is to provide food crops and nesting habitat for upland bird. Secondary management emphasis includes enhancing riparian habitat and the riparian-desert upland ecotone (AGFD 2005).

**Powers Butte Wildlife Area** – Acquired from the Bureau of Reclamation in 1982, Powers Butte is administered by AGFD. Similar to Robbins Butte Wildlife Area, the management objective for Powers Butte is to provide quality wildlife habitat and recreational opportunities along the Gila River. Since the early 1900s much of the riparian and mesquite forest were cleared in order to grow crops. While early crops generally consisted of small grains, that available food source—in combination with heavy salt cedar stands that provided good nesting sites along the river—aided in this area becoming known as “Arizona’s dove factory.” With many of the agricultural fields moving away from small grain production over the last forty years, the dove population significantly dropped in this area. Powers Butte is now managed now for its riparian and aquatic habitats, and provides opportunities for bird watching or dove hunting.



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### 4.4.3 County Recreation Resources

**White Tanks Regional Park** – Nearly 30,000 acres makes this the largest regional park in Maricopa County. Located west of the City of Surprise, the White Tank Mountain range, deeply serrated with ridges and canyons, rises sharply from its base to peak at over 4,000 feet. Infrequent heavy rains cause flash floodwaters to plunge through the canyons, pouring down chutes and dropping off ledges. Over the years these torrential flows have scoured out a series of depressions, or tanks, in the white granite rock, thus giving the mountains their name. Park facilities include picnic areas, a campground, hiking and riding trails and a technical mountain bike course for experienced riders.

**Estrella Mountain Regional Park** – Estrella Mountain Regional Park is located 2 miles south of Buckeye Road in Goodyear. As Maricopa County's first established county park, Estrella Mountain Park covers approximately 19,840-acres. Primarily a remote and rugged preserve area, there are developed areas of the park that resemble more of an urban park setting. In that developed area there are 10 ramadas, picnic tables, playground equipment, two lighted ballfields, an 18-hole golf course, restrooms, rodeo arena, and 65 acres of turf. In the rest of the park there are hiking and riding trails and on the eastern side there is a technical mountain bike course for experienced riders.

**Buckeye Hills Regional Park** – Consisting of 4,474 acres and located in the southwest Valley—just west of SR 85—Buckeye Hills Regional Park is a remote, undeveloped area that allows the visitor opportunities to enjoy the pristine Sonoran Desert or beautiful views of the Gila River riparian area. There are restrooms available, however, there is no running water or electricity at this time.

### 4.4.4 Flood Control District of Maricopa County Facilities

The following flood control existing facilities are located within the study area and could be available for use developing recreation facilities. None of the facilities currently have multi-use components associated with them.

- FRS 1-3 (north of the I-10)
- White Tanks FRS 3 (east of the White Tanks)
- White Tanks FRS 4 (south. of I-10 b/n 195th Ave and Tuthill Rd)
- Beardsley Canal Tributary Wash Basin Levee (east side of the white tanks)



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### 4.4.5 *Local Recreation Resources*

There are currently no regional scaled facilities owned or operated local municipal government agencies.

### 4.4.6 *Private Recreation Resources*

**Estrella Mountain Ranch Community North and South Lakes** – Seventy two acres of private lakes are available for Estrella Mountain Ranch Community residents and their guest. The South Lake Park establishes a sense of place and community where neighbors can meet for social events, picnic with their families, or just relax at the park. The North Lake is home to the community Yacht Club, where residents and their guest can enjoy the use of sailboats, paddle boats, canoes, electric Sundolphins, and kayaks. The lake is also stocked for fishing with catfish, bass, carp, goldfish, and tilapia (EMR 2005)

**The Nature Conservancy Hassayampa River Preserve** – Located 5 miles south of Wickenburg, this 660-acre preserve supports one of the desert's best remaining stands of cottonwood-willow forest. Acquired in 1986, the preserve is also home to more than 280 resident and migratory bird species. It is here within the preserve that the Hassayampa—that typically flows underground—rises to the surface to create this lush streamside habitat. Trails, picnicking, and guided tours are available to preserve visitors.

**Speed World Motoplex** – Family owned and operated, Speed World Motoplex is the oldest racing track in the Phoenix area. This facility allows friends and family to opportunity to get together to enjoy the world of drag racing. The motoplex is located in the northwest Valley west of the US 60 and south of Jomax Road.

## 4.5 **Proposed Regional Recreation Resources**

### 4.5.1 *County Recreation Resources*

The Maricopa County Regional Trail System proposes several trail corridors in and adjacent to the Sun Valley ADMP area. The corridor locations are generalized and the final implementation of the trails will require the cooperation of the owners developing the master plans for the area. The trail system will provide connections of major features in the Sun Valley ADMP area such as the Hassayampa River, White Tanks Mountains and CAP canal. Several trails use the existing power line corridors and could be implemented with cooperation from the appropriate utilities.



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### *4.5.2 Flood Control District of Maricopa County Facilities*

There are no known regional recreation facilities currently planned for existing or future flood control facilities. In addition to the Sun Valley ADMP a study is under way for rehabilitation of the FRS located along I-10, and another study is under way for the Hassayampa Water Course Master Plan. The Town of Buckeye is participating in all of the studies. The Town may identify specific locations and facilities for regional recreation that would be associated with one or more of the proposed flood control facilities that result from these studies. Continued coordination with existing recreation plans during the development of alternatives will identify the flood control facilities best suited for potential multi-use development.

### *4.5.3 Local Recreation Resources*

Buckeye Town Lake is a lake proposed by the Town of Buckeye. The Lake Project is located on the Gila River at the southern end of Miller Road in the Town of Buckeye. The Town plans to coordinate with the Flood Control District and the State Lake Improvement Fund to build the lake. The Town's recently adopted Vision Plan and the Parks Trails and Open Space Master Plan identifies several potential regional parks within or adjacent to the Sun Valley ADMP area (Figure 3.2). The town also is in the process of acquiring a parcel of BLM land south of the White Tanks regional Park through the Recreation and Public Purposes Act. The Town's intent is to keep the area in a natural condition and preserve the area as an extension of the County Park. A trail system could be developed that would connect to the existing park trails and could also connect to the Flood Retarding Structures corridor along I-10.

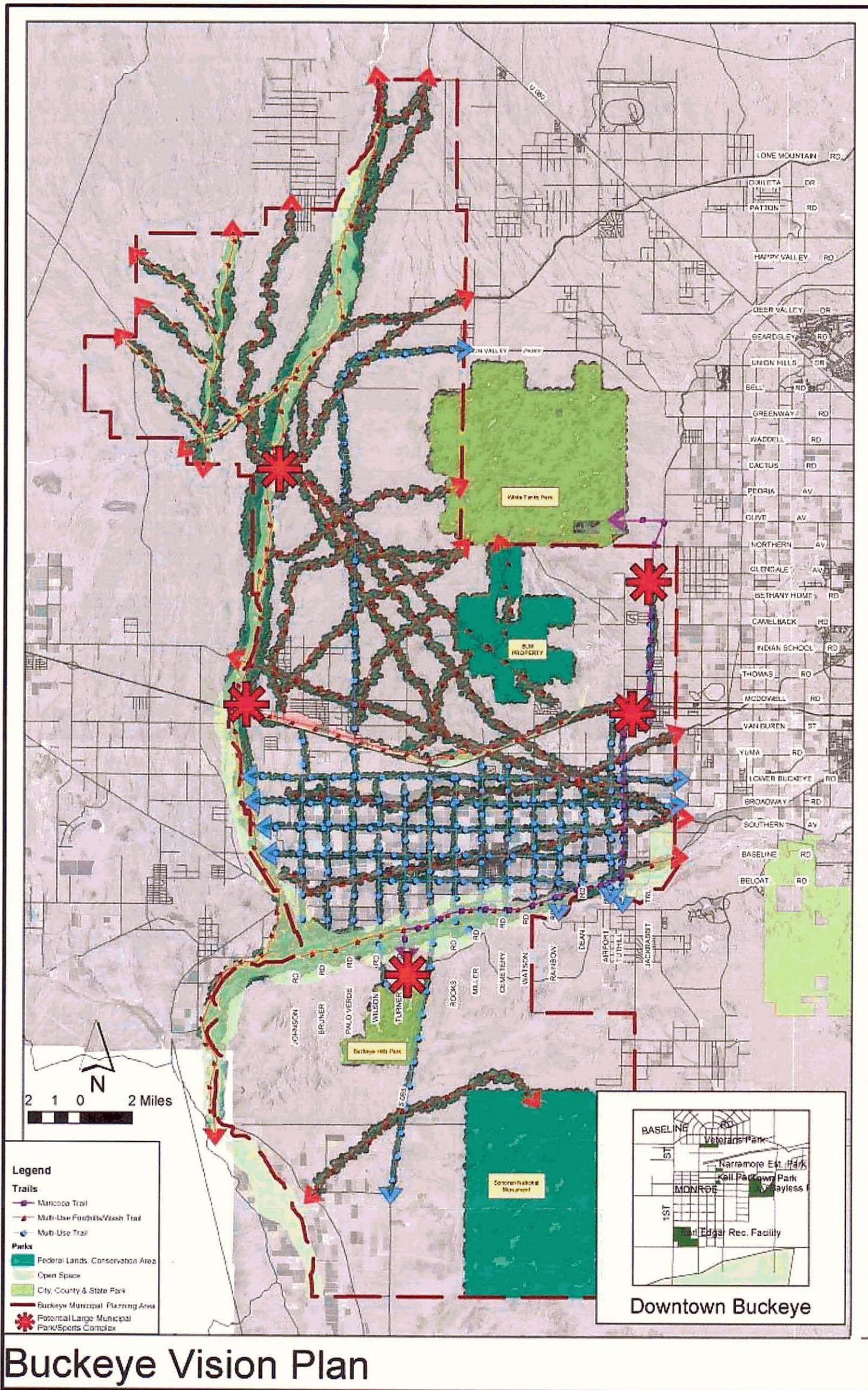


Figure 4.2  
Buckeye Vision Plan



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### **4.6 Recreation Multi-use Opportunities and Constraints**

The District has developed a County-wide database for mapping recreation resources. A map of the recreation, multi-use opportunities in the Sun Valley area is shown in Figure 4.3. The County has identified a substantial area south of the White Tanks Regional Park as potential open space and this area would encompass much of the White Tanks Mountains that are outside the Park. The Town of Buckeye is currently pursuing acquisition of BLM land in this area that would include most of the area identified in the County mapping. The open space north of the Park would provide a connection to the Mountains near Wickenburg. This connection will take the form of a corridor through this area as development of some parcels north of Sun Valley Parkway is already under way and other master planned communities have been approved in this area. Close coordination between the Town of Buckeye, the County and developers could result in an open space connection between the mountain ranges. The County's mapping also identifies the Hassayampa river and Wagner wash as open space corridors and those have been identified in Buckeye's open space plan as well. The two riparian corridors also present good opportunities for coordination between the Town and County to establish important open space corridors in the Sun Valley area. The Town's open space plan indicates two regional park locations along the Hassayampa River and use of existing drainage corridors for flood control facilities would present the opportunity to extend open space towards the White Tanks Mountains. Coordination with developers of master planned communities could result in corridors that fully extend to the mountains and provide a complete connection to the river for recreation and wildlife use.

Some of the most significant potential constraints to developing a cohesive system of open space will be the master planned communities. The Sun Valley ADMP area has several master planned communities approved and several others in various stages of planning. Each development community has its own ideas for size and location of open space and close coordination will be required to assure the open space is developed in a logical and usable pattern. Existing District facilities such as the FRS along I-10 and future facilities that result from the Sun Valley ADMP provide opportunities to develop a plan with regional unifying elements that would benefit the community as a whole. With input and cooperation among all the stakeholders there is an opportunity to develop a regionally based recreation plan that serves local recreation needs and meets the desires of the Town, County and communities for meaningful open space that maintains the natural landscape setting of the Sun Valley area.

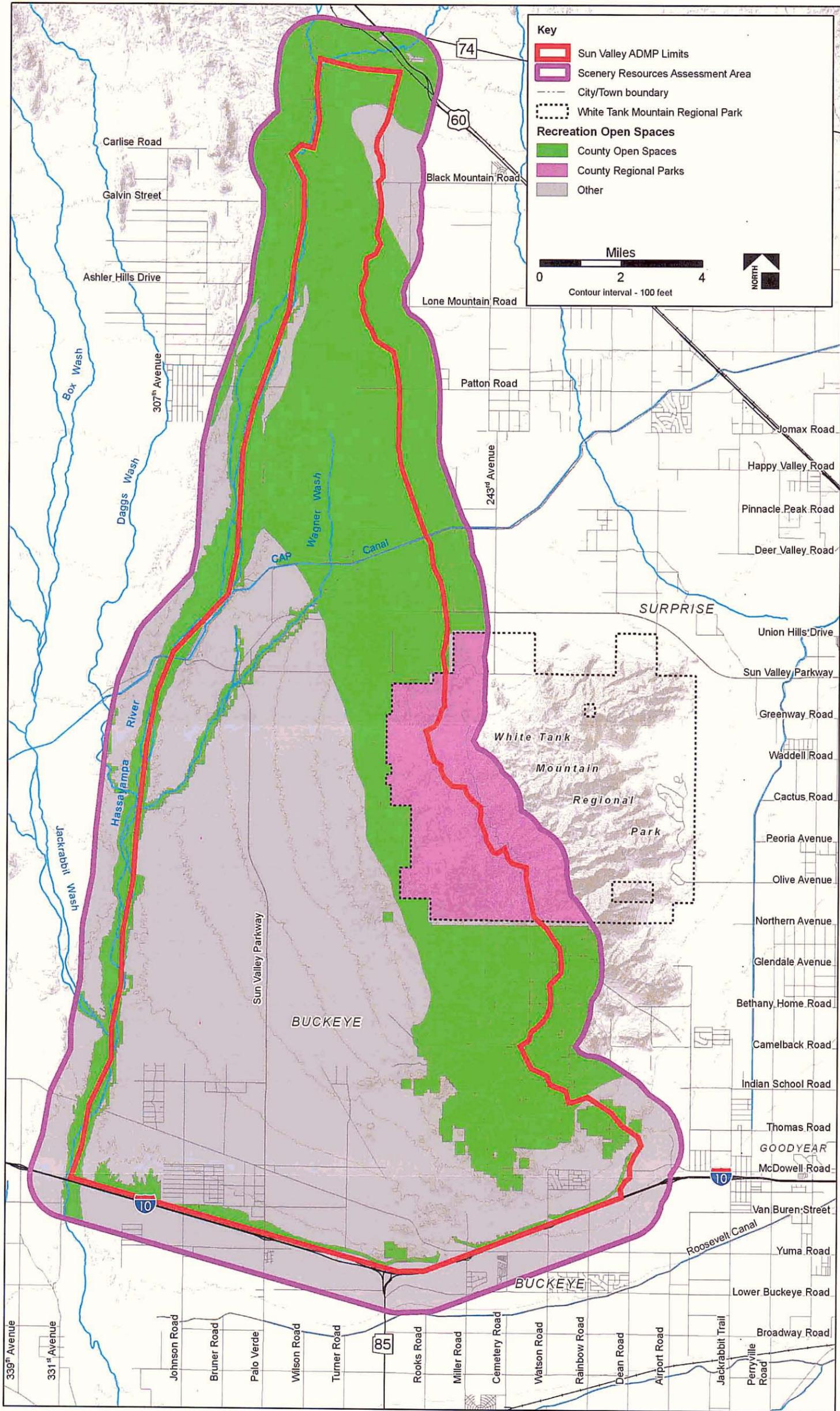


Figure 4.3

County Recreation and Open Space Mapping

### 4.7 Recreation Multi-use Concepts Workshop

To better understand the wide range of recreation and multiuse opportunities in the Sun Valley area the project help a workshop for development of conceptual ideas. The workshop was facilitated by the District included representatives of the technical and aesthetic side of the project from the District and consultant team. The workshop also included representatives of the Buckeye FRS rehabilitation project that is within the Sun Valley ADMP area. Though smaller in scale than the Sun Valley ADMP area the Buckeye FRS project is closely linked to the ADMP because of its location and its purpose id to develop more detailed design ideas for use of the existing structures as part of the rehabilitation process. The workshop was a successful tool for considering a wide range of input for the project and the concept plan will be a consideration in developing the alternatives and final recommended plan.

#### 4.7.1 Workshop Concept Plan

During the workshop each project team provided and overview of the technical and aesthetic aspects of their project and conceptual design ideas were discussed as part of the full group. During small group design, sessions two concept plans were developed for each project. The results of the conceptual designs for the Sun Valley ADMP area have been combined and the resulting concept is shown in Figure 4.4. The plan identifies several major recreation opportunities that could coordinate with potential flood control facilities. One of the primary opportunities occurs at the location where power lines, wash corridors and Sun Valley Parkway converge near the center of the study area. This location is also identified on the proposed master planned community as a commercial core of the Sun Valley area. The One of the power lines has been identified by the County for its Maricopa regional Trail and the two wash corridors would make natural extension of the trail system toward the White Tank Mountains and the Hassayampa River. Other key plan elements include:

- A western entrance to White Tanks Regional Park
- A 'necklace' of parks at the base of the White Tank Mountains using potential basins for open space.
- Regional park opportunities along the Hassayampa River and CAP that coordinate with the Town of Buckeye's Open Space Plan.



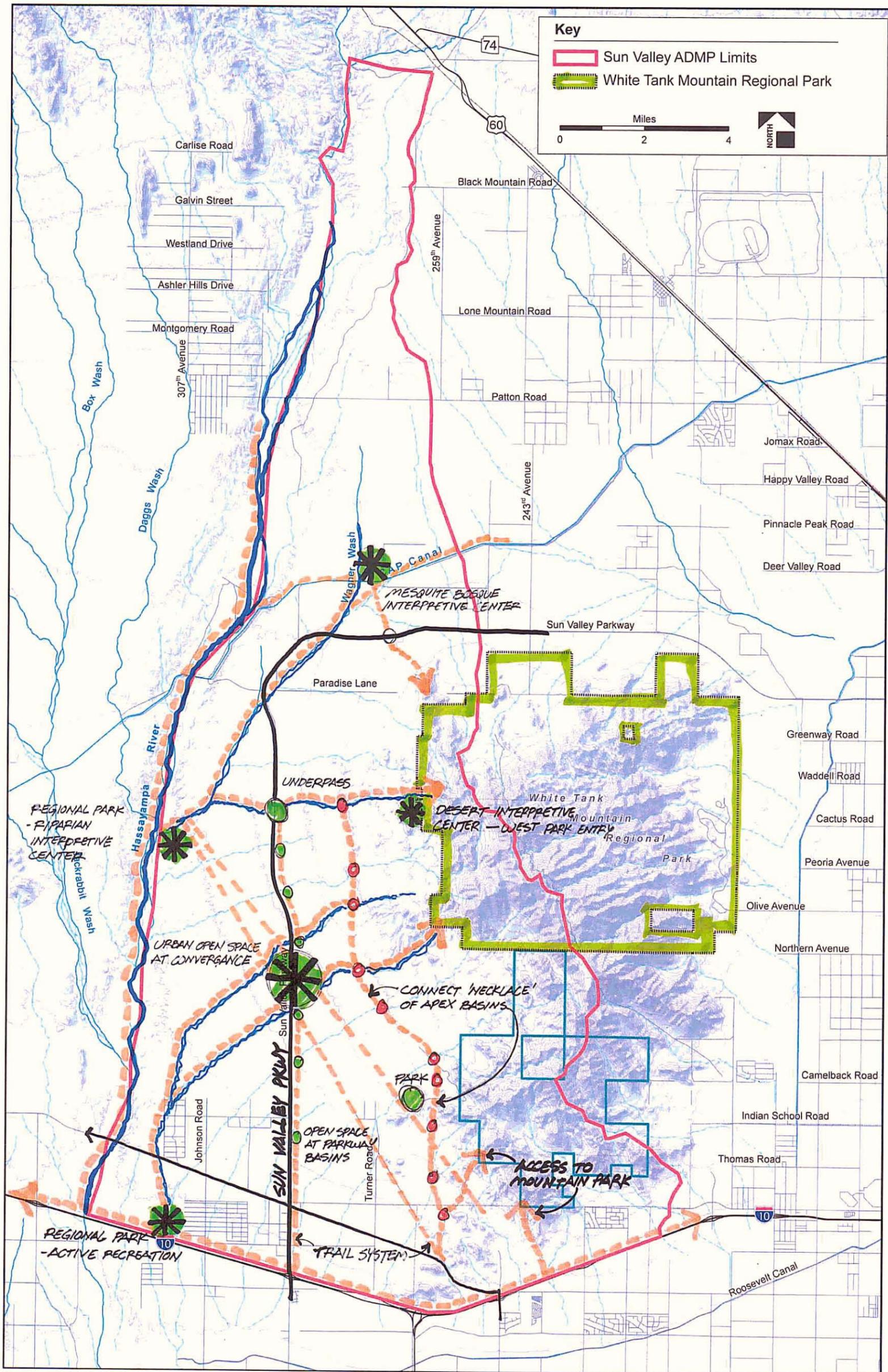


Figure 4.4  
Recreation Multi-Use Workshop concept



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### 4.8 Possible Partners and Funding Sources

#### 4.8.1 Possible Partners

The use and development of existing or new stakeholder groups, special interest groups, private and public organizations, not-for-profit organizations, etc., is key to the success of a proposed project. A few of these groups are listed below.

- Valley Forward – Valley Forward is a non-profit business organization that promotes aesthetic, cultural, and quality-of-life interest in the Phoenix area. Valley Forward is interested in promoting the development regional trail connections throughout the valley.
- Arizona State Horseman's Association (ASHA) – This organization has been extremely influential in the success of trail development projects in the area. Supportive of all trail types this organization has often times written letters of support for funding request.
- Local Home Owners Associations/Groups – Residential development in these project areas is growing exponentially. These groups are developing trails within their communities to link to the regional trail system. These communities can potentially take an active roll in the support, implementation and maintenance of portions of the trail. These groups can also serve as the “eyes and ears” of the community to help deter crime and keep the trails safe for all users.
- Maricopa County Trails Commission – The Trail Commission seeks to create linkages between County Park Systems and a number of individual trail projects throughout the Valley. Working together, the goal is to make recreational destinations more visible and accessible for the entire County.
- Central Arizona Water Conservation District (CAWCD) Board of Directors – The Central Arizona Project (CAP) canal, owned by the Bureau of Reclamation (BOR) is managed and operated by the CAWCD. The Board is responsible for establishing policy and has been very instrumental in the pursuit to develop the regional trail along the south side of the canal.
- Arizona State Committee on Trails (ASCOT) – ASCOT serves as an advisory committee to the Arizona State Parks Board concerning non-motorized public trails throughout the state.

#### 4.8.2 Possible Funding Sources

There are several local, state, and federal funding opportunities available for the implementation of trails, trail crossings, and trail signage.

- General Funds of the Affected Municipalities – The primary revenue source of local municipalities, these funds are limited and often used to only provide the necessary match to state or federal grants.
- General Obligation Bonds – With proper planning, bond packages that are tied to specific facility are program improvements can be presented for voter approval. Bonding can



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provide the facilities more expediently if approved by the voters, however, it takes many years to plan and develop the bond package.

- Highway User Revenue Fund – The Highway User Revenue Fund (HURF), consists of State gas tax revenues, the vehicle license tax, and other miscellaneous fees and services. This revenue source constitutionally restricted to roadway purposes, which includes all purposes contained within the roadway right-of-way. Arizona jurisdictions have utilized HURF to provide roadway landscaping and to construct bicycle lanes, paved shoulders, sidewalk facilities, and shared use pathways that are within the roadway right-of-way. The HURF can also be used to construct bicycle facilities as part of roadway bridge crossings of the Hassayampa or Gila Rivers to access a path on both sides of the river, and for secondary pathways, bike lanes, sidewalks, landscaping, and support facilities such as park-and-rides and rest areas located within the roadway right-of-way. This kind of funding can also technically be used for at-grade pathway crossings of major roadways as well as grade-separated crossings such as bridges and underpasses.
- Local Transportation Assistance Fund – Recent legislation has changed the eligibility of LTAF funds, which now must be used for transit purposes in all jurisdictions. These funds may be available for construction of sidewalks, bicycle racks, and other facilities that directly relate to or support transit use.
- Arizona State Parks Heritage Funds – Monies are appropriated statewide from this fund to a variety of State Parks projects including development of trails. Trail funds are a 50-50 match to locally provided money. When trails are a part of other projects, such as an interpretive center, park development, trailheads, etc., the project may be eligible for other Heritage Fund categories. The specific trails fund category of the Arizona Heritage Fund is only available to trails currently listed in the Arizona State Trail System.
- Arizona Game and Fish Department – The Arizona Game and Fish Department provides 100 percent funding grants for projects including habitat creation, interpretive displays, signage, improved access areas for wildlife, etc. The grants do not require agency matches, and are awarded annually through a nomination and approval process similar to that of the Arizona State Parks Heritage Funds. Eligible applicants include the federal government or any federal department or agency, Indian tribe, the State of Arizona, all departments, agencies, boards and commissions of the state, counties, school districts, cities, towns, all municipal corporations, and any other political subdivisions of the state.
- Transportation Enhancement Activity Funds (TEA-21) Change to new bill language– Transportation Enhancement Funds are a source of federal funds available for pedestrian and bicycle projects. These funds are set aside by TEA-21 in order to add community or environmental value to a completed or ongoing transportation project. Fifty percent of the Transportation Enhancement funds are retained by the Arizona State Transportation Board for ADOT projects. The remaining enhancement funds are available for local projects recommended by the metropolitan planning organizations (MPOs) and rural councils of government (COGs).

The eligible Transportation Enhancement activities include the following:

- Provision of facilities for pedestrians and bicycles (off-road or on-road facilities, including modification of existing public sidewalks to comply with the requirements of the Americans with Disabilities Act),



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- Provision of safety and educational activities for pedestrians and bicyclists,
- Acquisition of scenic easements and scenic or historic sites,
- Scenic or historic highway programs (including the provisions of tourist and welcome center facilities),
- Landscaping and other scenic beautification,
- Historic preservation,
- Rehabilitation and operation of historic transportation buildings, structures, or facilities (including historic railroad facilities and canals),
- Preservation of abandoned railroad corridors (including the conversion and use for pedestrian or bicycle trails),
- Control and removal of outdoor advertising,
- Archaeological planning and research, and
- Environmental mitigation to address water pollution due to highway runoff or reduce vehicle-caused wildlife mortality while maintaining habitat connectivity, and
- Establishment of transportation museums.

Local government projects must be sponsored by a governmental body and must be endorsed by a MPO or rural COG. Private non-profit organizations are also able to work with governmental agencies to develop project applications. Transportation enhancement funds must be matched with other non-Federal funds of the total project costs. In Arizona, TEA-21 awards must be matched with a 5.7 percent cash contribution from sponsoring governments.

- Congestion Mitigation and Air Quality Improvement Program (CMAQ) – These funds are programmed by TEA-21 for projects that are likely to contribute to the attainment of a national ambient air quality standard, and congestion mitigation. These funds can be used for a broad variety of bicycle and pedestrian projects, particularly those that are developed primarily for transportation purposes. The funds can be used either for construction on bicycle transportation facilities and pedestrian walkways or for non-construction projects related to safe bicycle and pedestrian use (maps, brochures, etc.). The projects must be tied to a plan adopted by State and MPO.
- Bridge Replacement and Rehabilitation – These funds may only be used for replacing and rehabilitating bridges. This program provides funding for replacement of a structurally deficient or functionally obsolete highway bridge or to rehabilitate the structural integrity of a bridge. Bicycle lanes and sidewalks can be built as part of bridge rehabilitation, as well as pathway undercrossings of bridges.
- Highway Safety Funds – Bicycle and pedestrian safety remain priority areas for highway safety program funding. The Governor's Office of Highway Safety administers funding for safety-related programs in Arizona, including pedestrian and bicycle projects that improve safety along or across roadways. Grants are in the form of reimbursable contracts and are made based on a 10 percent local match.



## SUN VALLEY AREA DRAINAGE MASTER PLAN

### SECTION 5: ALTERNATIVES EVALUATION

#### 5.1 Introduction

Alternative flood control solutions were developed through a process that incorporated considerations of environmental impacts, scenic qualities, and multi-use opportunities while satisfying the primary need for flood control for public safety. In the evaluation, a brief description is provided for each alternative that highlights the major flood control components. There is a brief overview of potential environmental effects, scenery resources, and multi-use opportunities associated with each alternative. A summary of the evaluation is presented in Table 5.1. Each alternative was designed to meet the same technical design criteria with regard to peak flow volumes and velocities. During the alternative development phase, the Sun Valley ADMP area was divided into drainage sub-areas based on the outfall location of the alluvial fans within a geographic area. Some of the alternatives reflect a design for only certain sub areas. These alternatives are then combined with other alternatives to create a complete alternative for the study area.

The factors for environmental considerations of the alternatives focus on the amount of disturbance of existing vegetation and habitat and the general effects to wildlife use and movement. A more detailed report on the existing environment was prepared for the project and can be reviewed for more information. The loss of habitat will be a key component in the long-term success of maintaining wildlife use in the Sun Valley ADMP area. While revegetation and restoration can result in high quality habitat, it generally takes a long time before it reaches the quality of undisturbed habitat. The Sun Valley ADMP area is a narrow drainage area between the White Tank Mountains and the Hassayampa River and it serves as an important area for movement between the mountains and the river.

The aesthetic factors considered in the development of the alternatives focus on maintaining the compatibility of proposed flood control features with the existing and future landscape character to the extent possible within the framework of providing flood control for public safety. Section 2 of this report analyzed the scenery resources of the Sun Valley ASMP area in terms of scenic quality and sensitivity and well as the existing, future and historic landscape character. The Flood Control District's method of compatibility analysis was used to determine the best way to incorporate the flood control structures into the landscape considering all these factors and each of the alternatives is reviewed in relation to



**Table 5.1  
Summary of Alternatives Evaluation**

	<b>Alternative A</b>	<b>Alternatives B1/B2, B4-1, B4-2, B4-3, B5</b>	<b>Alternative B3</b>	<b>Alternative C</b>	<b>Alternative D</b>
<b>Scenery Resources</b>					
Landscape Character	Compatible with existing and future landscape character	Somewhat compatible but sensitive basin design would be required to be compatible with future development.	Similar to the other B series alternatives but the excavated channel could be difficult to make compatible with future development	Not compatible with existing or future landscape character because of concrete channels.	The compatibility of flood control facilities developed by private developments could vary greatly from one planned community to the next. This alternative would have the possibility of having highly compatible and incompatible flood control methods developed on adjacent properties, and the overall effect on the visual setting could vary greatly. Each planned community would develop its own aesthetic approach to enhancing flood control components resulting in a patchwork of landscape themes and architectural characters.
Scenic Quality	Compatible with Variety Classes in up-fan areas because of no basins. Somewhat compatible in other areas because of wide natural corridors	Less compatible in up-fan areas because of basins but appropriate aesthetic treatments would increase compatibility in all Variety Classes.	Incompatible with existing Variety Class A because of excavated channels. Appropriate aesthetic treatments would be needed to be compatible with Class B areas.	Similar to Alternative B3 except the concrete channels could limit use of aesthetic treatments.	
Scenic Integrity	Less disruptive and more compatible with existing integrity because of lack of basins.	Incompatible with high integrity areas and aesthetic treatments could make it compatible with moderate integrity areas.	Similar to the other B series alternatives except the excavated channels are less compatible and limit possibilities for aesthetic treatments.	Somewhat more compatible with high integrity areas than B alternatives because of lack of basins but concrete channel would be difficult to make compatible with all integrity classes.	
Visual Sensitivity	Compatible in upfan areas because of lack of basins. Basins in immediate foreground along Sun Valley Parkway would require appropriate aesthetic treatments to reduce disruption to visual setting.	Compatible in most high sensitive areas because flood control elements mostly located in middle ground and background. Several basins in immediate foreground areas would need good aesthetic treatments to be more compatible.	Compatibility is similar to the other B series alternatives because flood control elements are in similar locations. The excavated channel would present more challenges for incorporating aesthetic treatments to make compatible with immediate foreground.	Somewhat compatible because most flood control elements are not in highly visible areas. Basins and concrete channels located in immediate foreground along Sun Valley Parkway would need appropriate aesthetic treatments to reduce visual impact in the high sensitive areas.	
<b>Recreation/Multi-use opportunities</b>					
Maricopa Regional Trail	Corridors are shorter than in other alternatives and reduce the opportunities to create extensive integrate with Maricopa Trail Plan. Trails could be put into active alluvial fan areas below apex but would be subject to damage on a regular basis as the geomorphic processes would continue over a large area and but contained to certain areas.	Longer corridors create more opportunities for incorporating regional trails and basins could serve as trailheads in key locations. The multiple corridors in the series of alternatives present good opportunities to coordinate with the Regional Trail plan to find the best routes for trails in combination with flood control facilities.	Similar opportunities to the other B series alternatives except there is a limited selection of corridors. Buffers adjacent to the corridors could be more important because of the excavated channel and the inability to put trails within a large portion of the corridor.	The corridors are similar in length to the B alternatives but similar to Alternative B3, there is one set of corridors to choose from for possible trail locations. The concrete channel would also limit the location of trails within the corridors and buffering would be important to create pleasant recreation experience. The lack of basins at the apex of the fans reduces the opportunities to establish trailheads unless private land in purchased that use.	This alternative could substantially reduce the opportunities for to coordinate with the Maricopa Regional Trail and Buckeye's Open Space plan because each development would develop its own network of local trails and parks. Continued coordination among the developments and the Town could provide some opportunities to connect the planned parks along the river to the White Tank Mountains.
Buckeye Open Space Plan	The lack of basins reduces the opportunities to incorporate regional recreation facilities in addition to those identified in the open space plan. Since the corridors are shortest and there are less opportunities for trails, connecting regional facilities would be more difficult than in some of the other alternatives.	The basins present good opportunities for use as regional scale open space and trailheads for regional and local trail networks. The multiple corridors available in the various alternatives present an opportunity to coordinate the trails with local development and connect the planned regional parks along the river to the White Tank Mountains.	Similar opportunities to the other B series alternatives. The identification of a single set of corridors could limit opportunities to coordinate with local development to access the regional open space in the basins.	Opportunities are limited, somewhat similar to alternative A because of the lack of basins. The corridors are longer so there would be good opportunities to connect the planned regional parks along the river with the White Tank Mountains.	
<b>Environmental Resources</b>					
	Large areas of undisturbed habitat would be retained for potential wildlife use. Shorter corridors that wildlife would have to move through from one area to another. The large areas of undisturbed open space could result in less developed open space for the community and maintaining connectivity..	There is generally more disturbance than Alternative A and more loss of habitat because of basins. Existing washes are trained in corridors but could be subject to long-term degradation because of increased flood flows.	The excavated channel could become impediment to wildlife use of corridors because of lack of potential habitat. There is also much more disturbance adjacent to existing washes. Total amount of corridors for potential wildlife movement is similar to other B alternatives.	The concrete channel has no value for wildlife use and results in major disturbance adjacent to existing washes. As in B3 there is a reduced disturbance to existing washes since the flows are within the excavated channel.	This alternative could substantially reduce the opportunity for coordination with FCD and AGFD regarding wildlife use of the corridors and basins.



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this compatibility. Additionally, the opportunities for incorporation of architectural enhancements of structures are discussed.

The District's flood control facilities often include elements that are large open areas to convey, store or detain storm drainage. However, since the frequency of storms that fully utilize the capacity of the flood control structures is very low, the areas are often dry and available for other uses. The key to developing the multi-use opportunities of the District's facilities is the coordination with local agencies open space planning efforts and provision of additional area when necessary to accommodate multiple uses of facilities within the context of District maintenance activities. For the Sun Valley ADMP the multi-use opportunities of the alternatives are assessed in relation to the Town of Buckeye's *Open Space Plan* and the *Maricopa Regional Trail Plan*. The opportunities for coordination and enhancement of recreation networks with the future adjacent development are also discussed.

### 5.2 Alternative A

In Alternative A (Figure 5.1), the natural geomorphic processes would be allowed to occur within a designated active alluvial fan area downstream of the apex. There would not be a developed flood control feature at the apex of the alluvial fans and flood flows and sediment would be controlled downstream of the region of uncertainty. The flows would be captured in the up-fan area by partially excavated collector channels. Once collected, the flows would be routed downstream in leveed corridors until the flows reach the outfall of the fan. Off-line detention basins would be provided in several of the sub areas to restrict peak flows delivered to existing channels or culverts at Sun Valley Parkway. For fans 10 and 11 in the FRS 2 & 3 Sub-area, there would be no structural measures proposed for the entire fan.

#### 5.2.1 Environmental Considerations

This alternative would preserve substantial areas of existing Sonoran Desert habitat in the area of the fan apices. Though the areas would be subject continued flooding, the natural disturbance regimes and deposition of sediment would maintain the natural habitat over time with minimal degradation. The open space would provide large undisturbed areas for wildlife and the length of corridors that wildlife would have to traverse in moving from one area to another would be reduced. These preserved areas would eventually be surrounded by development and most of them may not be large enough to continue natural ecosystem processes over the long term. Since the preserved open space is so large in some areas it



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could be unlikely the planned development for the area would retain significant additional open space within the communities because of the loss of land at the fan apices. The reduced amount of additional open space within the communities could lead to a lack of connectivity of open space within and between the master planned communities. The lack of connectivity or opportunity to move into other areas could reduce the benefit of having the large undisturbed areas since they could become isolated.

### *5.2.2 Landscape Character/Aesthetic Treatment*

The fan apexes are located in the Natural/Pastoral Valley Plains and Bajada Character Units. The character of the vegetation and landform of the units would be retained over large areas downstream of the fan apices. The need for aesthetic treatments would be reduced compared to other alternatives because the drainage corridors are shorter and there are no large basins at the apex of each alluvial fan. The preservation of the large areas of natural desert character should encourage use of native vegetation within the planned communities and serve to expand the desert character of the Sun Valley ADMP area. This alternative is a combination of non structural and soft structural approaches to flood control and would be compatible with the existing and future landscape character of the Sun Valley ADMP area.

### *5.2.3 Multi-use Opportunities*

The large preserved areas at the fan apices could potentially have multi-use trails that would allow recreation use of the areas for hiking and wildlife viewing. The trails could also connect the neighborhoods in the surrounding development to an overall open space system. The incorporation of trails would need to be coordinated with the Town of Buckeye and adjacent developers. Since the areas would remain in their natural condition, including the drainage, the District would likely not need access roads into these areas for flood control activities. The potential to use the service roads, as the backbone trail system, would be diminished and all trails would need to be developed by the Town or private developers. This alternative would also have fewer drainage corridors than most of the others and the potential for connectivity of an overall trail system that utilizes the corridors and would be consistent with the Town's Master Plan could be reduced. The basins in this alternative would be located along Sun Valley Parkway and well positioned to be used for development of active park facilities.



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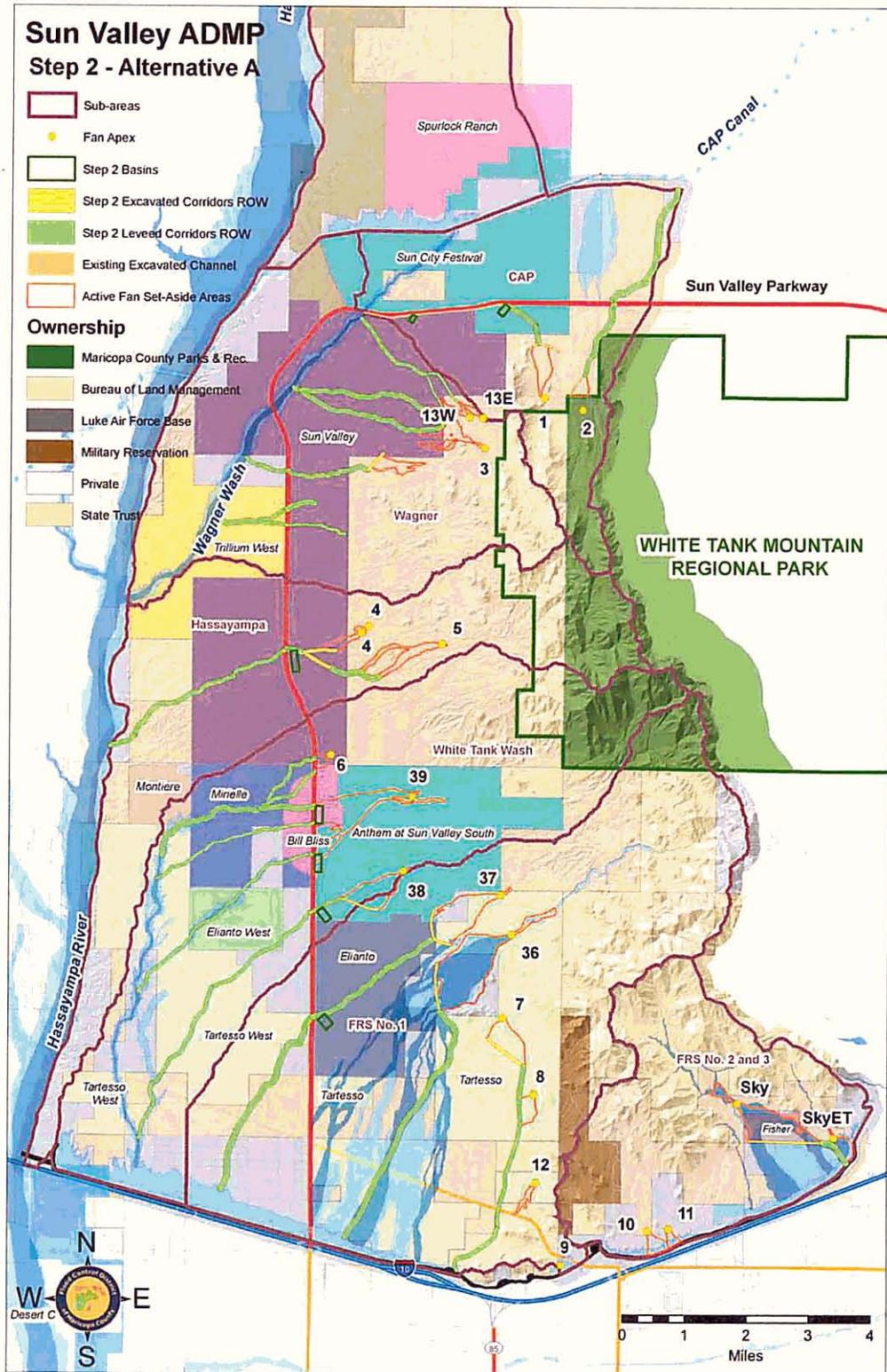


Figure 5.1



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### **5.3 Alternative B1/B2, B4-1, B4-2, B4-3 and B5**

The B1/B2, B4 series and B-5 Alternatives are similar in the approach to controlling flood hazards and are discussed as a group in this section. In these alternatives, upstream flows are captured at the apex using primarily on-line detention basins. The presence of the detention basins would eliminate the downstream alluvial fan uncertainties by controlling the flow of water and sediment near the apex. Downstream tributary inflows would also be controlled within leveed corridors.

Several of the alternatives are used in combination with each other to create full alternatives. Alternative B1 covers only the CAP and White Tanks Wash sub areas and would be based on using a relatively larger on-line detention basin at the apex. It is combined with the B4 Alternatives that would also use larger basins at the apex to create complete alternatives for the study area. The B4 Alternatives explore different approaches to combining the drainage from the fans and introduce several drainage corridor locations. This flexibility may be valuable in developing the recommended plan that is compatible with the planned development in the Sun Valley ADMP area.

Alternative B2 would also capture the upstream fan flows in basins at the apex of the fans but would use a relatively smaller basin. Downstream tributary inflows would also be controlled within leveed corridors and the smaller basins of Alternative B2 would require a slightly larger downstream corridor. However, the size of the corridors in the B1/B4 Alternatives would quickly approach the same as the B2 as the downstream flows would increase from the tributary flows of the adjacent development.

The B-5 Alternative is only for the CAP sub area. It is an option that includes more area in channels and less in basins, similar to the B2 Alternative. It could be combined with the B1/B4 Alternatives or with the B2 Alternative.

#### *5.3.1 Environmental Considerations*

The series of B alternatives would result in more disturbance of the natural desert environment than Alternative A. The increased loss of habitat could cause disruption of movement of wildlife because of not only the loss of habitat but also the connectivity of the habitat across the study area. The multiple corridors should provide opportunities for movement between patches as habitat reestablishes, but restoration of native desert habitat will be slow without supplemental irrigation.



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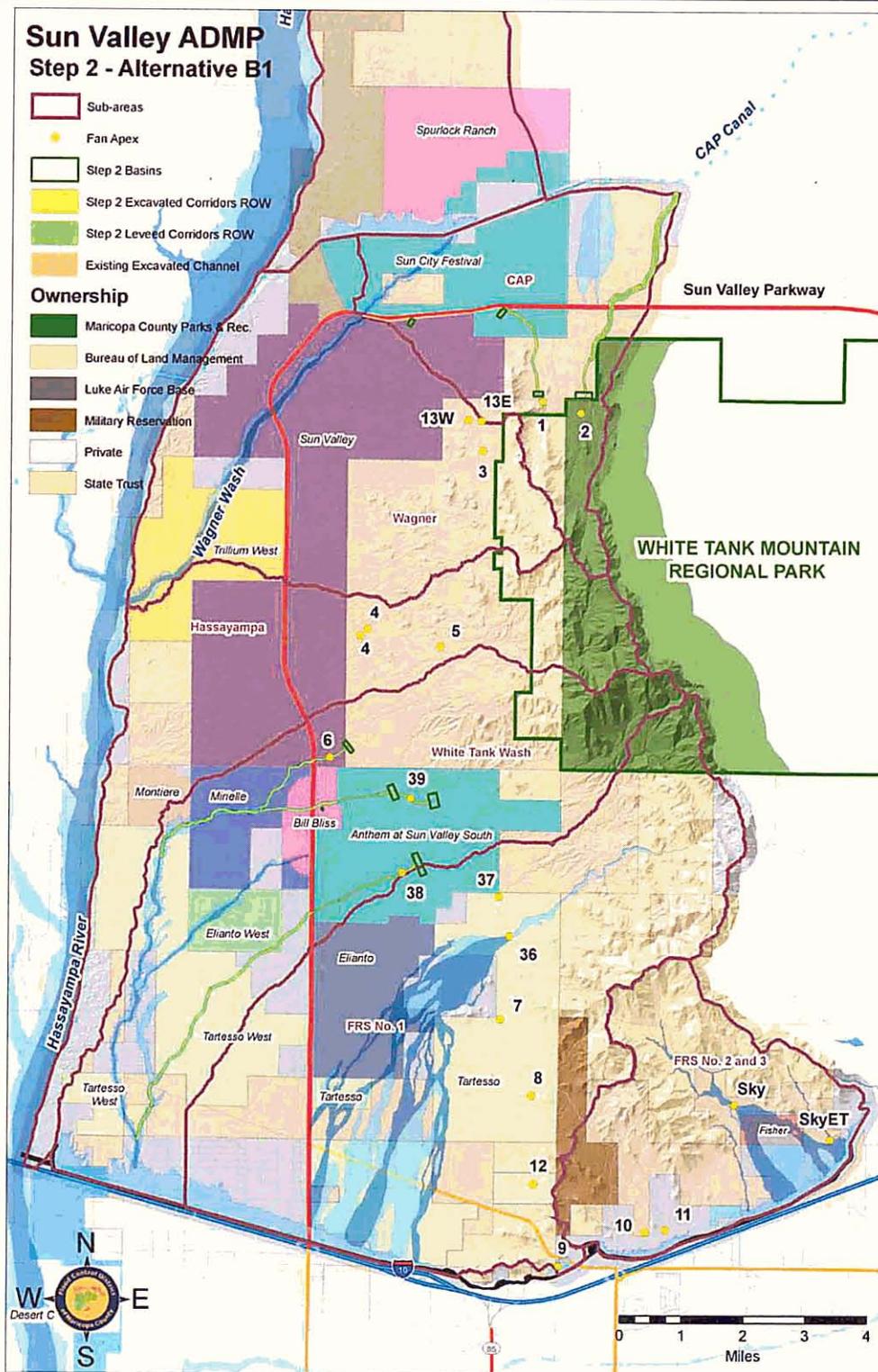


Figure 5.2



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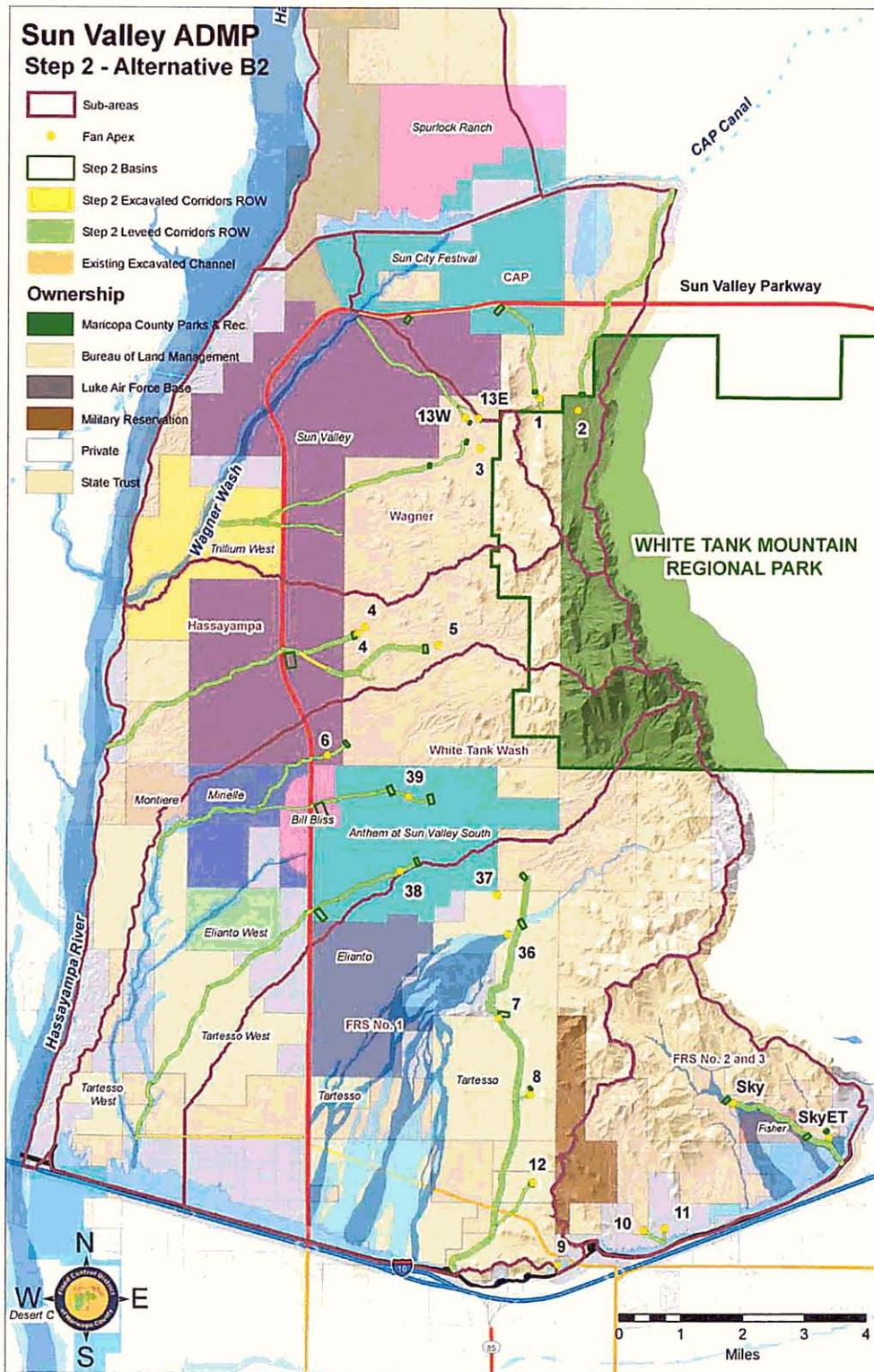


Figure 5.3



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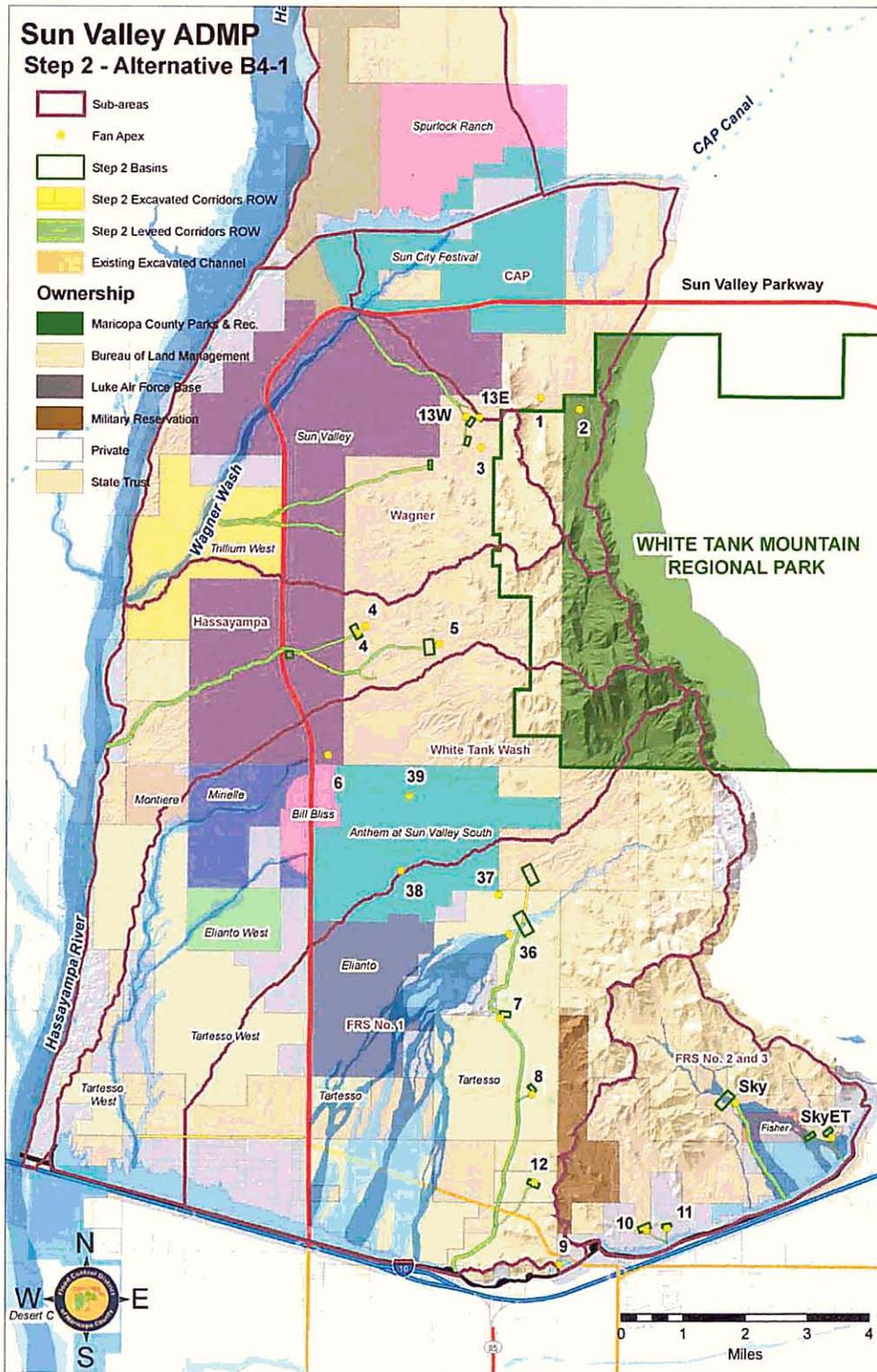


Figure 5.4



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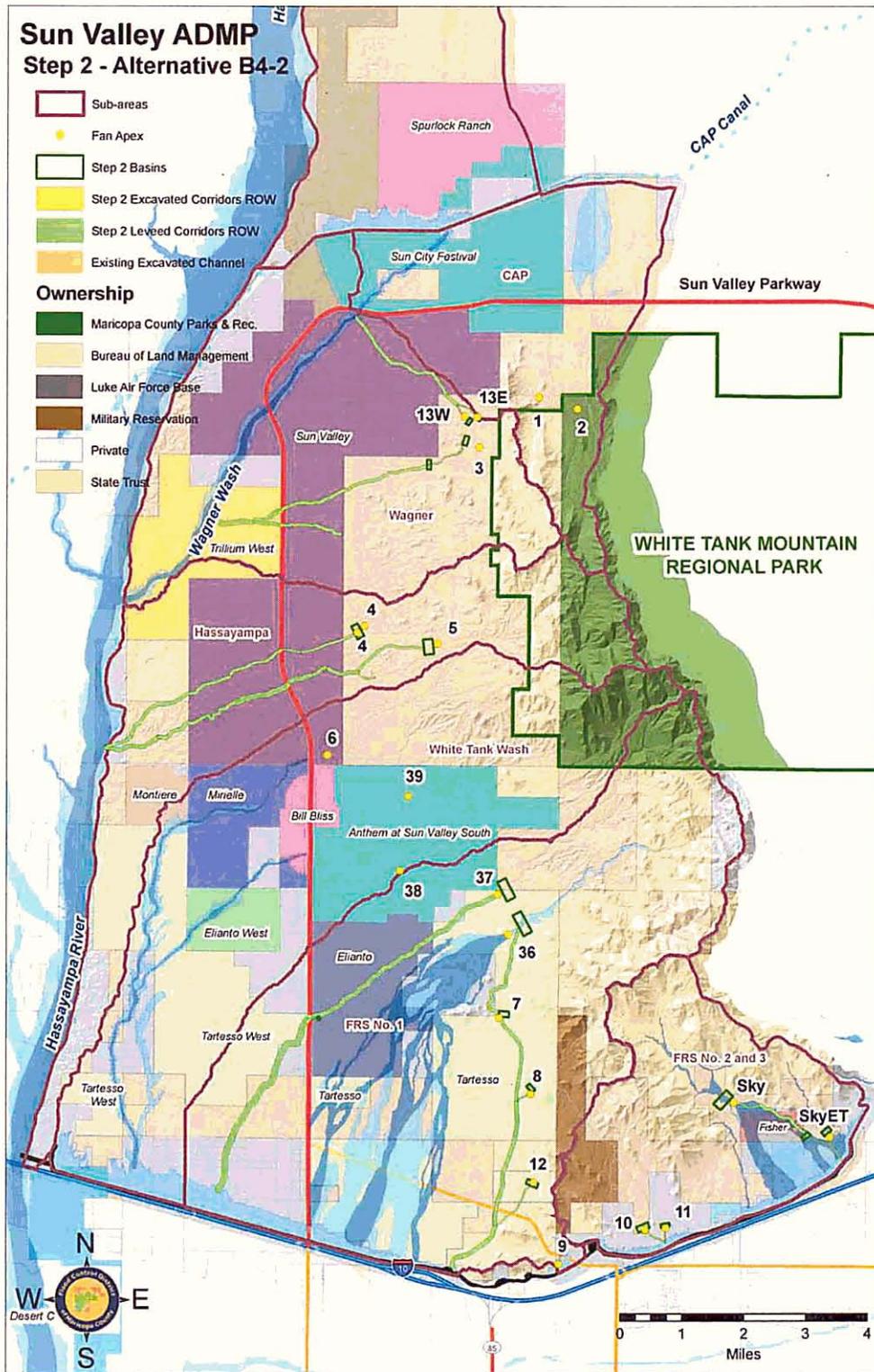


Figure 5.5



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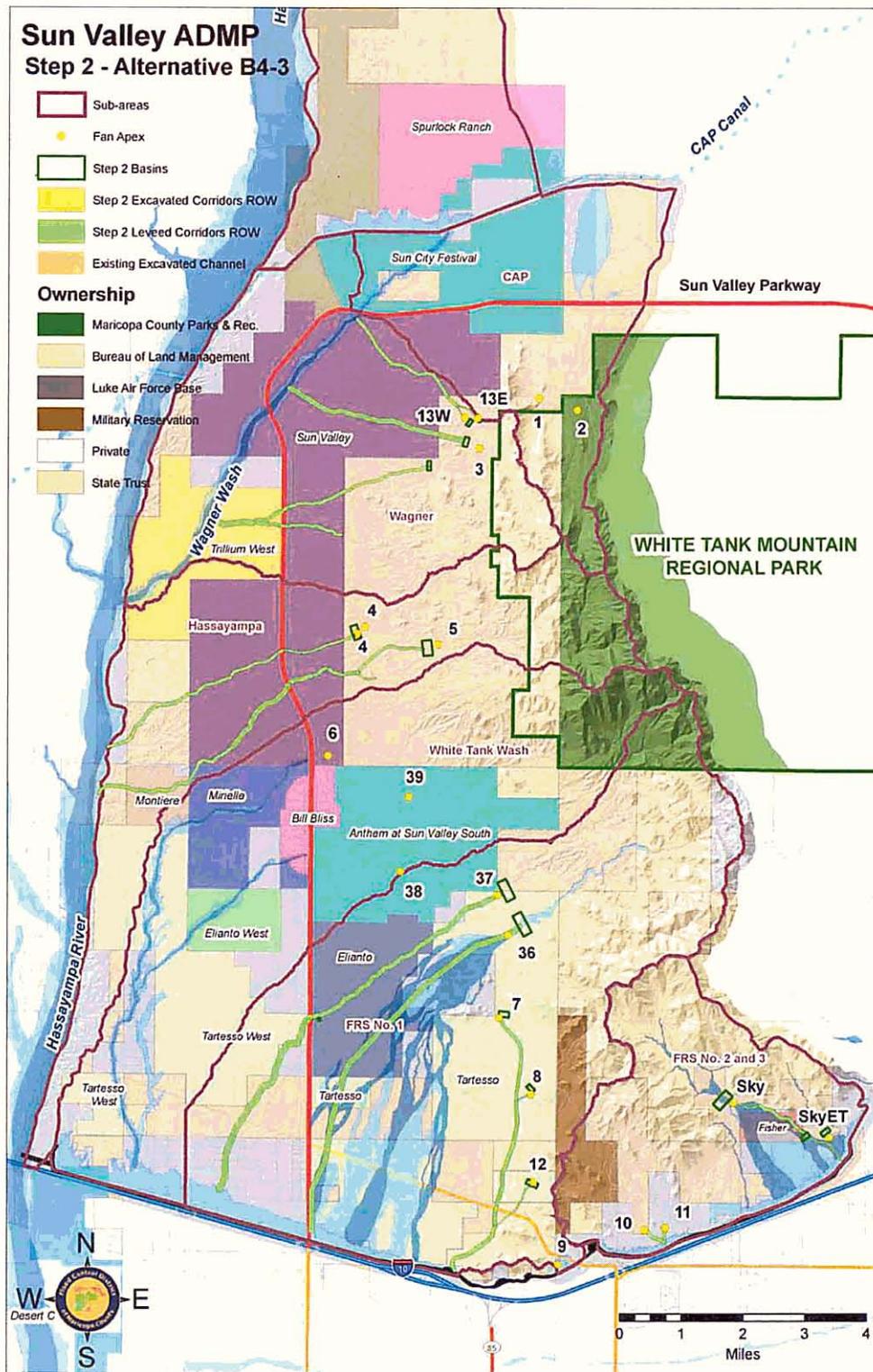


Figure 5.6



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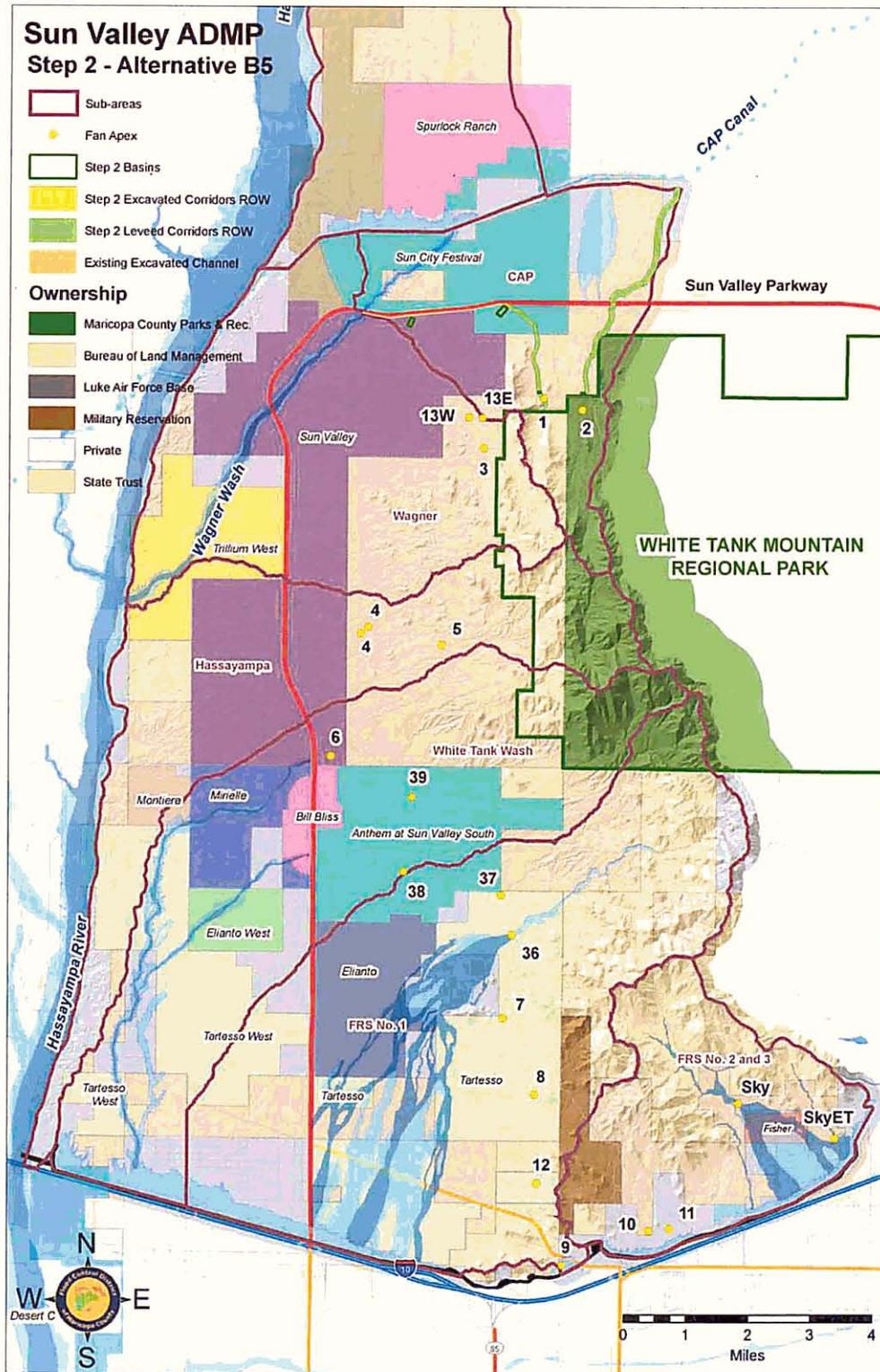


Figure 5.7



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The approach to drainage control of developing the large corridors to accommodate flood flows could increase disturbance of habitat in existing washes during flood events because flow concentration in the corridors. The design parameters should keep depths and velocity of the flows low enough to minimize damage but the disturbance would still be more than what would occur naturally. In desert washes some disturbance would still be required as part of ecosystem function but potential of large disturbance could cause long-term detrimental effects. In most washes the habitat should have time recover between flood events but the higher level of disturbance may not allow the habitat to stabilize enough to maintain high quality.

### 5.3.2 *Landscape Character/Aesthetic Treatment*

*The higher level of disturbance in the B Alternatives would also have a greater impact on the character of surrounding area. The landscape design and aesthetic treatment of the flood control facilities would mimic the landforms of the adjacent landscape and the planting and revegetation would need to be more extensive to compensate for the increased loss of native vegetation.*

The use of levees to control flows in the corridors would have a larger disturbance area than the approach of using walls. The larger disturbance area could be more visible in the landscape until vegetation reestablishes in the density similar to undisturbed areas. However, with future development planned to occur throughout the Sun Valley ADMP area, the landscape character adjacent to the corridors would change to suburban and mixed use development and natural vegetation areas would be limited. The use of low walls to control flows within the corridors would have a much smaller disturbance area than using levees but would introduce a hard structural element in what is otherwise a soft structural alternative. Texture and color could be used to reduce visual intrusion of the walls into landscape. The walls would also provide the opportunity to create a consistent design theme throughout the future development and tie the communities together with an overall architectural and landscape theme with the District's facilities. The wall could also be use to incorporate the character and design of the adjacent developments and coordinate directly with the aesthetics of each community.

The leveed corridor would be a soft structural flood control method and would be compatible with landscape character as determined in the compatibility analysis. The levees



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would need considerable revegetation and landscape development to reduce visibility of the large disturbance areas, but the end result would be a natural appearing flood control design. The use of a walled corridor would result in a landscape character that is still mostly soft structural but the use of walls introduces a structural element. The use of color and texture would create a hard structural with aesthetic treatment component for that element. The scale of the walls would be moderate in most areas as compared to the width of the corridors and the substantial reduction in disturbance area by using walls could be positive for compatibility with respect to future development.

The scale of the basins required for flood control could have a significant impact on the existing and future landscape character. The basins located in the upfan areas could be visible from long distances and would need special attention from a landscape design standpoint to reduce visibility and be compatible with the surrounding landscape. Key among the design considerations would be providing enough area to vary the slopes of the basin and incorporate berming and landform development in the areas adjacent to the basins. Examples of mitigation measures or design guidelines that could be used to achieve context sensitivity are listed below and more detailed guidelines based on the final alternatives will be developed.

### Sample Design Guidelines

- Orient basins to the best fit with local topography and to minimize heights of required slopes
- Limit height of back slopes to be in scale with adjacent development.
- Terrace and or undulate the bottoms of basins including development of islands to blend with local topography.
- Configure basins to be freeform.
- Use native Sonoran Desert landscape materials including plants, rocks and desert varnish to mimic the surrounding landscape.

### 5.3.3 *Multi-use Opportunities*

The multiple corridors available for development of the B Alternatives present good opportunities for multiple use and recreation. An extensive system of trails could be developed to connect the mountains to the river even if some corridors are set aside for use primarily as wildlife movement corridors. The B Alternatives would also be compatible with the County regional trail system while providing the opportunity to support a trail system that would connect the planned communities at the neighborhood level.



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The basins associated with the B Alternatives, provide opportunities for development of recreation facilities at a local or regional level. They could be used for trailheads and passive recreation in the upper Bajada areas, though the Town of Buckeye does not indicate the need for large-scale parks in the upper slope areas. The basins near Sun Valley Parkway would be in good locations for potential development as active park facilities such as softball all and soccer fields in the higher intensity development areas.

The basins at the apex of the fans, coupled with multiple alternative corridor alignments in a strong network of trails contained within this group of alternatives presents a good opportunity to support Buckeye's Open Space plan and develop connectivity to the proposed areas for regional parks.

### 5.4 Alternative B3 (Companion Channel)

Alternative B3 (Figure 5.8) would capture the upstream flow at the apex using on-line detention basins. This alternative is based on using a relatively larger on-line detention basin at the apex accompanied by smaller excavated channel sections in the down fan direction. The excavated channel sections would be designed to carry the 100-year flood flows. The corridors for the excavated earthen channels would be established along existing washes. The excavated channel would be located on one side of the wash and the wash is preserved in a 120-foot wide riparian preservation corridor adjacent to the excavated channel. The use of the detention basins at the apex of the fans eliminates the downstream alluvial fan uncertainties by controlling the flow of water and sediment. The system would be designed to maintain a minimum level of flow to the existing wash to sustain the desert riparian vegetation.

#### 5.4.1 Environmental Considerations

Alternative B3 would preserve desert wash habitat but there would be major disturbance adjacent to the wash because of the excavated channel. There would be less disturbance of the wash habitat from future flood events, since the flows from major flood events would be contained within the excavated channel and would not flow through the existing washes. While some water flow would be maintained in the existing wash to maintain the habitat, the washes also would not be subject to the periodic disturbance that the wash ecosystem needs to be sustainable over the long term.

This alternative would generally have about the same number and overall length of corridors that could function for wildlife movement. However, the earthen excavated channel



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would have minimal value to wildlife for habitat and movement and so the effective corridor for wildlife use is limited to the 120' corridor for the existing wash.

### 5.4.2 *Landscape Character/Aesthetic Treatment*

This alternative would be considered a *semi-hard structural/soft structural alternative*. The primary flood protection method is the excavated channel which is a semi-hard feature because of its hardened earthen sides and excavated earthen bottom. The preserved wash adjacent to the channel can be considered a soft structural, possibly even a non-structural component. It would be compatible with the landscape Variety Class B in the lower elevation Valley Plains areas and compatible with the visual sensitivity for most of the Sun Valley ADMP area. It would not be compatible with the existing or future landscape character, or landscape integrity of the planning area except in limited locations. Since the area is mostly undeveloped, it would not offer the opportunity to improve the landscape character by enhancing existing facilities. Overall it would be incompatible with the scenic resources of the Sun Valley ADMP area because the excavated channel would be a visual intrusion on the existing and future landscape character.

The opportunities for aesthetic enhancement of Alternative C would be somewhat architectural in nature because of the regularity of the excavated channel. Inlets, outlets and drop structures could incorporate colors and textures to reduce visual impacts and provide interest to the features. This alternative would have the advantage of easily blending with adjacent development from a topography standpoint, because it would not require levees or walls to contain the flood flows. The corridors would be visually accessible to the residents and the landscape buffers would provide easy opportunities for residents to access trails in the corridors.

### 5.4.3 *Multi-use Opportunities*

Alternative B3 has good multi-use opportunities because of the extensive corridor network but multi-use facilities would be restricted to buffer areas only because of the excavated channel. The excavated channel could make wash crossings of trails difficult and crossings may be limited to areas such as streets or other crossings required by development. The numbers of miles of corridors is similar to the other B Alternatives and presents a good opportunity to use the flood control corridors to support the Town's Open Space Plan.





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The potential use of the detention basins at the apex of the alluvial fans is similar to Alternative B1/B2. The basins would be of similar scale and in approximately the same locations. There would be good open space opportunities, though Buckeye's Open Space Plan does not identify potential park locations in the upper fan areas. Adjacent developments could make use of the basins to compliment the open system developed for the community and could be an additional amenity for use by area residents.

### 5.6 Alternative C

In this alternative, the concept incorporates the use of an excavated concrete-lined channel from the apex of the fan to the outfall, without providing a detention basin at the apex. Sedimentation basins would be provided throughout the system to address sedimentation associated with the alluvial fan systems. Alternative C (Figure 5.9) is similar to Alternative B3 with the preservation of a 120-foot wide riparian corridor adjacent to the excavated concrete channel. The excavated channels would be placed in proximity to an existing wash and the design would assure that a certain amount of base flow is maintained for the wash to retain its riparian habitat.

#### 5.6.1 Environmental Considerations

Alternative C would have major disturbance adjacent to existing riparian corridors, however this alternative has the smallest overall disturbance area for flood control facilities because there would be no detention basins developed along the corridors. However the lack of basins would not necessarily mean there would be less overall disturbance to wildlife habitat. The areas at the apex of the alluvial fans that would be used for basins in other alternatives would become area available for development by the adjacent master planned communities. The development of detention basins could provide long term value for wildlife habitat as the areas would remain open and eventually would reestablish some level of native vegetation. The apex areas developed with residential or other land uses would have no value as habitat for wildlife and would likely become deterrents for wildlife use of the habitat in the drainage corridors.

The concrete channel has no value for potential habitat or wildlife movement corridor and could become a barrier to lateral movement of wildlife in the corridors. Similar to Alternative B3, there would a reduced potential for disturbance to existing wash habitat during flood event as compared to leveed corridor alternatives because it does not increase flows in washes. The existing washes would continue to provide a small amount of habitat.



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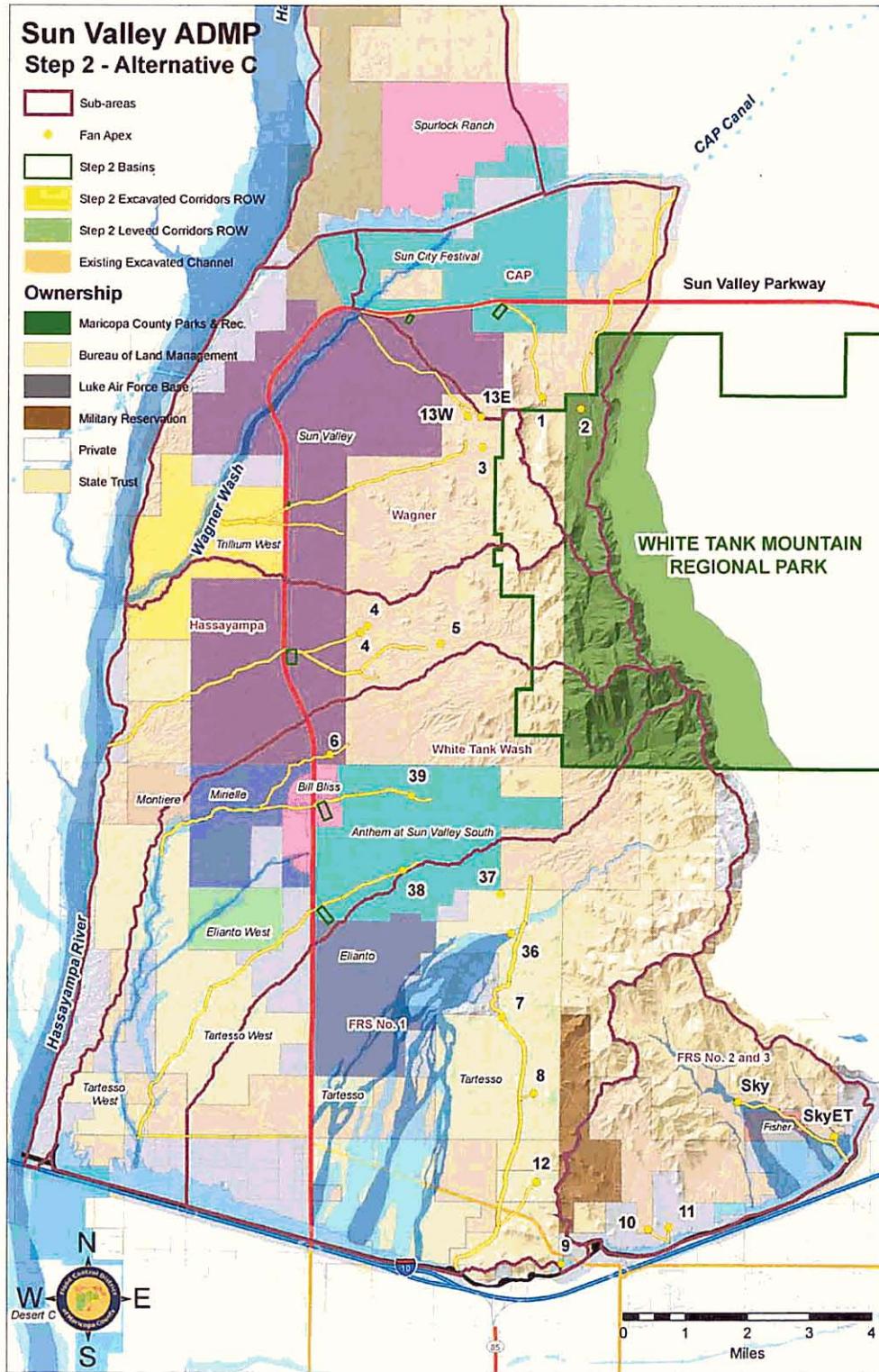


Figure 5.9



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but wildlife would not likely continue to use the corridors because of the limited amount and value of the habitat, coupled with the extensive development of the areas adjacent to the corridors

### 5.6.2 *Landscape Character/Aesthetic Treatment*

This alternative would lack the aesthetic appeal of other alternatives because of the large concrete channel in the wash corridors. There would be some opportunities for incorporation of art and architectural features in channel and the character of aesthetic features could be coordinated with adjacent developments. Similar to the B and C Alternatives, Alternative C would have a structural with aesthetic treatment method of flood control. However, it has a much stronger emphasis on the structural components and it would be more difficult to make the alternative compatible with the existing and future landscape character of the Sun Valley ADMP area. This alternative would result in flood control features that would not be sensitive to the context of the mountains to the river connections of the existing wash corridors.

### 5.6.3 *Multi-use Opportunities*

The multiple corridors available for potential trail and open space development consistent with Buckeye Open Space Plan but improvements would have to be fully within adjacent buffers because of constructed channel. The concrete channel could diminish the passive recreation experience in the Bajada character unit because of the strong architectural nature of the improvements. However, the architectural nature of channel could be valuable as open space for high intensity, specialized uses such as skate parks and amphitheaters in the suburban/urban areas of the future development.

## 5.7 **Alternative D**

In Alternative D the District would not develop flood control facilities. This alternative relies on existing drainage facilities or property owners and new master-planned communities to develop their own drainage infrastructure. A preliminary map of planned facilities by the master planned communities is shown in Figure 5.10. As development continues these components would likely change for the final design. Current drainage ordinances and floodplain regulations would be enforced to ensure adequate flood hazard mitigation measures. Enforcement options would be enhanced by developing new alluvial fan floodplain delineations. This alternative would not result in



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whole fan solutions but rather a piecemeal approach to flood control as facilities to reduce flood hazards would only be built as new development takes place. Several of the developments that are currently under way are in the down-fan area west or north of Sun Valley Parkway. Flood control



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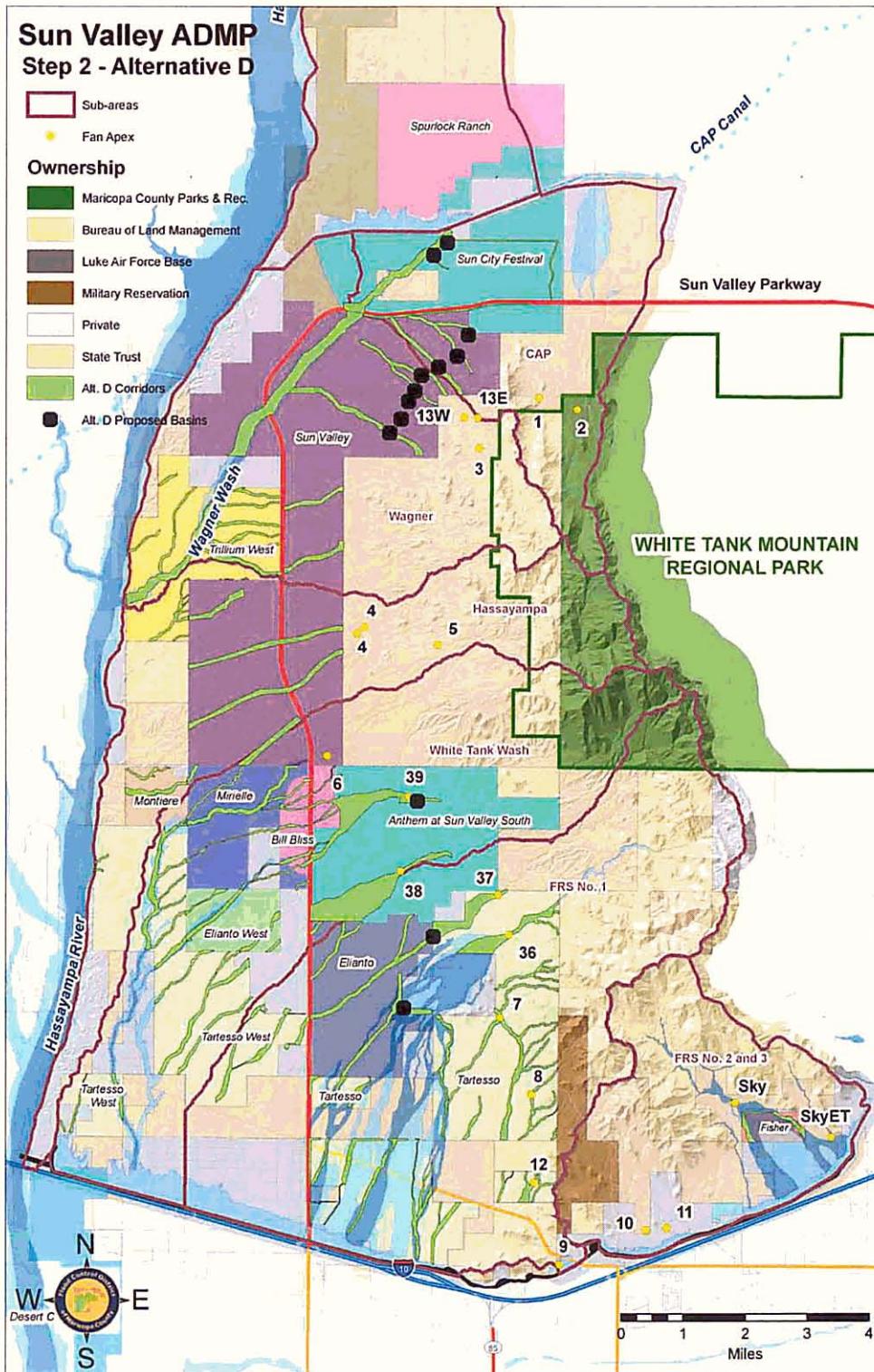


Figure 5.10



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solutions for these developments prior to upstream control of drainage could result in large, more complex designs than would be necessary under development of a full fan drainage solution.

### *5.7.1 Environmental Considerations*

The master planned communities in the Sun Valley ADMP area would need to develop a system of drainage facilities to control storm flows entering and leaving their communities. The use of basins or corridors for these facilities could provide opportunities for retaining or establishing areas for use by wildlife. However, unless all the communities coordinate closely on the size location and landscape development of the flood control elements the open space could be too fragmented and of inappropriate scale to be of value for use by wildlife. The reliance on individual property owners and developers for development of the flood control system would not likely result in substantial, continuous corridors from the White Tank Mountains to the Hassayampa River that could be use by wildlife.

### *5.7.2 Landscape Character/Aesthetic Treatment*

The individual drainage systems for the master planned communities would be developed to be consistent with the design aesthetics of each community and may not necessarily be compatible with the landscape character of the Sun Valley ADMP area. The design themes of the drainage components could vary greatly as each community seeks to establish its unique identity in the use of color, materials, landscaping, and design character. Each drainage system could also incorporate different flood control methods. Some communities may rely more heavily on structural approaches to maximize development area while others may emphasize soft structural approaches to create open space that is more consistent with the landscape character of the surrounding area. While individually each set of drainage components may be well designed there would not be a consistent design theme or approach to flood control methods in the overall planning area.

### *5.7.3 Multi-use Opportunities*

The same challenges with the aesthetics of the individual drainage systems would also be challenges for the potential multi-use opportunities of the flood control components. The individual drainage systems could result in fragmented corridors that would serve as local community open space and trails but would not be suitable for a trail network that would provide connectivity over the larger Sun Valley ADMP area. Basins and other features



## SUN VALLEY AREA DRAINAGE MASTER PLAN

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could also be developed in locations that would not be useful for open space to support Buckeye's plans for open space in the planning area.



# SUN VALLEY AREA DRAINAGE MASTER PLAN

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## Appendix A References



## SUN VALLEY AREA DRAINAGE MASTER PLAN

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## Appendix B

### Glossary



## SUN VALLEY AREA DRAINAGE MASTER PLAN

The first section of the following list of definitions is taken from the Maricopa County Landscape Character Assessment, 2005 because they have been tailored specifically to the landscape assessment process developed for the District. The second section consists of definitions of terms used throughout this document that originated in the Forest Service's Visual Management System.

**Landscape character.** Biological, physical and cultural factors interact to determine landscape character. Landscape character is an overall visual and cultural impression of landscape attributes – the physical appearance and cultural context of a landscape that gives it an identity and “sense of place.” Landscape character can be described in terms of visual dominance elements: line, form, color and texture, and landscape composition types<sup>1</sup>. Landscape character can be mapped at different scales.

**Landscape character type.** A landscape character type, also known as a landscape province, is a regional area of land that has similar distinguishing visual characteristics of landform, rock formations, water forms, vegetative communities and patterns of these landscape elements. An example of a character type is the “Sonoran Desert” of Arizona, extending from northwestern Sonora (Mexico) to southeastern California and southwestern Arizona (USA). The Tonto Character Type encompasses the mountainous area between the Mogollon Escarpment and Gila River. Maricopa County is located within two landscape character types.

**Landscape character subtype.** In some cases, a landscape character type is too broad or great in diversity of character to provide a logical frame of reference to classify physical features or cultural contexts. For such situations, each landscape character type may be further divided into smaller landscape character subtypes. Subtypes are significantly different in visual characteristics from each other. An example of a character subtype is found in Maricopa County, where the Tonto Character Type has been subdivided into two subtypes: the “Upper Tonto” and “Sonoran Arizona Uplands.” The Uplands are an area of rolling hills and low barren mountains within the Tonto Character Type. Elevations in this subtype range from 1500 to 3000 feet, with some peaks reaching over 5000 feet. Also within the Tonto Character Type, the Upper Tonto Subtype is an area of deeply dissected mountains including the Superstition, Pinal, Juniper, Bradshaw, Black Hills, Mazatzal, and Sierra Ancha mountain ranges.

**Landscape character unit.** Compared to a character type or subtype that classifies physiography and vegetation at a macro-scale, a landscape unit classifies attributes of landform, rockform, water form and vegetation at a finer scale. A landscape unit is an area of land that has similar distinguishing characteristics of physical and biological factors that combine to create its scenic expression or its unique meaning of “place.” Examples are a mountain-land, desert-plain, river wash, or canyon-land landscape unit.

**Existing landscape character.** Existing landscape character is the current visual impression of landscape attributes, the physical appearance of a landscape that gives it a unique identity and “sense of place.” Existing landscape character in Maricopa County ranges from a natural landscape to one that is urban – from a pristine wilderness to a built environment. It is based on a unique combination of landform, rockform, vegetation, waterform and cultural elements. Existing landscape character may be identical in a number of widely scattered landscape units if those areas have similar physical characteristics and visual attributes of form, line, color and texture.





## SUN VALLEY AREA DRAINAGE MASTER PLAN

**Aesthetics.** Generally, the study, science, or philosophy dealing with beauty and with judgments concerning beauty. In scenery management, it describes landscape that give visual and sensory pleasure.

**Characteristic.** Qualities that constitute a character, that characterize a landscape; a distinguishing trait, feature, or quality; uniqueness; attribute

**Contrasts.** Diversity or distinction of adjacent parts. Effect of striking differences in form, line, color, or texture of a landscape.

**Cultural Element.** Attributes in a human-altered landscape; scenically positive cultural elements, most of which have historical backgrounds or nostalgic connotations. Examples include split-rail fences, stone walls, barns, orchards, hedgerows, and cabins.

**Cultural Landscape Character Setting.** A landscape setting defined by the presence of human – made features or developments. Cultural settings can be prehistoric, historic or contemporary and can positive or negative influences on the overall landscape character of an area.

**Desired Landscape Character.** Appearance of the landscape to be retained or created over time, recognizing that a landscape is a dynamic and constantly change in community of plants and animals. Combination of landscape design attributes and opportunities, as well as biological opportunities and constraints.

**Distinctive.** Refers to extraordinary and special landscapes. These landscapes are attractive, and they stand out from common landscapes.

**Disturbance.** A discrete event, either natural or human induced, that causes a change in the existing condition of an ecological system.

**Form.** Structure, mass, or shape of a landscape or of an object. Landscape form is often defined by edges or outline of landforms, rock forms, vegetation patterns, or waveforms, or the enclosed spaces created by these attributes rather than the materials themselves.

**Landform.** One of the attributes or features that make up the Earth's surface, such as a plain, mountain, or valley.

**Landscape.** An area composed of interacting ecosystems that are repeated because of geology, landform, soils, climate, biota, and human influences throughout the area. Landscapes are generally of a size, shape, and pattern, which are determined by interacting ecosystems.

**Landscape Character.** Particular attributes, qualities, and traits of a landscape that give it an image and make it identifiable or unique.





## SUN VALLEY AREA DRAINAGE MASTER PLAN

**Landscape Character Physical Division.** A landscape character area defined by the landforms, drainage patterns, geologic formations or other physical attributes that make it a unique area.

**Landscape Design Theme.** A unifying design element that defines the distinctive characteristics of the local landscape setting.

**Landscape Design Guidelines.** Written descriptions or graphics of the techniques and approaches to be used in developing landscape design plans to apply the landscape design themes to specific projects

**Line.** An intersection of two planes; a point that has been extended; a silhouette of form. In landscapes—ridges, skylines, structures, changes in vegetation, or individual trees and branches—may be perceived as line.

**Pastoral Landscape Character.** Landscape Character that has resulted from human activities, containing positive cultural elements such as historic conversion of native forests into farmlands, pastures, and hedgerows, plus some remnants of native forests.

**Scenic Integrity.** The state of naturalness or, conversely the state of disturbance created by human activities or alterations. Integrity is stated in degrees of deviation from the existing landscape character

**Sensitivity Level.** A particular degree of viewer interest in the scenic qualities of the landscape

**Texture.** Visual interplay of light and shadow created by variations in the surface of an object. Grain or nap of a landscape or a repetitive pattern of tiny forms. Visual texture can range from smooth to course.

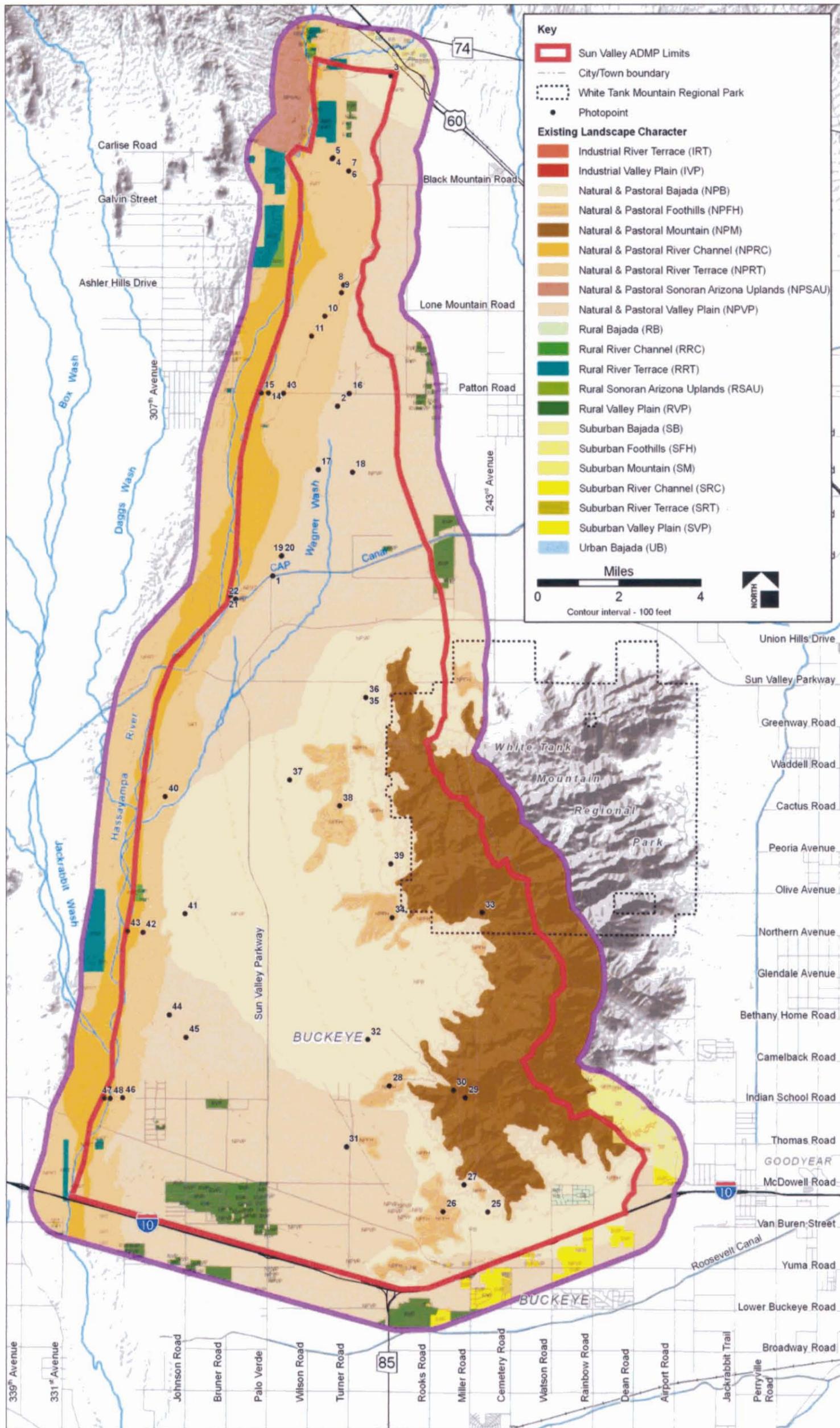
**Variety Class.** A particular level of visual variety or diversity of landscape character.





## Appendix C

### Visual Quality Assessment and Photographs



Appendix C—Photo Point Location Map

## Visual Quality Assessment

Field Date: July/Aug 2005  
 Prepared By: MEM/DSC/GPM

Landscape Character Unit: Natural/Pastoral Mountains

Scenic Quality Ratings			
Photo point	Variety	Integrity	Comments
29	B	H	
33	A	H	
36	A	H	
Overall Unit Rating	A	H	

### Rating Scales

### Representative photograph

#### Variety

A–Outstanding positive variety. Areas where features of landform, vegetation, and/or water form are of unusual or outstanding visual quality. Usually not common in the character type.

B–Common Variety. Areas where features contain variety in form, line, color, and texture or contain combinations thereof but which tend to be common throughout the character type and are not outstanding in visual quality.

C–Minimal Variety. Areas where features have little change in form, line color, and texture. Includes all areas not designated as Class A or B.

#### Integrity

High–Landscape generally appears unaltered and deviations repeat the form, line, color, and texture of the characteristic landscape

Moderate–Appears slightly altered but deviations are visually subordinate to the landscape character

Low–Landscape can be heavily altered and deviations may dominate the landscape. Changes to the landscape do not borrow from the form, line, color, and texture of the surrounding landscape.

Photo point: 36 View: E Date: 08/18/05



**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: **Natural Pastoral Mountains**



Photo GPS point: 29 View Direction: NW Date 08/09/05



Photo GPS point: 29 View Direction: E Date 08/09/05



Photo GPS point: 29 View Direction: SE Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Mountains



Photo GPS point: 33 View Direction: NW Date 08/09/05



Photo GPS point: 33 View Direction: E Date 08/09/05



Photo GPS point: 33 View Direction: S Date 08/09/05



Photo GPS point: 33 View Direction: W Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Foothills



Photo GPS point: 36 View Direction: N Date 08/18/05



Photo GPS point: 36 View Direction: E Date 08/18/05



Photo GPS point: 36 View Direction: N Date 08/18/05



Photo GPS point: 36 View Direction: N Date 08/18/05

**Visual Quality Assessment**

Field Date: July/Aug 2005  
 Prepared By: MEM/DSC/GPM

Landscape Character Unit: Natural/Pastoral Bajada

Scenic Quality Ratings			
Photo point	Variety	Integrity	Comments
25	B	H	
32	A	H	
35	A	H	
37	B	H	
39	A	H	
41	B	H	
Overall Unit Rating	A	H	

**Rating Scales**

**Representative photograph**

**Variety**

A–Outstanding positive variety. Areas where features of landform, vegetation, and/or water form are of unusual or outstanding visual quality. Usually not common in the character type.

B–Common Variety. Areas where features contain variety in form, line, color, and texture or contain combinations thereof but which tend to be common throughout the character type and are not outstanding in visual quality.

C–Minimal Variety. Areas where features have little change in form, line color, and texture. Includes all areas not designated as Class A or B.

**Integrity**

High–Landscape generally appears unaltered and deviations repeat the form, line, color, and texture of the characteristic landscape

Moderate–Appears slightly altered but deviations are visually subordinate to the landscape character

Low–Landscape can be heavily altered and deviations may dominate the landscape. Changes to the landscape do not borrow from the form, line, color, and texture of the surrounding landscape.

Photo point: 35 View: W Date: 08/18/05



**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Bajadas



Photo GPS point: 3 View Direction: N Date 07/25/05



Photo GPS point: 3 View Direction: E Date 07/25/05



Photo GPS point: 3 View Direction: S Date 07/25/05



Photo GPS point: 3 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

**Landscape Character Unit: Natural Pastoral Bajadas**



Photo GPS point: 25 View Direction: N Date 08/09/05



Photo GPS point: 25 View Direction: E Date 08/09/05



Photo GPS point: 25 View Direction: S Date 08/09/05



Photo GPS point: 25 View Direction: W Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: **Natural Pastoral Bajadas**



Photo GPS point: 25 View Direction: NW Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Bajadas



Photo GPS point: 32 View Direction: N Date 08/09/05



Photo GPS point: 32 View Direction: E Date 08/18/05



Photo GPS point: 32 View Direction: S Date 08/18/05



Photo GPS point: 32 View Direction: W Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: **Natural Pastoral Bajadas**



Photo GPS point: 35 View Direction: N Date 08/18/05



Photo GPS point: 35 View Direction: E Date 08/18/05



Photo GPS point: 35 View Direction: S Date 08/18/05



Photo GPS point: 35 View Direction: W Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Bajadas



Photo GPS point: 37 View Direction: N Date 08/18/05



Photo GPS point: 37 View Direction: E Date 08/09/05



Photo GPS point: 37 View Direction: S Date 08/09/05



Photo GPS point: 37 View Direction: W Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Bajadas



Photo GPS point: 39 View Direction: NW Date 08/18/05

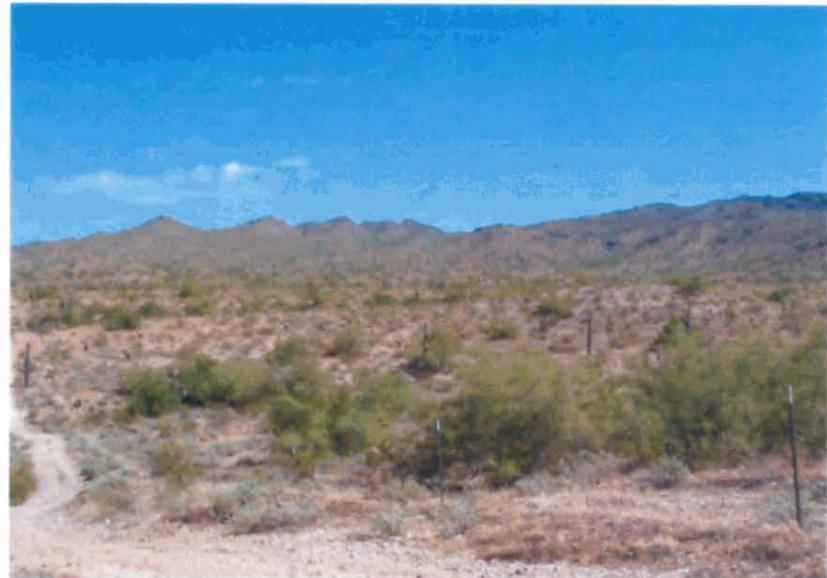


Photo GPS point: 39 View Direction: NE Date 08/18/05



Photo GPS point: 39 View Direction: SW Date 08/18/05



Photo GPS point: 39 View Direction: S Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Bajadas



Photo GPS point: 39 View Direction: E Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Bajadas



Photo GPS point: 41 View Direction: N Date 08/18/05

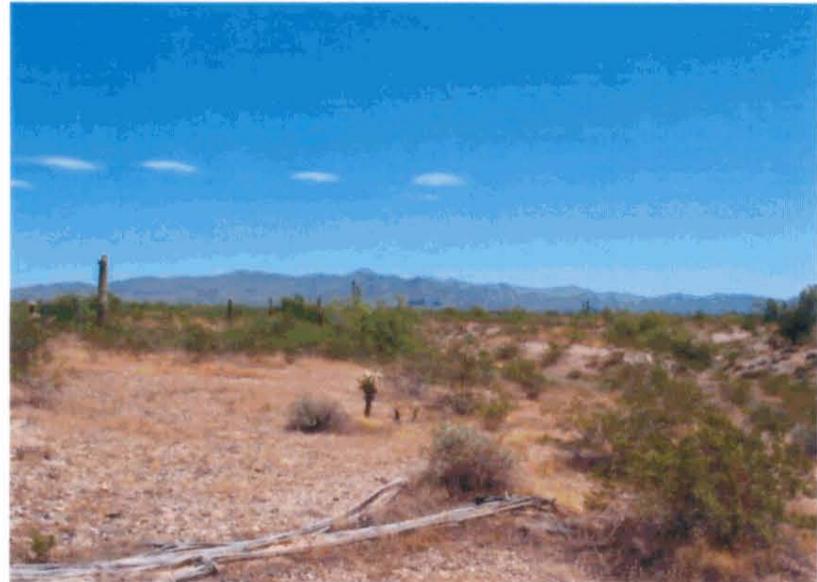


Photo GPS point: 41 View Direction: E Date 08/18/05



Photo GPS point: 41 View Direction: S Date 08/18/05



Photo GPS point: 41 View Direction: W Date 08/18/05

## Visual Quality Assessment

Field Date: July/Aug 2005  
 Prepared By: MEM/DSC/GPM

Landscape Character Unit: Natural/Pastoral Foothills

Scenic Quality Ratings			
Photo point	Variety	Integrity	Comments
26	B	M	
28	B	M	
34	A	H	
38	A/B	H	
Overall Unit Rating	B	H	

### Rating Scales

#### Variety

A–Outstanding positive variety. Areas where features of landform, vegetation, and/or water form are of unusual or outstanding visual quality. Usually not common in the character type.

B–Common Variety. Areas where features contain variety in form, line, color, and texture or contain combinations thereof but which tend to be common throughout the character type and are not outstanding in visual quality.

C–Minimal Variety. Areas where features have little change in form, line color, and texture. Includes all areas not designated as Class A or B.

#### Integrity

High–Landscape generally appears unaltered and deviations repeat the form, line, color, and texture of the characteristic landscape

Moderate–Appears slightly altered but deviations are visually subordinate to the landscape character

Low–Landscape can be heavily altered and deviations may dominate the landscape. Changes to the landscape do not borrow from the form, line, color, and texture of the surrounding landscape.

### Representative photograph

Photo point: 26 View: E Date: 08/09/05



**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Foothills



Photo GPS point: 26 View Direction: N Date 08/09/05



Photo GPS point: 26 View Direction: E Date 08/09/05



Photo GPS point: 26 View Direction: SW Date 08/09/05



Photo GPS point: 26 View Direction: SE Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Foothills



Photo GPS point: 28 View Direction: N Date 08/09/05



Photo GPS point: 28 View Direction: E Date 08/09/05



Photo GPS point: 28 View Direction: S Date 08/09/05



Photo GPS point: 28 View Direction: W Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Foothills



Photo GPS point: 34 View Direction: E Date 08/09/05



Photo GPS point: 34 View Direction: SW Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Foothills



Photo GPS point: 38 View Direction: N Date 08/18/05



Photo GPS point: 38 View Direction: E Date 08/09/05



Photo GPS point: 38 View Direction: S Date 08/09/05



Photo GPS point: 38 View Direction: W Date 08/09/05

## Visual Quality Assessment

Field Date: July/Aug 2005  
 Prepared By: MEM/DSC/GPM

Landscape Character Unit: Natural/Pastoral River Channel

Scenic Quality Ratings			
Photo point	Variety	Integrity	Comments
15	A	H	
21	B	M/L	
43	A/B	H	
47/48	A	M	
Overall Unit Rating	A	M	

### Rating Scales

#### Variety

A–Outstanding positive variety. Areas where features of landform, vegetation, and/or water form are of unusual or outstanding visual quality. Usually not common in the character type.

B–Common Variety. Areas where features contain variety in form, line, color, and texture or contain combinations thereof but which tend to be common throughout the character type and are not outstanding in visual quality.

C–Minimal Variety. Areas where features have little change in form, line color, and texture. Includes all areas not designated as Class A or B.

#### Integrity

High–Landscape generally appears unaltered and deviations repeat the form, line, color, and texture of the characteristic landscape

Moderate–Appears slightly altered but deviations are visually subordinate to the landscape character

Low–Landscape can be heavily altered and deviations may dominate the landscape. Changes to the landscape do not borrow from the form, line, color, and texture of the surrounding landscape.

### Representative photograph

Photo point: 43 View: S Date: 08/18/05



**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Channel



Photo GPS point: 15 View Direction: NE Date 07/25/05



Photo GPS point: 15 View Direction: E Date 07/25/05



Photo GPS point: 15 View Direction: SSW Date 07/25/05



Photo GPS point: 15 View Direction: E Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Channel



Photo GPS point: 21 View Direction: N Date 07/25/05



Photo GPS point: 21 View Direction:      Date 07/25/05



Photo GPS point: 21 View Direction: S Date 07/25/05



Photo GPS point: 21 View Direction:      Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Channel



Photo GPS point: 43 View Direction: N Date 08/18/05



Photo GPS point: 43 View Direction: E Date 08/18/05



Photo GPS point: 43 View Direction: S Date 08/18/05



Photo GPS point: 43 View Direction: W Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Channel



Photo GPS point: 47 View Direction: NNW Date 08/18/05



Photo GPS point: 47 View Direction: NE Date 08/18/05



Photo GPS point: 47 View Direction: SSW Date 08/18/05



Photo GPS point: 47 View Direction: W Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Channel



Photo GPS point: 47 View Direction: ENE Date 08/18/05



Photo GPS point: 47 View Direction: ESE Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Channel



Photo GPS point: 48 View Direction: N Date 08/18/05



Photo GPS point: 48 View Direction: E Date 08/18/05



Photo GPS point: 48 View Direction: S Date 08/18/05



Photo GPS point: 48 View Direction: SW Date 08/18/05

## Visual Quality Assessment

Field Date: July/Aug 2005  
 Prepared By: MEM/DSC/GPM

Landscape Character Unit: Natural/Pastoral River Terrace

Scenic Quality Ratings			
Photo point	Variety	Integrity	Comments
4/5	A	H	
6/7	B	H	
40	B	M	
42	B	H	
46	A	M	
Overall Unit Rating	B	H	

### Rating Scales

### Representative photograph

#### Variety

A–Outstanding positive variety. Areas where features of landform, vegetation, and/or water form are of unusual or outstanding visual quality. Usually not common in the character type.

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C–Minimal Variety. Areas where features have little change in form, line color, and texture. Includes all areas not designated as Class A or B.

#### Integrity

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Moderate–Appears slightly altered but deviations are visually subordinate to the landscape character

Low–Landscape can be heavily altered and deviations may dominate the landscape. Changes to the landscape do not borrow from the form, line, color, and texture of the surrounding landscape.

Photo point: 46 View: N Date: 08/18/05



**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 4 View Direction: N Date 07/25/05



Photo GPS point: 4 View Direction: E Date 07/25/05



Photo GPS point: 4 View Direction: S Date 07/25/05



Photo GPS point: 4 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 5 View Direction: E Date 07/25/05



Photo GPS point: 5 View Direction: W Date 07/25/05



Photo GPS point: 6 View Direction: NW Date 07/25/05

Photo GPS point: 8 View Direction: NE Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 7 View Direction: NE Date 07/25/05



Photo GPS point: 8 View Direction: NE Date 07/25/05



Photo GPS point: 9 View Direction: W Date 07/25/05



Photo GPS point: 9 View Direction: SE Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 10 View Direction: W Date 07/25/05



Photo GPS point: 10 View Direction: SE Date 07/25/05



Photo GPS point: 11 View Direction: E Date 07/25/05

Landscape Character Unit Visual Assessment  
Photo Record

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 12 View Direction: E Date 07/25/05



Photo GPS point: 12 View Direction: NW Date 07/25/05



Photo GPS point: 12 View Direction: SE Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 13 View Direction: E Date 07/25/05



Photo GPS point: 13 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 40 View Direction: N Date 08/18/05



Photo GPS point: 40 View Direction: E Date 08/18/05



Photo GPS point: 40 View Direction: S Date 08/18/05



Photo GPS point: 40 View Direction: W Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Foothills



Photo GPS point: 40 View Direction: SE Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 42 View Direction: N Date 08/18/05



Photo GPS point: 42 View Direction: E Date 08/18/05



Photo GPS point: 42 View Direction: S Date 08/18/05



Photo GPS point: 42 View Direction: W Date 08/18/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral River Terrace



Photo GPS point: 46 View Direction: N Date 08/18/05



Photo GPS point: 46 View Direction: E Date 08/18/05



Photo GPS point: 46 View Direction: S Date 08/18/05



Photo GPS point: 46 View Direction: W Date 08/18/05

## Visual Quality Assessment

Field Date: July/Aug 2005  
 Prepared By: MEM/DSC/GPM

Landscape Character Unit: Natural/Pastoral Valley Plain

Scenic Quality Ratings			
Photo point	Variety	Integrity	Comments
16	B	H	
18	B	H	
31	B	H	
45	A/B	H	
Overall Unit Rating	B	H	

### Rating Scales

### Representative photograph

#### Variety

A–Outstanding positive variety. Areas where features of landform, vegetation, and/or water form are of unusual or outstanding visual quality. Usually not common in the character type.

B–Common Variety. Areas where features contain variety in form, line, color, and texture or contain combinations thereof but which tend to be common throughout the character type and are not outstanding in visual quality.

C–Minimal Variety. Areas where features have little change in form, line color, and texture. Includes all areas not designated as Class A or B.

#### Integrity

High–Landscape generally appears unaltered and deviations repeat the form, line, color, and texture of the characteristic landscape

Moderate–Appears slightly altered but deviations are visually subordinate to the landscape character

Low–Landscape can be heavily altered and deviations may dominate the landscape. Changes to the landscape do not borrow from the form, line, color, and texture of the surrounding landscape.

Photo point: 45 View: E Date: 08/18/05



**Landscape Character Unit Visual Assessment  
Photo Record**

**Landscape Character Unit: Natural Pastoral Valley Plains**



Photo GPS point: 1 View Direction: E Date 07/25/05



Photo GPS point: 1 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Valley Plains



Photo GPS point: 16 View Direction: NE Date 07/25/05



Photo GPS point: 16 View Direction: NE Date 07/25/05



Photo GPS point: 16 View Direction: S Date 07/25/05



Photo GPS point: 16 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Valley Plains



Photo GPS point: 16 View Direction: W Date 07/25/05



Photo GPS point: 17 View Direction: NW Date 07/25/05



Photo GPS point: 17 View Direction: SE Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Valley Plains



Photo GPS point: 18 View Direction: N Date 07/25/05



Photo GPS point: 18 View Direction: E Date 07/25/05



Photo GPS point: 18 View Direction: S Date 07/25/05



Photo GPS point: 18 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Valley Plains



Photo GPS point: 19 View Direction: ENE Date 07/25/05



Photo GPS point: 19 View Direction: NNW Date 07/25/05



Photo GPS point: 19 View Direction: SSE Date 07/25/05



Photo GPS point: 19 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Valley Plains



Photo GPS point: 20 View Direction: N Date 07/25/05



Photo GPS point: 20 View Direction: NW Date 07/25/05



Photo GPS point: 20 View Direction: S Date 07/25/05



Photo GPS point: 20 View Direction: W Date 07/25/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Valley Plains



Photo GPS point: 31 View Direction: N Date 08/09/05



Photo GPS point: 31 View Direction: E Date 08/09/05



Photo GPS point: 31 View Direction: S Date 08/09/05



Photo GPS point: 31 View Direction: W Date 08/09/05

**Landscape Character Unit Visual Assessment  
Photo Record**

Landscape Character Unit: Natural Pastoral Valley Plains



Photo GPS point: 45 View Direction: N Date 08/18/05



Photo GPS point: 45 View Direction: E Date 08/18/05



Photo GPS point: 45 View Direction: S Date 08/18/05



Photo GPS point: 45 View Direction: W Date 08/18/05



## Appendix D

### Preliminary Landscape Theme Plant Lists



## SUN VALLEY AREA DRAINAGE MASTER PLAN

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### Natural Sonoran Desert Plant List

#### Trees:

Cercidium floridum	Blue Palo Verde
Cercidium microphyllum	Foothills Palo Verde
Chilopsis linearis	Desert Willow
Olneya tesota	Ironwood
Prosopis velutina	Velvet Mesquite

#### Shrubs:

Acacia greggii	Catclaw Acacia
Ambrosia ambrosioides	Giant Bursage
Ambrosia deltoidea	Bursage
Anisacanthus thurberi	Desert Honeysuckle
Bebbia juncea	Sweetbush
Calliandra eriophylla	Fairy Duster
Canotia holacantha	Crucifixion Thorn
Celtis pallida	Desert Hackberry
Dodonaea viscosa	Hopbush
Encelia farinosa	Brittlebush
Ephedra trifurca	Mormon Tea
Ericameria laricifolia	Turpentine Bush
Eriogonum fasciculatum	Flattop Buckwheat
Hymenoclea salsola	Burro Brush
Hyptis emoryi	Desert Lavender
Larrea tridentata	Creosote Bush
Lotus rigidus	Deer Vetch
Lycium fremontii	Thornbush
Simmondsia chinensis	Jojoba
Trixis californica	Trixis
Zizyphus obtusifolia	Greythorn



## SUN VALLEY AREA DRAINAGE MASTER PLAN

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### Herbaceous Perennials:

Aristida purpurea	Purple Threeawn
Baileya multiradiata	Desert Marigold
Erigeron divergens	Fleabane Daisy
Melampodium leucanthum	Blackfoot Daisy
Penstemon parryi	Parry's Penstemon
Penstemon pseudospectabilis	Canyon Penstemon
Senna covesii	Desert Senna
Sphaeralcea ambigua	Globemallow
Verbena gooddingii	Goodding's Verbena

### Accents:

Agave chrysantha	Golden-flowered Agave
Agave murpheyi	Hohokam Agave
Asclepias subulata	Desert Milkweed
Carnegiea gigantea	Saguaro
Dasyliirion wheeleri	Desert Spoon
Fouquieria splendens	Ocotillo
Nolina bigelovii	Beargrass
Opuntia acanthocarpa	Buckhorn Cholla
Opuntia bigelovii	Teddybear Cholla
Opuntia engelmannii	Desert Prickly Pear
Yucca baccata	Banana Yucca
Yucca elata	Soaptree Yucca





## SUN VALLEY AREA DRAINAGE MASTER PLAN

### Semi-Natural Sonoran Desert/Dessert Adapted Park Plant List

#### Trees:

Acacia farnesiana	Sweet Acacia
Acacia willardiana	Palo Blanco
Bauhinia lunarioides	Anacacho Orchid Tree
Brahea armata	Mexican Blue Fan Palm
Caesalpinia cacalaco	Cascalote
Cercidium floridum	Blue Palo Verde
Cercidium hybrid	Hybrid Palo Verde
Cercidium microphyllum	Foothills Palo Verde
Cercidium praecox	Palo Brea
Lysiloma thornberi	Desert Fern
Olneya tesota	Ironwood
Phoenix dactylifera	Date Palm
Pithecellobium flexicaule	Texas Ebony
Prosopis chilensis	Chilean Mesquite
Prosopis glandulosa	Honey Mesquite
Prosopis velutina	Velvet Mesquite
Sophora secundiflora	Texas Mountain Laurel
Washingtonia filifera	California Fan Palm
Washingtonia robusta	Mexican Fan Palm

#### Shrubs:

Atriplex canescens	Fourwing Saltbush
Atriplex lentiformis	Quail Bush
Bougainvillea species	Bougainvillea
Buddleia marrubifolia	Woolly Butterfly Bush
Caesalpinia mexicana	Mexican Bird of Paradise
Caesalpinia pulcherrima	Red Bird of Paradise
Calliandra californica	Red Fairy Duster
Calliandra eriophylla	Fairy Duster
Campsis radicans	Trumpet Creeper
Chrysactinia mexicana	Damianita
Convolvulus cneorum	Bush Morning Glory





## SUN VALLEY AREA DRAINAGE MASTER PLAN

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<i>Cordia boissieri</i>	Anacahuita
<i>Cordia parviflora</i>	Littleleaf Cordia
<i>Dalea frutescens</i>	Black Dalea
<i>Dodonaea viscosa</i>	Hopbush
<i>Encelia farinosa</i>	Brittlebush
<i>Ericameria laricifolia</i>	Turpentine Bush
<i>Justicia californica</i>	Chuparosa
<i>Justicia spicigera</i>	Mexican Honeysuckle
<i>Larrea tridentata</i>	Creosote Bush
<i>Leucophyllum candidum</i>	Violet Silverleaf
<i>Leucophyllum frutescens</i>	Texas Ranger
<i>Leucophyllum laevigatum</i>	Chihuahuan Sage
<i>Portulacaria afra</i>	Elephant's Food
<i>Rosmarinus officinalis</i>	Rosemary
<i>Ruellia peninsularis</i>	Ruellia
<i>Simmondsia chinensis</i>	Jojoba
<i>Tagetes palmeri</i>	Mt. Lemmon Marigold
<i>Thevetia peruviana</i>	Yellow Oleander

### **Groundcovers:**

<i>Dalea capitata</i>	
<i>Dalea greggii</i>	Trailing Dalea
<i>Verbena pulchella</i>	Moss Verbena
<i>Wedelia trilobata</i>	Yellow Dot

### **Vines:**

<i>Antigonon leptopus</i>	Queen's Wreath
<i>Cissus trifoliata</i>	Arizona Grape Ivy
<i>Hardenbergia violacea</i>	Lilac Vine
<i>Macfadyena unguis-cati</i>	Cat's Claw Vine
<i>Mascagnia macroptera</i>	Yellow Orchid Vine
<i>Merremia aurea</i>	Yellow Morning Glory Vine





## SUN VALLEY AREA DRAINAGE MASTER PLAN

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### Herbaceous Perennials:

Bahia absinthifolia	Bahia
Baileya multiradiata	Desert Marigold
Dicliptera resupinata	Dicliptera
Erigeron divergens	Fleabane Daisy
Hymenoxys acaulis	Angelita Daisy
Melampodium leucanthum	Blackfoot Daisy
Muhlenbergia capillaris 'Regal Mist'	Regal Mist Muhly
Muhlenbergia rigens	Deer Grass
Penstemon baccharifolius	Rock Penstemon
Penstemon catoni	Firecracker Penstemon
Penstemon parryi	Parry's Penstemon
Penstemon pseudospectabilis	Canyon Penstemon
Psilostrophe cooperi	Paperflower
Sphaeralcea ambigua	Globemallow

### Accents:

Agave species	
Aloe species	Aloe
Asclepias subulata	Desert Milkweed
Carnegiea gigantea	Saguaro
Cereus peruvianus	Night Blooming Cereus
Dasyliirion acrotriche	Green Desert Spoon
Dasyliirion quadrangulatum	Smooth Desert Spoon
Dasyliirion wheeleri	Desert Spoon
Echinocactus grusonii	Golden Barrel
Euphorbia antisiphilitica	Candelilla
Euphorbia biglandulosa	Gopher Plant
Fouquieria splendens	Ocotillo
Hesperaloe funifera	Gianta Hesperaloe
Hesperaloe parviflora	Red Hesperaloe
Nolina microcarpa	Beargrass
Opuntia basilaris	Beavertail Prickly Pear





## SUN VALLEY AREA DRAINAGE MASTER PLAN

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Opuntia engelmannii	Desert Prickly Pear
Opuntia ficus-indica	Indian Fig Prickly Pear
Opuntia santa-rita	Purple Prickly Pear
Pedilanthus macrocarpus	Slipper Plant
Yucca baccata	Banana Yucca
Yucca elata	Soaptree Yucca
Yucca rigida	Blue Yucca





## SUN VALLEY AREA DRAINAGE MASTER PLAN

### Suburban Park-Like Plant List

In addition to the plants for the two other themes, the following are suggestions for additional plants appropriate for use in application of the suburban park like theme. Concentrations of these plants should be focused on areas with the highest recreation and activity use. Sonoran desert plant material should be used as transitions to the surrounding natural desert.

#### Trees:

Fraxinus velutina	Arizona Ash
Dalbergia sissoo	Sissoo
Olea europaea	Olive (fruitless)
Pistacia chinensis	Chinese Pistache
Ulmus parvifolia	Evergreen Elm

#### Shrubs:

Eremophila 'Valentine'	Valentine Eremophila
Luecophyllum species	Sage
Senna species	Cassia
Tecoma 'Orange Jubilee'	Orange Bells
Tecoma stans	Yellow Bells

#### Vines/Ground covers/Perennials:

Lantana species	Lantana
Bougainvillea species	Bougainvillea
Ruellia brittoniana	Ruellia
Gaura lindheimeri	Gaura