

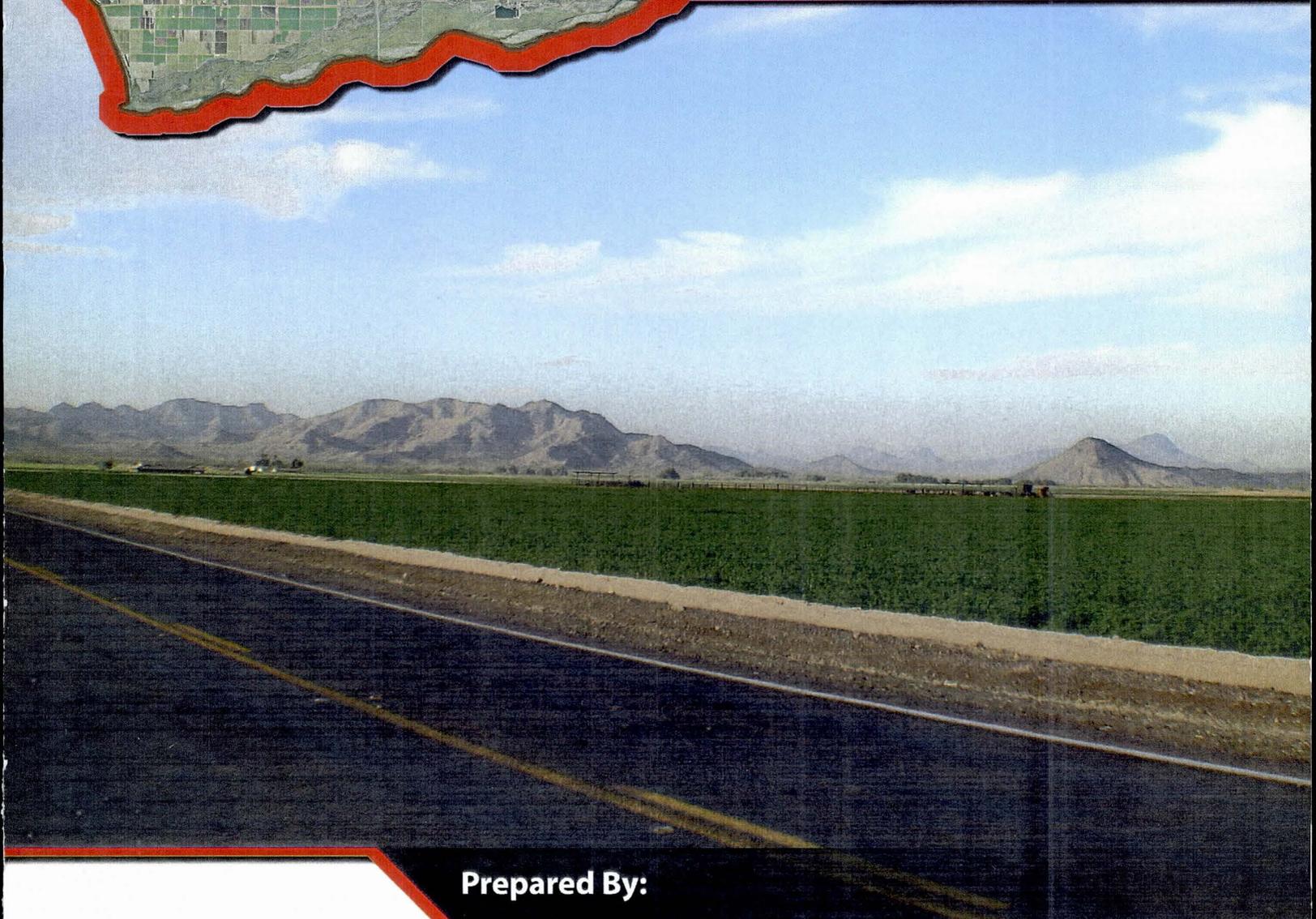


# BUCKEYE AREA DRAINAGE MASTER PLAN

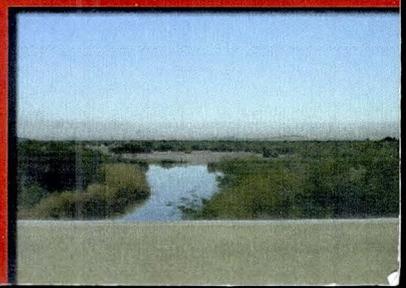
FCD 2004C058

## LANDSCAPE RESOURCES INVENTORY AND ANALYSIS REPORT

**AUGUST 2007**



**Prepared By:**



Buckeye Area Drainage Master Plan  
Contract FCD 2004 C058  
Landscape Resources Inventory & Analysis  
July 2007

# **BUCKEYE ADMP LANDSCAPE RESOURCES INVENTORY & ANALYSIS REPORT**

Prepared for  
Flood Control District of Maricopa County  
2801 W. Durango Street  
Phoenix, Arizona 85009

FCD Contract 2004 C058

Prepared by



Project Manager: Shane Haneman, RLA  
Joy Dunlap, AICP  
Avery Oltmans

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## **CHAPTER 1 – PROJECT OVERVIEW**

### **1.1 Project Background**

In 2006 The Flood Control District of Maricopa County (District) began developing the Buckeye Area Drainage Master Plan (ADMP); which will tier from the information developed in the Buckeye/Sun Valley Area Drainage Master Study Update (ADMS) and further develop flood hazard mitigation strategies for developers, individual property owners, and jurisdictions.

The ADMP will further analyze potential cost-effective solutions for potential flood zones based on flood and erosion hazard zones and drainage problems identified in the ADMS. This process will determine preferred alternatives for flood control systems, and provide an implementation plan for the preferred alternatives to alleviate or manage flooding in the study area.

### **1.2 Purpose**

The purpose of the Landscape Resources Inventory and Analysis (LRIA) study is to provide a tool for understanding the environment of the Buckeye Study Area both built and natural and how best to provide context sensitive integration of flood hazard solutions into the community.

The focus of this report is to characterize scenery, recreation, wildlife and cultural resources within the Buckeye study area and determine the compatibility of various flood protection methods or strategies (structural, non-structural, natural appearing vs. structural, intensively developed or engineered) that could be implemented. The scenic and recreational data collection and analysis of the LRIA include the following objectives:

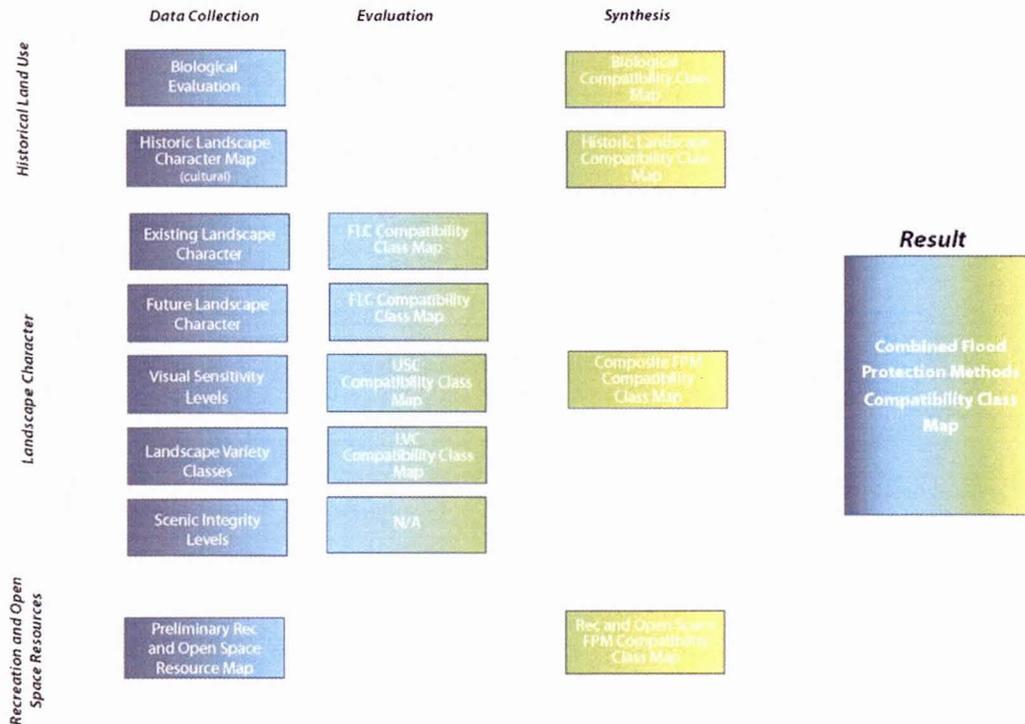
- Fully integrate the District's aesthetic and landscape design principles into the design of flood protection facilities to be constructed within the Buckeye study area
- Preserve and enhance the valued local landscape character, through emphasizing unique natural and cultural features within the study area
- Incorporate recreational opportunities, including passive and active into solutions
- Incorporate Biological objective into solutions
- Incorporate Cultural objective into solutions

### **1.3 Methodology & Process**

The key elements that were used to develop this Landscape Resources Inventory and Analysis Process are found in the District's regional assessment of scenery entitled *Preliminary Existing Landscape Character Assessment for Maricopa County*. Base GIS information from the aforementioned study provided by the District was used along with a GIS database from the Maricopa Association of Governments (MAG) 2004 Land Use. Field reconnaissance and a review of aerial photography taken in 2006 was utilized to verify and refine the land use data. Updates to the data were generated by Olsson Associates under the guidance of the Flood Control District. An update to the Buckeye General plan including future land use and zoning is currently under way and is expected to be finalized and approved by July of 2007. Because the data was not approved at the time that the Landscape Resources Inventory and Analysis Process took place, the team utilized the 2004 MAG land use designations to determine future land use. Guidance also was provided by the District Project Manager for the Buckeye ADMP as well as the District's Landscape Architecture Program Manager.

Once data collection was completed the project team began the process of identifying and delineating the landscape character types, subtypes, and character units found within the study area. This delineation was accomplished using a GIS to integrate hand drawn mapping and electronic files. This data and information was then used to compile the Existing and Planned Scenery Resources, the Recreation and Open Spaces Resources and the Biological and Historical Character of the study area. **Figure 1.3.1** below lists all study area resources inventoried and illustrates how all of the study area resources are combined.

**Figure 1.3.1**



This combination of study area resources is made possible by first classifying the different elements or units that make-up each resource into an appropriate Flood Protection Methods (FPM) Compatibility Classification. Please see Chapter 3 for a further definition of FPM Compatibility Classification. Once each of the study area resources have been assigned a FPM Compatibility Class they are represented as overlapping layers in a Geographic Information System (GIS). Using this database, an overlay analysis was performed weighing each study area resource evenly allowing for areas with the lowest FPM Compatibility Class to be represented initially in the Composite FPM Compatibility Class Map and finally in the Combined FPM Compatibility Class Map. This initial assessment of the scenery resources within the Buckeye study area will form the basis of analysis for the Buckeye ADMP project.

### 1.4 Buckeye Study Area

The Buckeye ADMP study area is generally bounded by Airport Road on the east, I-10 on the north, the Gila River on the south and the Hassayampa River on the west. The total ADMP and watershed area is approximately one hundred three (103) square miles, or 65,618 Acres, which includes the jurisdiction of unincorporated Maricopa County and the Town of Buckeye. Portions of the study area are under federal and state ownership.



I-10 at Miller Road



MC – 85 at Hazen Road



Old US 80 and the Salome Hwy

Several distinguishing physical features can be found within the study area boundary. The Flood Control District maintains three Flood Retarding Structures (FRS) structures that define the north boundary of the study area, Buckeye FRS #1, Buckeye FRS #2 and Buckeye FRS #3. These structures primarily run parallel to the I-10 corridor, another distinguishing physical feature to the study area. I-10 is the primary interstate connecting Phoenix to Los Angeles. A major county road, SR85, bisects the study area from north to south and is currently under construction to be increased in size from a two lane to a four lane divided highway. A less traveled highway, Old US 80, runs along the south boundary north of the Gila River Corridor from SR85 to the west project boundary. A one-mile grid of both paved and dirt roads are evident on the majority of the study area and these often act as delineations of land use or land ownership.



FRS #2



FRS #3

Several regional sized canals traverse the site from east to west and split the area into thirds. The northern most is the Roosevelt Irrigation District (RID) canal located south of I-10. A distinguishing feature of the RID canal is that the tailwaters that outfall into the White Tanks Wash east of Johnson Road and north of Broadway road alignment creates a ponding area with tamarisk trees with dense riparian vegetation within the study area. The Buckeye Canal is located along the south third of the study area and the Arlington Canal runs generally parallel to the Gila River and is located primarily within the river terrace just to the north of the river channel.



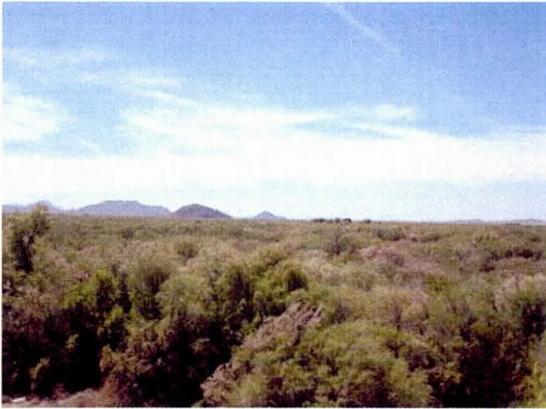
Roosevelt Irrigation Distric Canal at Bruener Road



Buckeye canal at Palo Verde Road

Two rivers, the Gila and Hassayampa, serve as the southern and western boundaries respectively of the study area. They provide perennial and intermittent flows that are rare in the deserts.

These waterways also as provide lush riparian habitats that serves as wildlife corridors for the study area. This area has high concentrations of cultural and natural resources discussed in Chapter 5.



MC 85 Bridge overlooking the Gila River

Luke Air Force Base, located outside the study area to the northeast, required the placement of auxiliary fields throughout the valley. One of those, Luke Auxiliary Field #5, was decommissioned in 1949, and is now utilized by the Town of Buckeye as their Municipal Field. Luke Auxiliary Field #6, located along the east study area boundary, was declared excess in 1957 and was closed sometime between 1966 and 1971.



Buckeye Municipal Airport formerly Luke Auxiliary Field #5

A regional railroad is located just north of the Buckeye Canal and runs east/ west across the study area.

The predominant land use throughout the study area is agricultural. Large fields of alfalfa, cotton, corn, and other crops can be found. Downtown Buckeye, first established in the late 1800's, is located in the southeast portion of the study area. In the year 2000 the Town of Buckeye had a population 6,537; according to the U.S. Census. With recent suburban development primarily in the northeast portion of the study area, the total residential population of Buckeye has increased to an estimated 32,375 according to the 2007 Regional Transportation Plan.

The north side of the Gila River corridor, from Miller Road east to approximately Rainbow Road was burned by fire and is in the first stages of recovery.



Burn area south of Beloit Road east of Dean Road

The majority of the Buckeye study area is now being rapidly developed. Most new development has been concentrated adjacent to I-10 and in eastern Buckeye, but is now expected to move beyond those boundaries changing the landscape character of the entire study area.

## **CHAPTER 2 – SCENERY RESOURCES ASSESSMENT**

The Scenery Resource Assessment (SRA) includes the inventory and analysis of Scenery Resource components; Landscape Character, Landscape Variety Class, Visual Sensitivity and Scenic Integrity. The SRA also includes the corresponding compatibility of the Landscape Character, Landscape Variety and Visual Sensitivity resources with flood protection methods that are routinely applied by the District in delivering flood hazard mitigation services and facilities.

### **2.1 Landscape Character Overview**

Landscape Character Types are the primary unit of land division used by the District to identify the variety of landscape settings that occur within the study area. Landscape Character is defined by the District as “the physical appearance and cultural context of a landscape that gives it an identity and ‘sense of place’” (District 2003). The District’s method for evaluating Landscape Character was developed from a commonly recognized tiered system used by the USDA Forest Service (USDAFS) visual resource managers and assessors to classify the visual character of National Forest landscapes.

### **2.2 Sonoran Desert Landscape Character Type**

The largest scale of study begins with the work of Nevin Fenneman, who identified physiographic provinces for the entire continental United States. These provinces were based on a landscape’s geomorphology, vegetation communities, and geology. The USDAFS further refined Fenneman’s provinces into Landscape Character Types based on landform, vegetation, and water as identified in *Landscape Character Types and Subtypes of the National Forests in Arizona and New Mexico*. The State of Arizona is divided into eleven Landscape Character Types defined by the Flood Control District. Please refer to the District’s publication *Preliminary Existing Landscape Character Assessment for Maricopa County* for an illustration of the placement of these Landscape Character Types within the State of Arizona. Only one Landscape Character Type exists in the Buckeye ADMP study area, the Sonoran Desert Landscape Character Type.

The Sonoran Desert Landscape Character Type is characterized by the long, broad alluvium, termed Bajada; the flat valley plains and washes central to the study area. Vegetative character varies through the Sonoran Desert, both in diversity and density. Species include the Palo Verde and Saguaro cacti, but are typically lower in density than neighboring areas with a different landscape character. The highest density of vegetation within the Sonoran Desert Landscape Character is typically found within the areas that receive permanent or intermittent water flows.

## 2.3 Landscape Character Subtypes

Landscape Character Subtypes for the Buckeye ADMP study area are based on the Flood Control Districts physical divisions for the Sonoran Desert Landscape Character Type. **Figure 2.3.1** illustrates the displacement of physical divisions within the study area. These Subdivisions are based on commonality of landform, vegetation, water and rock form. The District document titled *Preliminary Landscape Character Assessment for Maricopa County* identifies three subtypes within the Sonoran Desert Character Type: the Sonoran Mountain Lands, the Sonoran Valley Lands, and the Sonoran River Lands. Each of these three subtypes are found within the Buckeye ADMP Study Area.

The Sonoran River Lands subtype comprises little more than 16 percent of the study area containing perennial flows of water (natural and man-made) that are rare in the desert. The Gila and Hassayampa Rivers constitute the natural River Lands within the study area while the RID, Buckeye, and Arlington Canals represent the man-made River Lands. These areas contribute to the scenic resources of the study area. The Sonoran Valley Lands subtype comprises 80 percent of the study area. The majority of the Valley Lands subtype is agricultural in nature providing a lush green panorama when dropping into the Buckeye Valley from I-10. Sonoran Mountain Lands make up slightly over four percent and occur along the northern boundary of the study area.

# BUCKEYE AREA DRAINAGE MASTER PLAN

Flood Control District of Maricopa County  
June 2007

## PHYSICAL DIVISIONS

### SONORAN DESERT CHARACTER SUBTYPES

	River Channel		River Terrace
	Valley Plain		Dissected Slopes
	Valley Rivers & Washes		Arroyo
	Bajada		

### REFERENCE FEATURES

	Subtype Boundary		50 Foot Contours
	Flood Control Structures		Canals
	Interstate Highways		Rivers and Washes
	State Highways		Buckeye ADMP Boundary
	Major Roads		

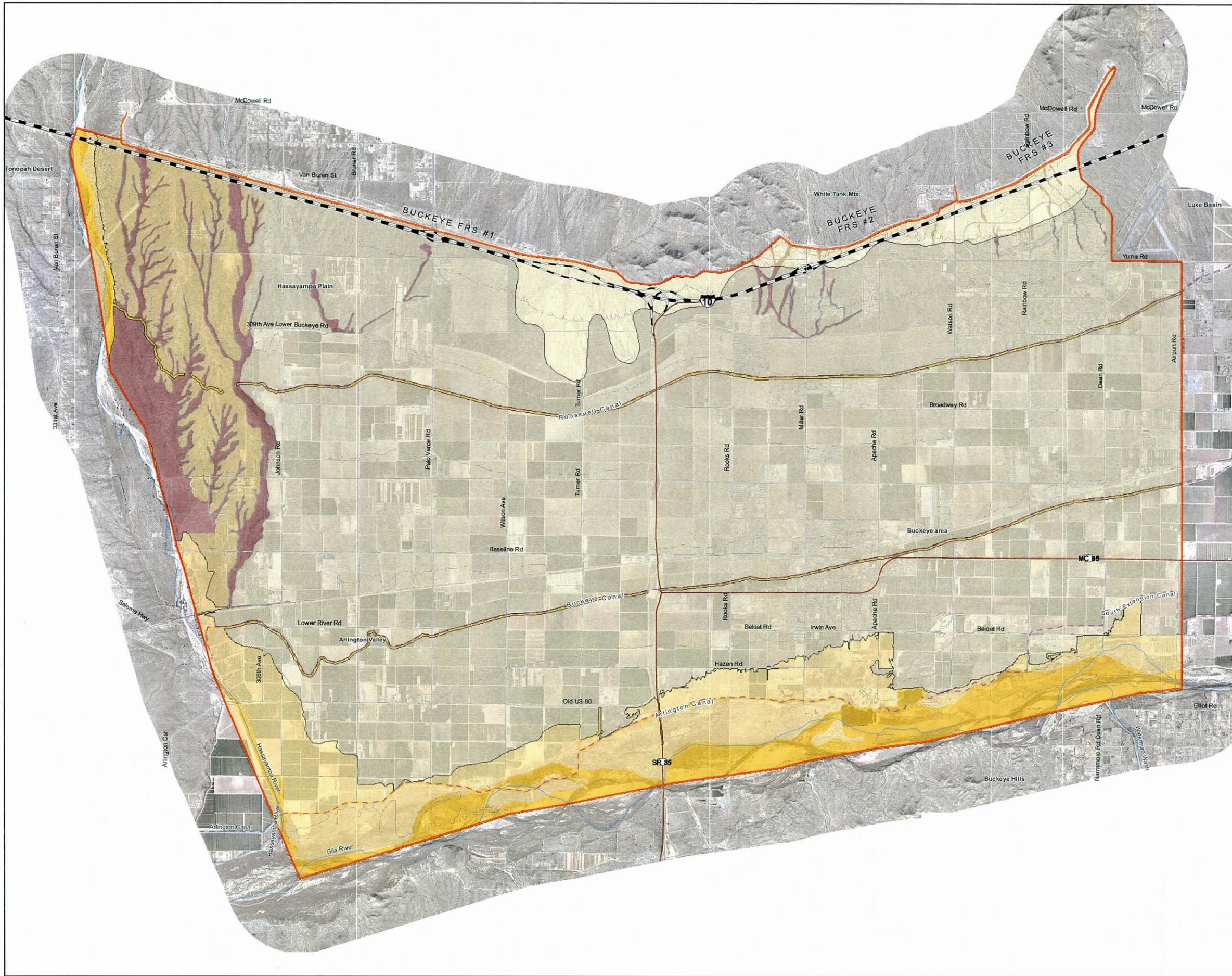


Figure 2.3.1

## 2.4 Landscape Character Units

The Landscape Character Unit is the smallest division of Landscape Character Types that occur within the study. The Landscape Character Unit was created by combining two study area elements 1) the Physical Divisions and 2) the Cultural Settings. After delineating the Landscape Character Types and subtypes as described earlier in this report, the natural features of the land were further refined and delineated within each subtype based, as before on landform, vegetation, water and rock form. The resulting units are referred to as Physical Divisions. Using data provided by the District and a GIS database, in conjunction with field reconnaissance, data analysis, and professional judgement, each Physical Division was delineated by Olsson Associates in collaboration with the District. The resultant illustration of each Physical Division within the study area is displayed in **Figure 2.1.1**. This process resulted in the identification of seven Physical divisions within the study area; River Channel, River Terrace (Sonoran River Lands), Valley Plains, Valley Rivers & Washes, Dissected Slopes (Sonoran Valley Lands), Arroyo, and Bajada (Sonoran Mountain Lands).

“The delineations of the Cultural Settings were based upon the work of MAG. This agency creates a detailed land database every several years that is divided into land use categories. The District reclassified the land uses into five distinct categories, referred to in this landscape assessment as Cultural Settings. The determination of the settings were based upon the level of visual influence exerted by cultural development, recognizing that visual character is expressed in form, line, color, and texture. The following settings were identified according to their level of cultural development: Natural & Pastoral, Rural, Suburban, and Industrial” (District 2003). For more information regarding the reclassification please refer to the District’s publication *Preliminary Existing Landscape Character Assessment for Maricopa County*.

Landscape Character units are derived through the combining of physical divisions and the cultural settings of the study area. These two elements were combined to create the Landscape Character Unit. Landscape Character Units are further described by the following characteristics:

### Natural Features:

- Landform – Includes discussion of topography varying from gentle, subtle, flat, or recessed.
- Vegetation – Native or non-native species will be identified if a species of significance is present.
- Water Form – Is comprised of perennial, intermittent or non existent.
- Rock Form – Includes bedrock, boulders, rock outcroppings, cobble flats or visually nonexistent. This setting can also include introduced rock in the form of rip-rap and surface select boulders.

Cultural Settings:

- Development Pattern – Takes the form of linear, curvilinear, random or non-existent.
- Circulation – Includes improved, unimproved, grid, trails, random.
- Building Type – Is comprised of Agricultural, residential, commercial or industrial.
- Open Space – Is defined as cultural, biological, visual, managed open space, or non-existent.

Visual Characteristics:

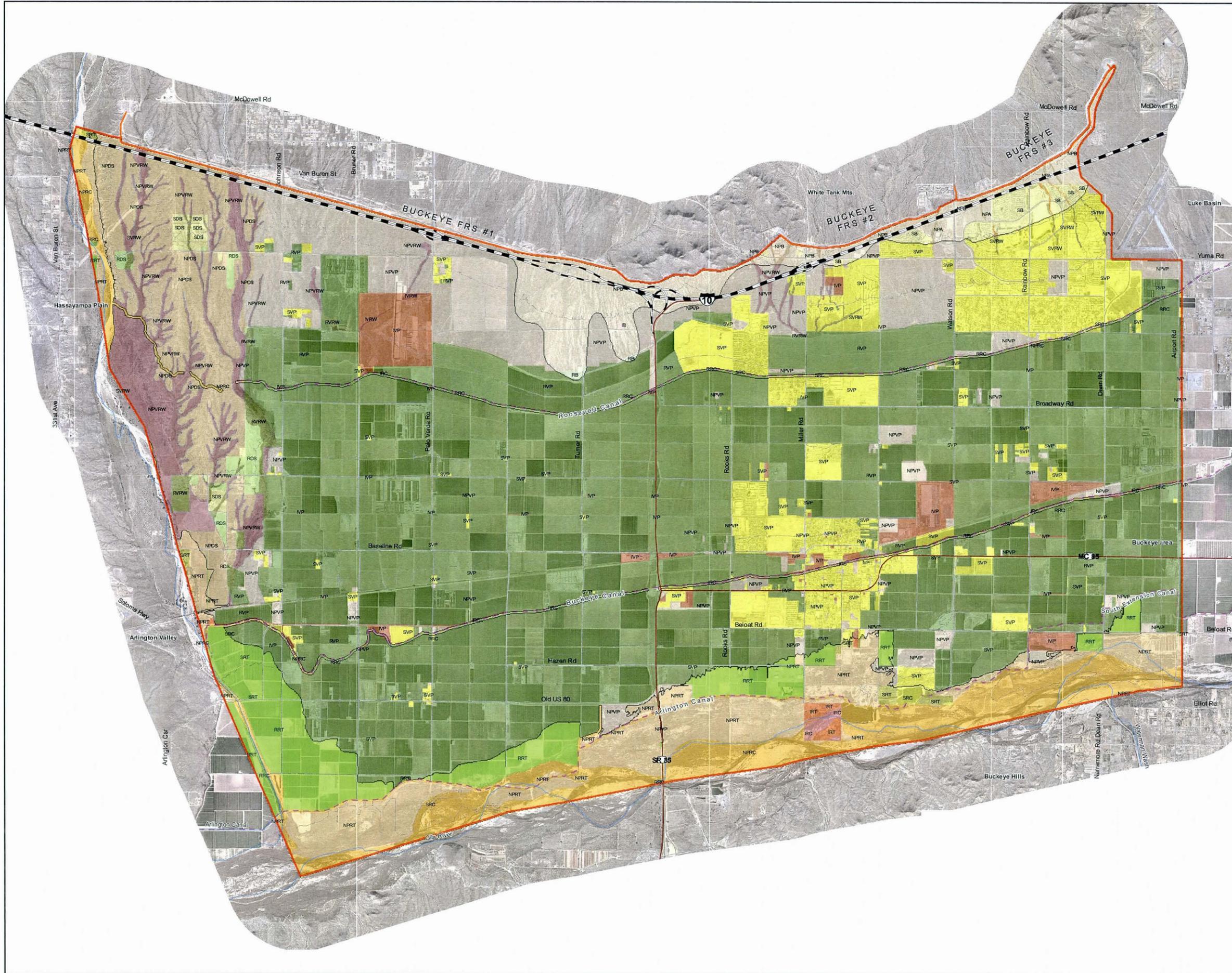
- Form – Included are the characteristic vertical, horizontal, linear, curvilinear, angular or rectangular.
- Line – Is comprised of vertical, horizontal, linear, curvilinear, angular or rectangular.
- Color – The dominant color(s) found in the unit are discussed.
- Texture – Is defined as fine, medium or course.
- Scale – Impression of physical significance in the foreground and how it is perceived within the study area.
- Composition – Focal point, panorama or discordant focal-point.

**Table 2.4.1, Table 2.4.2, and Table 2.4.3** provide a summary of the Existing Landscape Character Units organized by the landscape character subtype, found within the study area. The total acreage of each Landscape Character Unit and the corresponding percent of the total study area covered are displayed in these tables. The information is graphically illustrated in **Figure 2.4.1**

# BUCKEYE AREA DRAINAGE MASTER PLAN

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## EXISTING LANDSCAPE CHARACTER



### SONORAN DESERT CHARACTER TYPE

#### Sonoran River Lands Subtype

NPRC	Natural and Pastoral River Channel Unit	NPRT	Natural and Pastoral River Terrace Unit
RRC	Rural River Channel Unit	RRT	Rural River Terrace Unit
SRC	Suburban River Channel Unit	SRT	Suburban River Terrace Unit
IRC	Industrial River Channel Unit	IRT	Industrial River Terrace Unit

#### Sonoran Valley Lands Subtype

NPVP	Natural and Pastoral Valley Plain Unit	NPVRW	Natural and Pastoral Valley Rivers & Washes Unit
RVP	Rural Valley Plain Unit	RVRW	Rural Valley Rivers & Washes Unit
SVP	Suburban Valley Plain Unit	SVRW	Suburban Valley Rivers & Washes Unit
IVP	Industrial Valley Plain Unit	IVRW	Industrial Valley Rivers & Washes Unit
NPDS	Natural and Pastoral Dissected Slopes Unit	SDS	Suburban Dissected Slopes Unit
RDS	Rural Dissected Slopes Unit	IDS	Industrial Dissected Slopes Unit

#### Sonoran Mountain Lands Subtype

NPA	Natural and Pastoral Arroyo Unit	NPB	Natural and Pastoral Bajada Unit
SA	Suburban Arroyo Unit	RB	Rural Bajada Unit
SB	Suburban Bajada Unit	IB	Industrial Bajada Unit

### REFERENCE FEATURES

	Subtype Boundary		50 Foot Contours
	Flood Control Structures		Rivers and Washes
	Interstate Highways		Buckeye ADMP Boundary
	State Highways		
	Major Roads		



Figure 2.4.1

The following sections provide a detailed description of each Landscape Character Unit. The means by which the Landscape Character Units will be described will be directly related to what is outlined in the Maricopa County Landscape Character Assessment. Each Landscape Character Unit is defined by its natural features, cultural features, and its visual characteristics.

### **Sonoran River Lands Subtype Landscape Character Units**

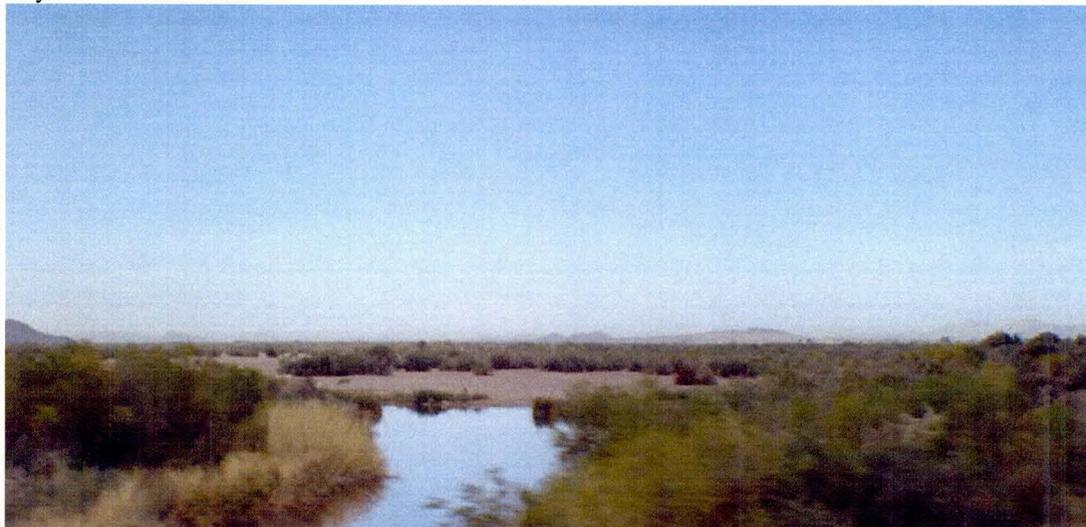
The Sonoran River Lands encompass approximately 10,517 acres of the Buckeye study area. Eight distinct landscape units occur within the Sonoran River Lands Subtype in the Buckeye study area. They include:

**Table 2.4.1**

<b>Sonoran River Lands Subtype</b>	<b>Acreage</b>	<b>Percent of total</b>
• Natural and Pastoral River Channel	3,621	5.52%
• Rural River Channel	356	0.54%
• Suburban River Channel	145	0.22%
• Industrial River Channel	147	0.22%
• Natural and Pastoral River Terrace	3,377	5.15%
• Rural River Terrace	2,628	4.01%
• Suburban River Terrace	130	0.20%
• Industrial River Terrace	111	0.17%
<b>TOTAL</b>	<b>10,517</b>	<b>16.03 %</b>

#### ***Natural and Pastoral River Channel Landscape Unit***

The Natural and Pastoral River Channel Unit comprises approximately 3,621 acres or 5.52 percent of the study area. The NPRCU encompasses the Gila and Hassayampa Rivers as well as portions of the RID Canal, Buckeye and Arlington Canals that border other Natural and Pastoral Units are also included in this category due to the existence of perennial waters. The Gila River and the Canals have perennial waterflows and the Hassayampa River has intermittent with the exception of the area south of the RID tailwater. Lush vegetation occurs along the river channel, and the riparian nature of this landscape character unit makes it unique in the area. Although mostly non-native plants such as the Tamarisk and Arrowweed are prevalent, there are a few native Cottonwood in the area along with some Mesquite Bosques. The areas around the canals once were lined with trees reinforcing the vertical aspect. However, due to maintenance and operations issues, these trees have been removed.



SR85 center of the bridge over the Gila

### **Natural Features**

Landform – Curvilinear ‘U’ shaped channels with vertical lines of trees.

Vegetation – Riparian/lush vegetation combined with the seasonal nature of the crops providing intermittent greens and beiges. Riparian areas are brown in winter, light green in summer.

Water Form –Perennial and intermittent

Rock Form –Small boulders and cobble flats in the river.

### **Cultural Features**

Development Pattern – Non-existent or temporary transient development.

Circulation – Unimproved dirt “trails” random in nature.

Building Type – No residential structures however there are occasional agriculture and industrial facilities.

Open Space –This area serves as a cultural and biological open space for the surrounding area.

### **Visual Characteristics**

Form – Linear nature of the cement lined canal with linear agriculture dominate the unit near the canals. The changing river channel provides a braided meandering form at the river.

Line – Curvilinear at the river and linear at the canal

Color – Lush greens and shades of brown when the seasons change

Texture – Fine texture due to the dense plant growth

Scale – Medium the continuous canopy overhead provides feeling of large rooms

Composition – The linear nature of surrounding landscape and perennial/intermittent flows make this a focal point within the study area. Near the river the vertical nature of the trees become skyline and shows the curvilinear form of the river

### ***Rural River Channel Unit***

The Rural River Channel Unit comprises approximately 356 acres or  $\geq 1$  percent of the study area. This Unit also includes the RID, Buckeye and Arlington Canals that cross the study area as well as modified reaches of the Gila and Hassayampa Rivers. The rural landscape that surrounds this Unit is agricultural in character, and the fields abut the river as well as the canals.



Palo Verde Road at the Roosevelt Irrigation District Canal

### **Natural Features**

Landform – Horizontal, flat broad nature.

Vegetation – Agricultural in nature green of the crops the trees on the edge of the river but no trees on the edge of the canals.

Water Form – Perennial and intermittent

Rock Form – Non-existent.

### **Cultural Features**

Development Pattern – Random with the linear nature of the fields.

Circulation – Grid

Building Type – Farm outbuildings and accessory structures

Open Space – This area serves as a visual open space for the surrounding area.

### **Visual Characteristics**

Form – Curvilinear near the rivers but linear agricultural/canal areas.

Line – Linear due to the agricultural nature.

Color – Green of the crops, beige of the fields without crops in them, white gray of canal and blue/brown of water.

Texture – Fine for the lush vegetation near the river channel and fine to coarse for the seasonal nature of the agriculture near the canal.

Scale – Medium near the river due to the vegetation and small near the canal due to the vast and open areas in the valley plain.

Composition – Panoramic.

### ***Suburban River Channel Unit***

The Suburban River Channel Unit comprises approximately 145 acres  $\geq$  1 percent of the study area. The majority of this category falls within the Gila River Corridor however there are areas within this Unit that fall next to the canals. The water flow is perennial and the vegetation at the river is of a lush riparian nature however due to maintenance issues vegetation of the scale that we find at the rivers rarely grows up along the canal banks.



Rainbow Road and the RID Canal

#### **Natural Features**

Landform – Horizontal.

Vegetation – Non-native to non-existent vegetation.

Water Form – Perennial.

Rock Form – Non-existent.

#### **Cultural Features**

Development Pattern – The linear form of suburban residential and commercial buildings is present in this unit.

Circulation – Grid like improved roads in developed areas

Building Type – Residential or commercial

Open Space – Non-existent

#### **Visual Characteristics**

Form – Linear and rectilinear with the cubes of building and the grid of the streets

Line – Linear nature of canal and streets along with the rectilinear nature of the houses and commercial buildings.

Color – Sand, white and grey of canal blue/brown of water, green of fields, black of asphalt, building colors.

Texture – Medium

Scale – Medium in scale with everything around it.

Composition – Due to the residential growth masking the Canals they are not a focal point.

### ***Industrial River Channel Unit***

The Industrial River Channel Unit comprises approximately 147 acres or  $\geq 1$  percent of the study area. A Sand and Gravel operation at the end of Miller Road is the only industrial unit in the ICLU of the study area. Portions of the Canals that border other industrial uses are considered within this unit (for example the airport abuts the RID).



Sand and Gravel pit at end of Miller Road in the Gila River

### **Natural Features**

Landform – Curvilinear at the rivers, with broad flat ‘U’ channels and horizontal around the canals.

Vegetation – No buffer vegetation.

Water Form – Perennial flows however the mining in this case occurs on a portion of the river channel that the river has been bypassed.

Rock Form – Non-existent.

### **Cultural Features**

Development Pattern – Vertical which is consistent with industrial uses.

Circulation – Grid like, improved roads for ingress and egress.

Building Type – Industrial.

Open Space – Non-existent.

### **Visual Characteristics**

Form – Vertical and rectilinear.

Line – Large vertical elements.

Color – Sand and beige of the channel bottom and white gray of the crusher

Texture – Coarse.

Scale – Large scale with crusher and tailing piles are out of scale with the surrounding landscape.

Composition – The industrial building size is a contrast to the surrounding landscape its size does give the unit status as a focal point although discordant.

### ***Natural and Pastoral River Terrace Unit***

The Natural and Pastoral River Terrace Unit comprises approximately 3,377 acres or 5.15 percent of the study area. It can be characterized as a natural geographic area adjacent to and slightly above the River Channel Landscape Unit. Typically man-made modifications are not present within this unit. Vegetation includes primarily Mesquite, Cottonwood, Arrowweed and Tamarisk interspersed within a sandy, gravelly soil type that provides visual interest when juxtaposed with lush greens of patch vegetation communities. Standing water or small streams may be present within this unit. These elements create distinct areas of mature tree stands creating additional vertical elements within the primarily natural setting. A wild fire impacted a large stand of Mesquite, Tamarisk and Arrowweed and other riparian species along the north river terrace of the Gila River from Miller Road to Rainbow Road.



Turner Road south of Old US 80

### **Natural Features**

Landform – Horizontal but multi-tiered, there are some rolling hills along the Hassayampa  
Vegetation – A few lone Cottonwood exist as well as Arrowweed, Tamarisk, Mesquite Bosques (the portion of the Gila that was burned had Arrowweed and Tamarisk in it),

Water Form – Intermittent water present during heavy storms.

Rock Form – Some boulders but mostly absent of rock form.

### **Cultural Features**

Development Pattern – Non-existent

Circulation – Meandering undeveloped dirt trails.

Building Type – Non-existent

Open Space – Abundant with majority of pedestrian level viewpoints cut off by the tree canopy, viewed as a cultural and biological open space.

### **Visual Characteristics**

Form – Broad flat horizontal land with some undulation.

Line – Curvilinear near the river.

Color – Sandy beige, gray greens and the seasonal flower colors of yellow purple and white. The fire damaged area of the Gila River is black and beige.

Texture – Medium texture due to the dense vegetation and course where the burn occurred along the Gila River.

Scale – Medium in scale with everything around it.

Composition – Panoramic and a focal point, the burned areas form a discordant focal point.

### ***Rural River Terrace Unit***

The Rural River Terrace Unit comprises approximately 2,628 acres or 4.01 percent of the study area. This Unit can be characterized as an open space due to the panoramic nature of the valley. This Unit is found on the northern fringes of the Gila River and the confluence of the Gila and Hassayampa that typically contains visible agricultural fields. These fields contain a supporting irrigation system around portions of the field. These irrigation systems are most often low lying concrete or earthen canals that create a distinct noticeable linear feature that is an associated part of the character of rural landscapes.



Narramore Road between Johnson and Bruner Road

### **Natural Features**

Landform – Horizontal with a multi-tiered horizontal aspect, there are some rolling hills along the Hassayampa River.

Vegetation – Non-native, predominately agricultural crops with interspersed planted trees along homesteads.

Water Form – Intermittent, water during heavy storms.

Rock Form – Non-existent due to agricultural use.

### **Cultural Features**

Development Pattern – Agricultural with random spacing

Circulation – Unimproved roads primarily in a grid pattern due to the agricultural nature of the unit

Building Type – Agricultural in nature.

Open Space - Panoramic in nature with wide open views, this unit serves visual open space within the study area.

### **Visual Characteristics**

Form – Broad flat and horizontal.

Line – Strong linear pattern with crop rows and irrigation ditches

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Color - Sandy beige, gray greens against the river with the seasonal deep green color of the fields.

Texture – Fine.

Scale – Large, vast areas of seemingly infinite background of open fields.

Composition – Panoramic.

### ***Suburban River Terrace Unit***

The Suburban River Terrace Unit comprises approximately 130 acres or  $\geq 1$  percent of the study area. This unit contains man-made facilities constructed within, or on the edge of the Gila and Hassayampa Rivers or canal corridors. These facilities are constructed low on the horizon and only attract attention from a distance due to their tree massing along the river and go mostly unnoticed as canal banks in the residential and commercial areas of the Town of Buckeye.



Dean Road and the RID Canal

### **Natural Features**

Landform – Horizontal but multi-tiered along the rivers due to the vegetation.

Vegetation – Non-native.

Water Form – Perennial flows in the canals and intermittent in the Hassayampa River

Rock Form – Non-existent.

### **Cultural Features**

Development Pattern – Newer suburban development combined with the grid-like linear nature of the older neighborhoods.

Circulation – Grid like

Building Type – Residential and commercial

Open Space – Open space is managed within the subdivisions.

### **Visual Characteristics**

Form – Broad flat and horizontal.

Line – Linear or curvilinear depending on proximity to the river or canal

Color – Sandy beige gray greens with the seasonal flowers of yellow purple and white. In addition this area has the colors of the houses and the streets. The fire damaged area of the Gila River is black and beige.

Texture – Medium texture due to the houses.

Scale – Medium in scale with everything around it

Composition – No defined focal point along the canals. The Hassayampa becomes the focal point for the Residential development near the River.

### ***Industrial River Terrace Unit***

The Industrial River Terrace Unit comprises approximately 111 acres or  $\geq 1$  percent of the study area. This unit is primarily situated south of the Town of Buckeye at the Gila River as well as along the study area canals. This unit contains obvious industrial man-made structures (e.g., gravel extraction facilities near the river, large feed lots near the canals and ingress and egress roads) surrounded by highly noticeable landscape modifications (e.g., waste piles, industrial sized buildings). The industrial uses may affect the existing natural integrity of adjacent units that are not already identified as having an industrial setting.



Seventh Street and the Buckeye Canal

### **Natural Features**

Landform – Vertical and rectilinear due to the major man-made modifications.

Vegetation – Traditionally no buffer vegetation is placed around the industrial uses.

Water Form – Intermittent with seasonal rains.

Rock Form – Non-existent

### **Cultural Features**

Development Pattern – Industrial

Circulation – Grid like

Building Type – Industrial large scale

Open Space – Non-existent

### **Visual Characteristics**

Form – Vertical and rectilinear nature of the industrial equipment

Line – Vertical and rectilinear

Color – Sandy, beige and gray and browns.

Texture – Coarse

Composition – Its industrial size does make it its own focal point, although it is discordant.

### Sonoran Landscape Valley Lands Subtype Units

As discussed in the previous section, the Sonoran Valley Lands Subtype contains distinctive physical, cultural, and visual characteristics when compared to other subtypes within the Sonoran Desert Character Type and comprises approximately 52,380 acres. Further, unique landscape units are contained within each subtype. Twelve distinct landscape units occur within the Sonoran Valley Lands Subtype as follows:

**Table 2.4.2**

<b>Sonoran Valley Lands Subtype</b>	<b>Acreage</b>	<b>Percent of total</b>
• Natural and Pastoral Valley Plain	5,863	8.94%
• Rural Valley Plain	32,700	49.83%
• Suburban Valley Plain	6,149	9.37%
• Industrial Valley Plain	1,403	2.14%
• Natural and Pastoral Rivers and Washes	2,121	3.23%
• Rural Valley Rivers and Washes	343	0.52%
• Suburban Valley Rivers and Washes	80	0.12%
• Industrial Valley Rivers and Washes	13	0.02%
• Natural and Pastoral Dissected Slopes	3,248	4.95%
• Rural Dissected Slopes	286	0.44%
• Suburban Dissected Slopes	173	0.26%
• Industrial Dissected Slopes	1	0.00%
<b>TOTAL</b>	<b>52,380</b>	<b>79.83%</b>

The following sections describe briefly these landscape units.

#### *Natural and Pastoral Valley Plain Unit*

The Natural and Pastoral Valley Plain Unit comprises approximately 5,863 acres or 8.94 percent of the study area. This Unit is made up of relatively flat lands on the northern edges of the study area near I-10. Loosely spaced Creosote bushes are the predominant vegetation; Saguaro and Palo Verde exist adjacent to the Bajada. Some undisturbed drainage flows do exist in this unit.



East of Johnson Road and north of Yuma Road

### **Natural Features**

Landform – Horizontal, flat broad surface, undulates slightly.

Vegetation – Creosote, some Saguaro and Palo Verde where the unit approaches the Bajada

Water Form – Intermittent, some small drainage patterns.

Rock Form – Non-existent to small boulders and desert pavement.

### **Cultural Features**

Development Pattern – Non-existent

Circulation – Undeveloped trails randomly dispersed

Building Type – Non-existent

Open Space – Open fields where disturbance is usually evident, this unit is seen as cultural and biological open space.

### **Visual Characteristics**

Form – Horizontal/flat no topographic relief in this study area.

Line – Linear (horizon) some undulation with the drainage vegetation really starts at the edge of the unit.

Color – Primarily beige, sand and grey and vegetation color of creosote is grey/green with some yellow when it flowers.

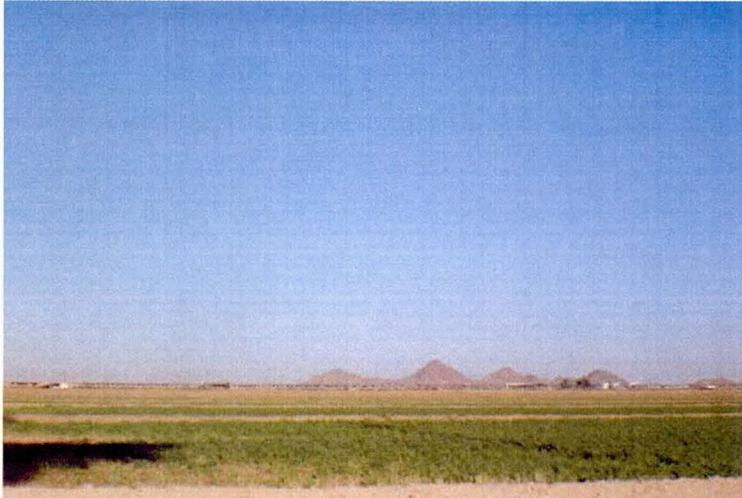
Texture – Creosote give it a medium texture.

Scale – Large wide open expanse.

Composition – Panoramic with views to the White Tank Mountains.

### ***Rural Valley Plain Unit***

The Rural Valley Lands Unit comprises approximately 32,700 acres or 49.83 percent of the study area. This Unit is heavily agricultural and noticeable on the horizon within the entire Buckeye study area. Typically, man-made features include farming and agricultural facilities make up this unit. This unit typifies the agricultural lifestyle that the Buckeye area has been known for.



Watson and Broadway Roads

### **Natural Features**

Landform – Horizontal, flat broad surface, combined with the linear nature of the plowed fields.

Vegetation – Non-native crops and trees around farmhouses.

Water Form – Perennial water flows due to the canals.

Rock Form – Non-existent due to agricultural use.

### **Cultural Features**

Development Pattern – Agricultural, sparse overall however agricultural needs make for “clumps” of buildings, especially the dairy farms and feedlots, where rows of long roofed buildings are lined up for hundreds of feet.

Circulation – Improved and unimproved grid.

Building Type – Agricultural.

Open Space – Panoramic, open fields provide visual open space

### **Visual Characteristics**

Form – Horizontal

Line – Linear.

Color – Varying shades of green depending on the crops, Sandy beige colors when the crops are not being grown,

Texture – Fine to medium depending on where the planted fields are in their lifecycle.

Course for the dairy and feedlots.

Scale – Large wide open expanses.

Composition – Panoramic, the largest view within the study area

### ***Suburban Valley Plain Unit***

The Suburban Valley Lands Unit comprises approximately 6,149 acres or 9.37 percent of the study area. This unit is made up of man-made features including suburban low to

medium-density housing, and other urban conditions consistent with expanding development. The current overall impression within this unit is one that includes the typical southwestern, small town setting (Town of Buckeye). However, this impression is rapidly changing as the metro-Phoenix area expands west. Rapid roadway improvements, infrastructure developments, and residential communities continue to expand these small pockets of suburban communities.



Yuma Road and Watson Road

### **Natural Features**

Landform – Horizontal, flat broad plains,

Vegetation – Non-native species interspersed with native species.

Water Form – Canals still exist but are tiled within the newer developments so the perennial waterflow is there but not seen.

Rock Form – Introduced rock forms, decomposed granite, rip rap, and surface select boulders

### **Cultural Features**

Development Pattern – Residential and commercial, in the town center it is grid like with modified curvilinear/circular layout on the northern reaches of the established Town of Buckeye. New development is typical tract-house layout.

Circulation – Grid

Building Type – Tract housing / commercial along main streets

Open Space – Existing parks, drainage areas, and retention basins within the new developments are managed within the development.

### **Visual Characteristics**

Form – Vertical and rectilinear.

Line – Linear with rectangular vertical elements with buildings and roofs.

Color – Reds and tans of roof tops, grey and greens of native and non-native plant species, purples, yellows, reds during seasonal color events.

Texture – Fine to medium, tile roof and streets are the fine, the large non native trees become the skyline.

Scale – Medium, everything is in scale with surroundings.

Composition – Not a focal point.

### ***Industrial Valley Plain Unit***

The Industrial Valley Lands Unit comprises approximately 1,403 acres or 2.14 percent of the study area. This Unit contains heavy industrial uses and man-made facilities that are highly noticeable and dominant features within a typically flat setting. Buckeye Municipal Airport, Phoenix/Goodyear Airport, the remnants of Luke Auxiliary Field #7, sand and gravel processing plant, and Walmart Warehouse are within this unit. Very little, if any, vegetative or topographic screening is available in or around these areas. Areas adjacent to the Industrial Valley Lands Unit tend to receive adverse visual effects that are attributed to the overall industrial nature within the unit.



Watson Road and Southern Avenue

### **Natural Features**

Landform – Horizontal with flat broad surfaces broken up by the vertical nature of the industrial buildings.

Vegetation – Non-native species mixed in with native, little to no buffer vegetation.

Water Form – Non-existent

Rock Form – Non-existent

### **Cultural Features**

Development Pattern – Industrial, vertical and rectilinear.

Circulation – Grid like

Building Type – Large industrial

Open Space – Non-existent

### **Visual Characteristics**

Form – Rectilinear, linear and vertical nature of industrial development.

Line – Horizontal with some vertical and rectilinear for buildings.

Color – Colors of the buildings, metals, asphalt,

Texture – Medium with building façade and roof top air handlers

Scale – Large out of scale with the rest of the landscape.

Composition – The size of industrial uses create a discordant focal point

### ***Natural and Pastoral Valley Rivers and Washes Unit***

The Natural and Pastoral Valley Rivers and Washes Unit comprises approximately 2,121 acres or 3.23 percent of the study area. This Unit is made up of natural areas between the Hassayampa River and the White Tanks Wash as well as a small area east of Miller Road north and south of I-10. Vegetation in this Unit is generally more dense than the Valley Plain but not as lush or riparian as the River Terrace. An exception to this generality are the areas of the Valley Rivers and Washes south of the RID Canal tail water outfall that contain perennial flows much like other areas termed River Channel.



West of Johnson Road and south of Yuma Road

### **Natural Features**

Landform – Subtle broad recessed landforms that vary in width and depth of wash some become large ‘U’ or ‘V’ shaped washes.

Vegetation – Palo Verde, Ironwood and Saguaro are present in this Unit much like the Bajada Unit due to the increased water in the unit. The outfall area is mostly non-native vegetation.

Water Form – Intermittent water forms, the monsoons are erosive in this Unit.

Rock Form – Some bedrock is exposed from water erosion with some rock outcrops.

### **Cultural Features**

Development Pattern – Non-existent

Circulation – Curvilinear random, undeveloped trails.

Building Type – Non-existent

Open Space – This Unit is seen as a cultural open space.

### **Visual Characteristics**

Form – Broad to narrow curvilinear ‘U’ shaped channels.

Line – Undulating and curvilinear

Color – Greens to grays as well as yellow, white, and purple when seasonal bloom occurs.

Texture – Medium.

Scale – Small due to the recessed nature of the washes.

Composition – Focal point due to the relatively small area of natural and pastoral setting in the study area.

### ***Rural Valley Rivers and Washes Unit***

The Rural Valley Rivers and Washes Unit comprises approximately 343 acres or  $\geq 1$  percent of the study area. This Unit is primarily made up of agricultural uses between the Hassayampa River and the White Tanks Wash. There are also small portions of this Unit south of the RID Canal tail water outfall that have perennial flows.



West of Johnson Road between Southern Avenue and Broadway Road

### **Natural Features**

Landform – Subtle recessed forms that vary in width and depth of wash some large ‘U’ shaped channels that are curvilinear and undulating.

Vegetation – Non-native agricultural fields.

Water Form – Intermittent flow during heavy storms with the exception of the perennial flows from the RID outfall.

Rock Form – Non-existent.

### **Cultural Features**

Development Pattern – Agricultural

Circulation – Grid like unimproved roads.

Building Type – Agricultural buildings

Open Space – This Unit is seen as a cultural open space.

### **Visual Characteristics**

Form – Broad curvilinear ‘U’ shaped channels combined with the linear nature of agriculture.

Line – Curvilinear due to the channel and linear due to the agricultural nature.

Color – Green and beige due to the seasonal nature of agriculture.

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Texture – Fine for the fields

Scale – Small, recessed nature of the washes.

Composition – Focal point.

### ***Suburban Valley Rivers and Washes Unit***

The Suburban Valley Rivers and Washes Lands Unit comprises approximately 80 acres or  $\geq 1$  percent of the study area. This Unit is made up of residential areas between the Hassayampa River and the White Tanks Wash as well as the area east of Miller Road and south of I-10.



North of Yuma Road between Rainbow Road and Dean Road

#### **Natural Features**

Landform – Subtle recessed forms that vary in width and depth of wash some large ‘U’ shaped channels that are curvilinear and undulating.

Vegetation – Non-native species outside of preserved wash.

Water Form – Intermittent.

Rock Form – Exposed bedrock from water erosion, rock outcrops as well as some introduced rip rap.

#### **Cultural Features**

Development Pattern – Residential and commercial

Circulation – Improved roads with the curvilinear nature of newer subdivisions

Building Type – Residential

Open Space – Open space is managed within the development, some cultural and biological open space still exist in the natural washes.

#### **Visual Characteristics**

Form – Broad to narrow curvilinear ‘U’ shaped channels.

Line – Curvilinear

Color – Greens, grays and sandy beiges as well as the colors of houses and roofs and non-native plants.

Texture – Medium

Scale – Small recessed nature.

Composition – Focal-point becomes the houses.

### ***Industrial Valley Rivers and Washes Unit***

The Industrial Valley Rivers and Washes Unit comprises approximately 13 acres or  $\geq 1$  percent of the study area. This Unit is made up of an industrial area east of Miller Road and south of I-10. The facilities within this area include an Eletrical Substation with Cell Towers.



Miller road and Tonopah Salome Hwy

#### **Natural Features**

Landform – Subtle recessed forms that vary in width and depth of wash some large ‘U’ shaped channels that are curvilinear and undulating disrupted by the vertical nature of the cell towers.

Vegetation – Sparse creosote plants with no buffer vegetation around the cell towers.

Water Form – Intermittent

Rock Form – Non-existent

#### **Cultural Features**

Development Pattern – Vertical.

Circulation – Grid like improved roads.

Building Type – Industrial

Open Space – Non-existent

#### **Visual Characteristics**

Form – Vertical

Line – Vertical and horizontal for the poles and lines.

Color – Metals / grays – green, grays of creosote

Texture – Coarse

Scale – Large out of scale with the surrounding landscape.

Composition – Focal point although discordant

### ***Natural and Pastoral Disected Slopes Unit***

The Natural and Pastoral Disected Slopes Unit comprises approximately 3,248 acres or 4.95 percent of the study area. The Unit is unique within the Sonoran Valley Lands type. It has combined characteristics of the valley plain and bajada but does not have the same variety of native plant species as the areas termed bajada. The land is undulating with a finger network of small washes seperating many of the high points. Saguaro is present at the high points of each of the hills. The disected slope unit is surrounded by a major wash

on one side and a major river corridor on the other. These two waterway corridors; the White Tanks Wash and the Hassayampa River run generally parralel to each other and effectively define the western and eastern boundaries of this landscape character unit.



West of Johnson Road south of Yuma Road north of the RID tailwater

### **Natural Features**

Landform – Broad undulating slopes, with a subtle multi-tiered horizon.

Vegetation – Some Saguaro's at the top of slopes, creosote as well as limited amounts of native trees exist in this Unit.

Water Form – Intermittent during storms.

Rock Form – Bedrock and rock outcroppings.

### **Cultural Features**

Development Pattern – Non-existent.

Circulation – Random, curvilinear trails that follow terrain.

Building Type – None

Open Space – Seen as cultural and biological open space.

### **Visual Characteristics**

Form – Curvilinear

Line – Undulating

Color – Sandy beiges with light greens and grays and seasonal color of desert plants yellow, whites and pinks.

Texture – Medium to course.

Compostion – Focal.

### ***Rural Dissected Slopes Unit***

The Rural Disected Slopes Unit comprises approximately 286 acres or  $\geq 1$  percent of the study area. The Unit is unique within the Sonoran Valley Lands type. It lies between the Hassayampa River and the White Tanks Wash corridors. This Landscape Character Unit has the added distinct quality of perrenial water due to the RID tailwater outfall. Agricultural fields within this Unit follow the undulating hills of the Rural Dissected Slopes Unit.



Baseline Road and 313<sup>th</sup> Avenue

### **Natural Features**

Landform – Broad undulating slopes, with a subtle multi-tiered horizon.

Vegetation – Riparian in the areas affected by the RID outfall mostly inhabited by non-native species as well as native and non-native species that inhabit the areas that do not receive the benefits of the RID outfall

Water Form – Perennial due to the RID outflow

Rock Form – Bedrock and small rock outcroppings

### **Cultural Features**

Development Pattern – Agricultural

Circulation – Grid.

Building Type – Agricultural.

Open Space – Seen as cultural openspace.

### **Visual Characteristics**

Form – Undulating with a low multi-tiered horizon.

Line – Curvilinear and undulating

Color – Greens of fields and riparian nature of the RID outfall areas, sandy, beige colors for the areas not under crop production or south of the outfall

Texture – Fine for crops medium for RID outflow areas.

Scale – Medium

Composition – Focal

### ***Suburban Dissected Slopes Unit***

The Suburban Dissected Slopes Unit comprises approximately 173 acres or  $\geq 1$  percent of the study area. The Unit is unique within the Sonoran Valley Lands type, it lies between the Hassayampa River and the White Tanks Wash corridor. The nature of this Landscape Character Unit is similar to all other Dissected Slopes with the low undulating multi-tiered horizon with the exception that it contains residential development at a higher density.



Yuma Road west of Johnson Road

### **Natural Features**

Landform – Undulating with low multi-tiered horizon.

Vegetation – The residential development has not been there long enough for large non-natives to become a focal point, Creosote with some Saguaro and Palo Verde comprise the native vegetation in the Unit.

Water Form – Intermittent.

Rock Form – Non-existent.

### **Cultural Features**

Development Pattern – Large lot residential.

Circulation – Grid like

Building Type – Residential

Open Space – Non-existent

### **Visual Characteristics**

Form – Undulating and rectilinear

Line – Vertical and rectilinear patterns due to power poles and houses

Color – Sandy, beige, green and gray

Texture – Medium.

Scale – Medium.

Composition – Not focal

### ***Industrial Dissected Slopes Unit***

The Industrial Dissected Slopes Unit comprises approximately 1 acre or  $\geq 1$  percent of the study area. The Unit is unique within the Sonoran Valley Lands type, it lies between the Hassayampa River and the White Tanks Wash corridors. Its land form is that of low rolling hills which do not coincide with the flat horizontal nature of the valley plain. A Sand and Gravel operation exists within the boundary of this Unit.



Southern Avenue at the 313<sup>th</sup> Avenue alignment

### **Natural Features**

Landform – Undulating and vertical.

Vegetation – No buffer vegetation for the industrial use

Water Form – Intermittent.

Rock Form – Non-existent.

### **Cultural Features**

Development Pattern – Vertical

Circulation – Grid, improved

Building Type – Industrial vertical

Open Space – Non-existent

### **Visual Characteristics**

Form – Vertical and undulating

Line – Linear

Color – Sandy, beige, and gray green of the creosote.

Texture – Course.

Scale – Large.

Composition – Focal point but discordant.

## **Sonoran Mountain Lands Unit**

As discussed in the previous section, the Sonoran Mountain Lands Subtype contains distinctive physical, cultural, and visual characteristics when compared to other subtypes within the Sonoran Desert Character Type and comprises approximately 2,721 acres. Further, unique Landscape Units are contained within each subtype. Six distinct Landscape Units occur within the Sonoran Mountain Lands Subtype as follows:

**Table 2.4.3**

<b>Sonoran Mountain Lands Subtype</b>	<b>Acreage</b>	<b>Percent of total</b>
• Natural and Pastoral Arroyo	43	0.07%
• Suburban Arroyo	13	0.02%
• Natural and Pastoral Bajada	2,171	3.31%
• Rural Bajada	24	0.04%
• Suburban Bajada	466	0.71%
• Industrial Bajada	4	0.01%
<b>TOTAL</b>	<b>2,721</b>	<b>4.15%</b>

The following sections describe briefly these landscape units.

***Natural and Pastoral Arroyo Unit***

The Natural and Pastoral Arroyo Unit comprises approximately 43 acres or  $\geq 1$  percent of the study area. The Unit is characterized by frequent side cutting, within highly erosive soils, that occurs along the wash edges that, in turn, continually transforms this unit year after year. The Arroyos typically include a flat sandy bottom central channel, with steep side slopes bordered by dense cover of native trees including Mesquites, Palo Verdes, Ironwoods, etc. These tree stands typically form an enclosed focal landscape with strongly defined edges. This Unit is natural appearing and provides a buffer between other adjacent Landscape Units.



South of I-10 west of Yuma Road

**Natural Features**

- Landform – ‘U’ shaped curvilinear depressions with gentle slopes in some areas
- Vegetation – Native species with denser concentrations than Valley Plain and contains basically the same plant species as in Bajada; Saguaro, Palo Verde, Creosote, Ironwood, Cholla and Brittlebush.
- Water Form – Intermittent
- Rock Form – Boulders.

**Cultural Features**

- Development Pattern – Non-existent

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Circulation – Random trails.

Building Type – Non-existent

Open Space – This unit is seen as cultural open space.

### **Visual Characteristics**

Form – Curvilinear ‘U’ shaped recessed channels.

Line – Linear.

Color – Sandy beige, greens grays and seasonal color.

Texture – Medium.

Scale – Small due to the recessed nature of the unit

Composition – Focal point.

### ***Suburban Arroyo Unit***

The Suburban Unit comprises approximately 13 acres or  $\geq 1$  percent of the study area. Like other Arroyo Units typically include a flat sandy bottom central channel, with steep side slopes. Within the Suburban setting the Arroyos are often incorporated into subdivisions as open space. This Unit can be a mix of managed openspace and natural Arroyo.



South of I-10 between Yuma Road and Rainbow Road

### **Natural Features**

Landform – ‘U’ shaped curvilinear depressions with gentle slopes in some areas.

Vegetation – Mix of native and non-native species.

Water Form – Intermittent.

Rock Form – Boulders and bedrock outcroppings introduced rip-rap and surface select boulders.

### **Cultural Features**

Development Pattern – New suburban residential development.

Circulation – Improved development roadways.

Building Type – Residential.

Open Space – Managed open space within the subdivision.

**Visual Characteristics**

Form – ‘U’ shaped depressed.

Line – Linear

Color – Reds of roofs green of natives and non natives, greens grays and seasonal color.

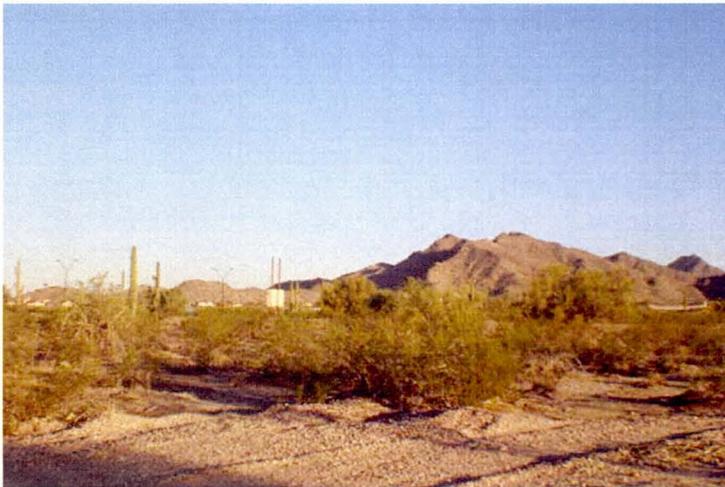
Texture – Medium

Scale – Small

Composition – Recessed the houses take over as focal point.

***Natural and Pastoral Bajada Unit***

The Natural and Pastoral Bajada Unit comprises approximately 2,171 acres or 3.31 percent of the study area. This Unit can be characterized as a gently sloping area that occurs between the Valley Plain of the Buckeye area and the White Tank Mountains to the north of the study area. The gentle slopes of the Bajada typically have a braided drainage pattern that creates a gentle rolling appearance. The Bajada Units in the Buckeye area are under pressure from residential development because of their attractive views and gentle topography. This Unit offers dramatic views of surrounding mountains, valleys, and river lands due to their raised elevations. The variety of vegetative forms within this Unit include; Saguaro, Creosote, Brittlebush, Cholla, and Palo Verde.



North of Yuma Road east of Watson Road

**Natural Features**

Landform – Gentle rise from Valley Plain to Foothills with shallow connected drainage give undulating feel.

Vegetation – Saguaro, Palo Verde, Creosote, Ironwood, Cholla and Brittlebush

Water Form – Intermittent

Rock Form – Some bedrock outcroppings.

**Cultural Features**

Development Pattern – Non-existent

Circulation – Unimproved random trails.

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Building Type – Non-existent  
Open Space – Seen as cultural open space

### **Visual Characteristics**

Form – Vertical of the vegetation and undulating horizontal landform.  
Line – Vertical and linear and curvilinear.  
Color – Dull greens to bright greens with gray greens and seasonal color.  
Texture – Medium to coarse depending on the vegetation density.  
Scale – Medium vegetation is more dominate than landform.  
Composition – Wide open views seasonal color focal point.

### ***Rural Bajada Unit***

The Rural Bajada Unit comprises approximately 24 acres or  $\geq 1$  percent of the study area. This Unit can be characterized as a semi-natural geographic area that is relatively flat in nature containing agricultural uses, low-density residential uses, above-ground electricity, and county-maintained roads. Typical plant species include; Cholla, Ocotillo, Saguaro, Palo Verde, Creosote and Ironwood contrasted with the lush desert Arroyo vegetation braided throughout the Unit as a whole. Within residential areas, plant pallets of both native and non-native vegetation occur. The overall rise of this Unit provide for distant views of surrounding Foothill and Mountain Units as well as views of the Gila River and distant Valley Lands.



North of the RID between Turner and Oglesby Road

### **Natural Features**

Landform – Gentle rise from valley plain to foothills with shallow connected drainage giving an undulating feel.  
Vegetation – Mix of native and non-natives.  
Water Form – Intermittent  
Rock Form – Random bedrock outcroppings.

### **Cultural Features**

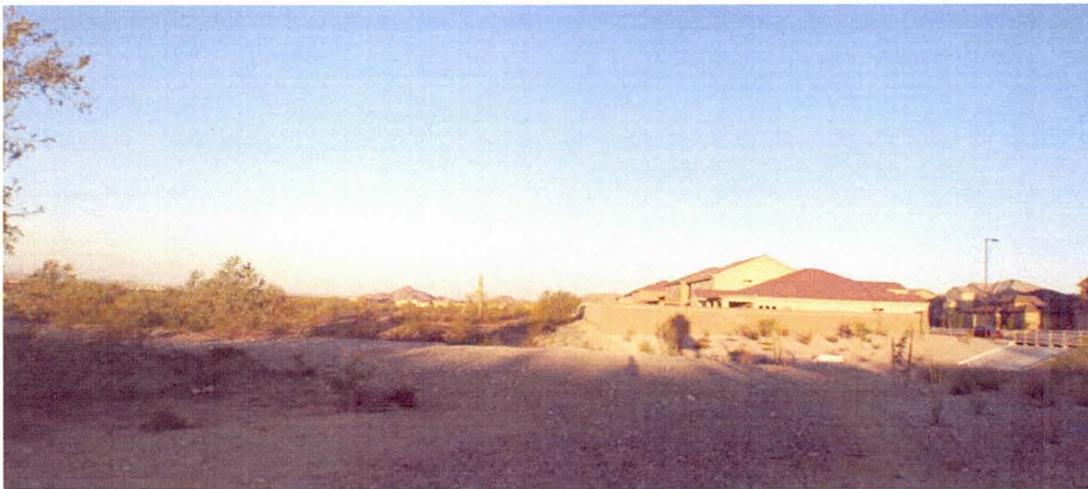
Development Pattern – Random  
Circulation – Unimproved roads – Linear to curvilinear  
Building Type – Agricultural  
Open Space – Entire setting is cultural open space

### **Visual Characteristics**

Form – Vertical of the vegetation and undulating horizontal land. Occasional hedgerows occur. Small cubes of houses.  
Line – Vertical and linear and curvilinear, rectilinear nature of houses along with linear nature of the canals.  
Color – Bright greens of crops and non-native plants. Seasonal nature of crops introduce the beige colors in to the unit.  
Texture – Medium to course for the density of the vegetation.  
Scale – Medium due to gentle upslope  
Composition – Panoramic, wide open views with seasonal color.

### ***Suburban Bajada Unit***

The Suburban Bajada Unit comprises approximately 466 acres or  $\geq 1$  percent of the study area. This Unit can be characterized as a man-made geographic area that is gently rising in nature containing residential developments, and maintained roads. Typical plant species include natives and non-native vegetation. The overall rise of this Unit provides for distant views of surrounding Foothill and Mountain Units as well as views of the Gila River and distant Valley Lands.



I-10 west of Yuma Road

### **Natural Features**

Landform – Gentle rise from Valley Plain to Foothills with shallow connected drainage give undulating feel.  
Vegetation – Natives and non-natives  
Water Form – Intermittent

Rock Form – Random bedrock outcroppings.

### **Cultural Features**

Development Pattern – Newer residential subdivision.

Circulation – Grid of improved roads, linear to curvilinear.

Building Type – Residential

Open Space – Managed open space within the subdivision.

### **Visual Characteristics**

Form – Linear and rectilinear of houses

Line – curvilinear

Color – Reds of house roofs non native plants. Seasonal color of native and non-native plants.

Texture – Fine for roof tops

Scale – Medium

Composition – Focal point

### ***Industrial Bajada Unit***

The Industrial Bajada Unit comprises approximately 4 acres or  $\geq 1$  percent of the study area. This Unit can be characterized as a man made area that is relatively flat in nature containing above-ground electricity, and cell towers. Plant species around the cell towers include Creosote flats contrasted with more dense desert vegetation surrounding the unit. The overall rise of this unit provides for distant views of surrounding Foothill and Mountain Units as well as views to the Gila River and distant Valley Lands.



West of Oglesby Road and north of the RID Canal

### **Natural Features**

Landform – Gentle rise from Valley Plain to Foothills with shallow connected drainage gives a feeling of undulation.

Vegetation – No buffer vegetation however Creosote does exist in the Unit.

Water Form – Intermittent

Rock Form – Non-existent

### **Cultural Features**

Development Pattern – Industrial vertical

Buckeye Area Drainage Master Plan  
Contract FCD 2004 C058  
Landscape Resources Inventory & Analysis  
July 2007  
Circulation – Unimproved grid  
Building Type – Industrial  
Open Space – Non-existent

**Visual Characteristics**

Form – Vertical form of cell towers undulating horizontal land.

Line –Vertical and linear

Color – Sandy, gray green of creosote and the grey steel of the electrical and cell tower.

Scale – Large cell towers are more dominant than vegetation or landform

Composition – Cell towers are a discordant focal point.

## 2.5 Future Landscape Character Units

Future Landscape Character Units for the study area were created using the same methodology as the Existing Landscape Character Units. The singular distinction between Future Landscape Character and Existing Landscape Character is the time frame of the Cultural Settings used for each. The purpose of collecting and analyzing the future landscape character is to gain an understanding of how future development may have an impact on the land use of the project study area. Differing land uses may result in differing compatibility classes for flood control structures. Understanding how land use will impact future compatibility provides the team with a proactive stance when evaluating flood control alternatives and how they may be treated with future development in mind. The twenty year Future Land Use Plan developed by MAG was used to produce the Future Landscape Character Units. This data from MAG was combined with the same physical divisions used in the creation of Existing Landscape Character Units. **Table 2.5.1** is a summary of the Future Landscape Character Units found within the study area, the total acreage of coverage and the percent of the total study covered. The information is graphically illustrated in **Figure 2.5.1**.

The only Landscape character unit that was added between the existing and future landscape character units is the Rural Arroyo Unit. In **Table 2.5.1** the existing acreage and percentage of landscape character subtype from table **2.4.1**, **2.4.2** and **2.4.3** has been brought in next to the future acreage and percentage of landscape character subtype. The majority of the changes in all subtypes come in the loss of acreage in the Natural and Pastoral and Rural units and the gain in acreage of the Suburban units. Nowhere is this more dramatic than the projected change in the Valley Lands Subtype. The change from Natural and Pastoral Valley Plain and Rural Valley Plain to Suburban Valley Plain will transform the landscape of the Buckeye ADMP study area.

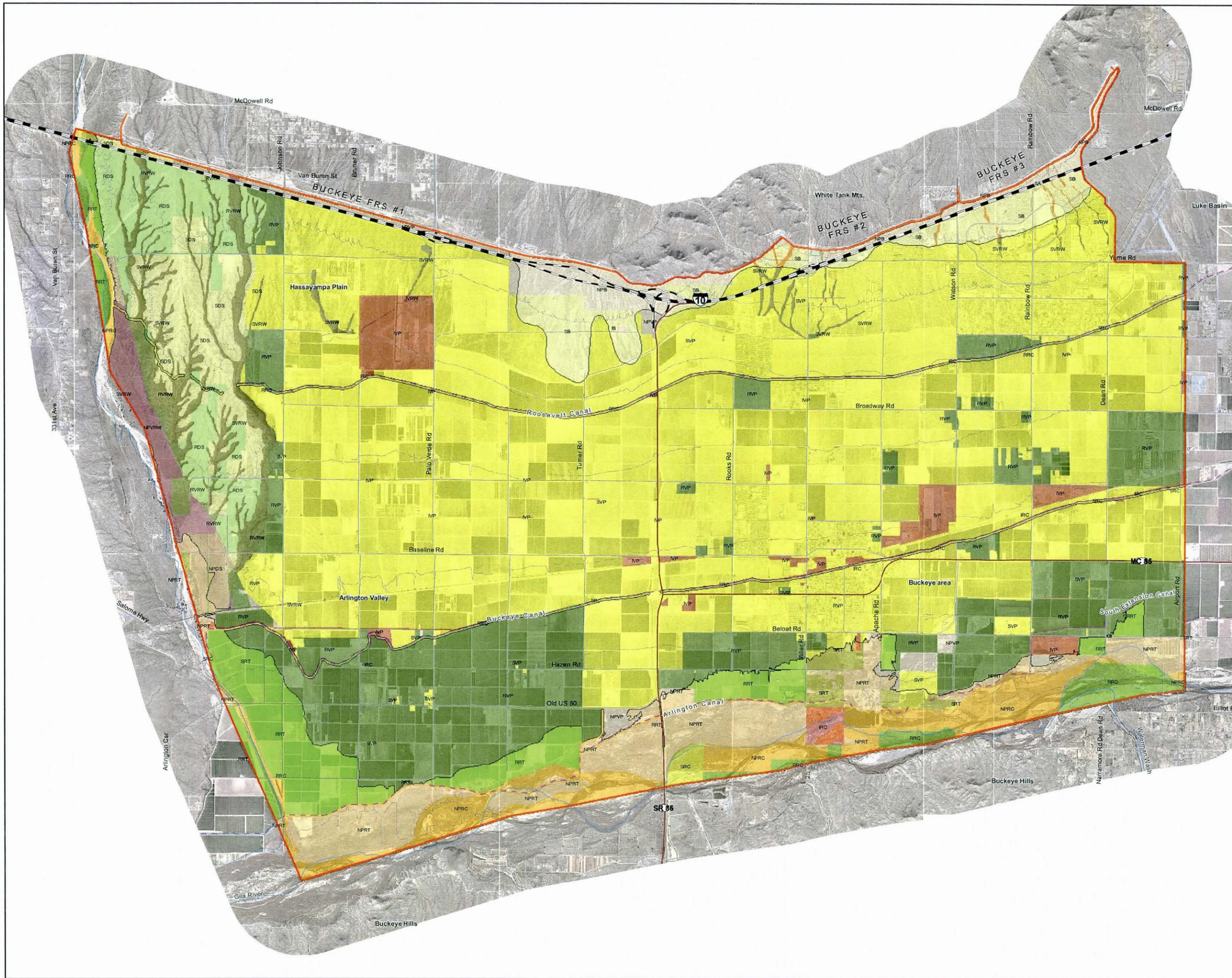
**Table 2.5.1**  
**Existing and Future Sonoran Desert Landscape Character Type**

<b>Sonoran River Lands Subtype</b>	<b>Acreage Existing</b>	<b>Acreage Future</b>	<b>Percent Existing</b>	<b>Percent Future</b>
• Natural and Pastoral River Channel	3,621	2,668	5.52%	4.07%
• Rural River Channel	356	856	0.54%	1.31%
• Suburban River Channel	145	594	0.22%	0.91%
• Industrial River Channel	147	147	0.22%	0.22%
• Natural and Pastoral River Terrace	3,377	3,029	5.15%	4.62%
• Rural River Terrace	2,682	2,749	4.01%	4.19%
• Suburban River Terrace	130	362	0.20%	0.55%
• Industrial River Terrace	111	111	0.17%	0.17%
<b>Total</b>	<b>10,517</b>	<b>10,517</b>	<b>16.03%</b>	<b>16.03%</b>
<b>Sonoran Valley Lands Subtype</b>	<b>Acreage Existing</b>	<b>Acreage Future</b>	<b>Percent Existing</b>	<b>Percent Future</b>
• Natural and Pastoral Valley Plain	5,863	620	8.94%	0.95%
• Rural Valley Plain	32,700	9,354	49.83%	14.26%
• Suburban Valley Plain	6,149	34,756	9.37%	52.97%
• Industrial Valley Plain	1,403	1,385	2.14%	2.11%
• Natural and Pastoral Rivers and Washes	2,121	599	3.23%	0.91%
• Rural Valley Rivers and Washes	343	913	0.52%	1.39%
• Suburban Valley Rivers and Washes	80	1,034	0.12%	1.58%
• Industrial Valley Rivers and Washes	13	11	0.02%	0.02%
• Natural and Pastoral Dissected Slopes	3,248	283	4.95%	0.43%
• Rural Dissected Slopes	286	1,803	0.44%	2.75%
• Suburban Dissected Slopes	173	1,621	0.26%	2.47%
• Industrial Dissected Slopes	1	1	0.00%	0.00%
<b>Total</b>	<b>52,380</b>	<b>52,380</b>	<b>79.83%</b>	<b>79.83%</b>
<b>Sonoran Mountain Lands Subtype</b>	<b>Acreage Existing</b>	<b>Acreage Future</b>	<b>Percent Existing</b>	<b>Percent Future</b>
• Natural and Pastoral Arroyo	43	9	0.07%	0.01%
• Rural Arroyo	-	2	-	0.00%
• Suburban Arroyo	13	45	0.02%	0.07%
• Natural and Pastoral Bajada	2,171	1,065	3.31%	1.62%
• Rural Bajada	24	11	0.04%	0.02%
• Suburban Bajada	466	1,586	0.71%	2.42%
• Industrial Bajada	4	4	0.01%	0.01%
<b>Total</b>	<b>2,721</b>	<b>2,721</b>	<b>4.15%</b>	<b>4.15%</b>

# BUCKEYE AREA DRAINAGE MASTER PLAN

Flood Control District of Maricopa County  
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## FUTURE LANDSCAPE CHARACTER



### SONORAN DESERT CHARACTER TYPE

Sonoran River Lands Subtype			
NPRC	Natural and Pastoral River Channel Unit	NPRT	Natural and Pastoral River Terrace Unit
RRC	Rural River Channel Unit	RRT	Rural River Terrace Unit
SRC	Suburban River Channel Unit	SRT	Suburban River Terrace Unit
IRC	Industrial River Channel Unit	IRT	Industrial River Terrace Unit
Sonoran Valley Lands Subtype			
NPVP	Natural and Pastoral Valley Plain Unit	NPVRW	Natural and Pastoral Valley Rivers & Washes Unit
RVP	Rural Valley Plain Unit	RVRW	Rural Valley Rivers & Washes Unit
SVP	Suburban Valley Plain Unit	SVRW	Suburban Valley Rivers & Washes Unit
IVP	Industrial Valley Plain Unit	IVRW	Industrial Valley Rivers & Washes Unit
NPDS	Natural and Pastoral Dissected Slopes Unit	SDS	Suburban Dissected Slopes Unit
RDS	Rural Dissected Slopes Unit	IDS	Industrial Dissected Slopes Unit
Sonoran Mountain Lands Subtype			
NPA	Natural and Pastoral Arroyo Unit	NPB	Natural and Pastoral Bajada Unit
RA	Rural Arroyo Unit	RB	Rural Bajada Unit
SA	Suburban Arroyo Unit	SB	Suburban Bajada Unit
IB	Industrial Bajada Unit		

### REFERENCE FEATURES

—	Subtype Boundary	—	50 Foot Contours
—	Flood Control Structures	—	Canals
—	Interstate Highways	—	Rivers and Washes
—	State Highways	—	Buckeye ADMP Boundary
—	Major Roads		



Figure 2.5.1

## 2.6 Landscape Variety Classes

The Landscape Variety Classes provide a measure of the overall scenic quality, attractiveness and value of landscapes found within the Buckeye ADMP study area. Landscape Variety Classes are based upon the premise that all landscapes have some scenic value, but those with the most distinctive variety have the greatest potential for high scenic appeal and value. Landscapes with a high degree of diversity typically have the most scenic value, while those with less diversity have less scenic value. Variety classes were separated into four categories including:

- Class A+ – landscapes with extraordinary scenic value
- Class A – landscapes with distinctive scenic value
- Class B – landscapes with common scenic value
- Class C – landscapes with minimal scenic value

In order to capture a more specific degree of scenic value, and in some cases higher values, landscapes within the Buckeye study area were further broken into sub classifications. This included identifying specific positive (+) attributes in the landscape that were evident within the landscape setting, but did not warrant a change in the overall classification (e.g., from Class A to B). The settings within the study area that received an A+ rating were those that have remained in a natural setting and whose geography has been heavily affected by the flow of water. Because of the permanent and intermittent water flows in their natural settings with large stands of native and non-native trees line the channels creates an environment unique to the valley floor and found in very few places within Maricopa County. Portions of the Gila River, Hassayampa River, White Tank Wash at the outfall of the RID Channel and other acres in a natural setting that have been affected by water flows were assigned A+ ratings.



White Tanks Wash as the RID Canal outfall



Gila River Terrace

The Landscape Character Types and Subtypes identified in the District's *Preliminary Existing Landscape Character Assessment for Maricopa County* were utilized as a frame of reference for judging the physical features of landscape areas as having extraordinary, distinctive, common or minimal variety. Features such as landforms, vegetation, waterforms or rock formations were compared singularly or in combination with those commonly found within the Character Type. Using this approach, the variety class rating criteria for the Sonoran Desert Character Type found in the USDA Forest Service publication titled *Landscape Character Types for the National Forests in Arizona and New Mexico* was modified and adapted for use in the Buckeye ADMP study area as shown in the table below. See **Table 2.6.1** for further description of the Landscape Variety Classes.

**Table 2.6.1  
 SONORAN DESERT CHARACTER TYPE VARIETY CLASS RATING CRITERIA**

	<b>Landform</b>	<b>Vegetation</b>	<b>Waterform</b>	<b>Cultural Forms</b>
<b>Variety Class A+</b>	River valleys with natural appearing waterways, sandbars and water eroded sideslopes.	Vegetation is dense and varied with large stands of native and non native riparian species, including Cottonwood, Sycamore, Mesquite and Tamarisk trees with intermittent wetlands.	Perennial Waters including a permanent water source with perennial flows.	Cultural Forms are moderately varied  Acres with cultural features that offer some positive variety in form, color or texture.
<b>Variety Class A – Distinctive</b>	Distinctive or highly varied topography includes craggy mountain peaks, sharp ridges, well defined foothills, bajadas, and interior mountain valleys.  Isolated mountains, inselbergs, buttes, foothills, and rock formations with distinctive for or color contrast that become focal points.  Deep gorges, ravines, or valleys with vertical or nearly vertical walls and/or unusual forms and color.  Escarpments, cliffs, talus slopes, and other forms that dominate the surrounding landscape because of their scale, form, color or texture.	Distinctive vegetation forms or highly varied vegetation patterns.  Native cottonwood galleries and other riparian deciduous forests that exhibit the normal range of sizes, forms, species, colors, textures, edges and patterns.  Areas with saguaro or paloverde-mixed cacti plant communities  Mesquite bosques and/or other mesophytic riparian hardwood stands that form distinctive linear patterns along dry washes and arroyos.  Extra large or otherwise unique stands of vegetations.	Natural and manmade lakes and reservoirs.  Primary and secondary river channels and terraces including for example, the Hassayampa, Verde, Agua Fria, Gila, Salt, New River, Cave Creek, Queen Creek and many others.  Arroyos and washes in the mountain lands and valley plains that contain sandy bottoms that are at least 8 feet wide  Hot springs and/or geothermal vents.	Architectural features with distinctive or unusual form, color, texture, materials, or scale that establishes a unique sense of place and positive variety in the landscape.  Cultural features identified as having historical significance.
<b>Variety Class B – Common</b>	Terrain is moderately varied.  Mountains and ridges that are surrounded by similar landforms and are not otherwise distinctive.  Rock formations, foothills, and other landforms that remain subordinate to the surrounding landscape due to their size.  Bajadas, volcanic fields, and upland areas with rolling topography that are not well defined by adjacent landforms.	Vegetation is moderately varied.  Paloverde-mixed cacti plant communities that exhibit sub-normal range of sizes, forms, colors, textures, and spacing.  Creosote bush-bursage desert scrub combined in moderately defined patterns with desert pavement and/or rockland and/or mesophytic woodland.  Creosote bush-bursage desert scrub combined with riparian deciduous woodland in patterns that offer some visual variety	Waters are moderately varied.  Includes small arroyos and dry washes not otherwise identified.	Cultural forms are moderately varied.  Acres with cultural features that offer some positive variety in form, color or texture.
<b>Variety Class C – Minimal</b>	Terrain is unvaried.  Flat or nearly flat valley floors and plains.	Vegetation is unvaried.  Extensive areas of similar vegetation such as creosote bush-bursage that have very limited variation in form, color, texture, or pattern.	Waters are absent.	Cultural forms are absent or unvaried.  Extensive areas of cultural features that offer little variation in form, color or texture.

**Table 2.6.1** above displays a summary of the predominant variety classes that are expected to occur within the Landscape Physical Divisions of the Subtypes of the Sonoran Desert Character Type. The range of other ratings that may occur to a lesser degree are indicated in **Table 2.6.2** below. The Variety Class markers in the table below with a 'X' indicates predominate occurrence while a '(X)' indicates those that are more infrequent. These ratings were developed from application of the Sonoran Desert Character Type Variety Class Rating Criteria.

**Table 2.6.2**  
**Predominant Variety Class Ratings for the Physical**  
**Divisions of the Sonoran Desert Character Type**

Landscape Character Units of the Sonoran Desert Character Type	Landscape Variety Classes			
	A+	A	B	C
<b>River Channel</b>				
Natural and Pastoral River Channel (Natural)	X	(X)		
Natural and Pastoral River Channel (Man-Made)		(X)	(X)	X
Rural River Channel (Natural)		X		
Rural River Channel (Man-Made)		(X)	(X)	X
Suburban River Channel (Natural)		X		
Suburban River Channel (Man-Made)		(X)	(X)	X
Industrial River Channel (Natural)		X		
Industrial River Channel (Man-Made)		(X)	(X)	X
<b>River Terrace</b>				
Natural and Pastoral River Terrace	X	(X)		
Rural River Terrace		X	(X)	
Suburban River Terrace		X	(X)	
Industrial River Terrace		X	(X)	
<b>Valley Rivers &amp; Washes</b>				
Natural and Pastoral Valley Rivers & Washes	X	(X)		
Rural Valley Rivers & Washes		X		
Suburban Valley Rivers & Washes		X		
Industrial Valley Rivers & Washes		X		
<b>Dissected Slopes</b>				
Natural and Pastoral Dissected Slopes	X	(X)		
Rural Dissected Slopes		X		
Suburban Dissected Slopes		X		
Industrial Dissected Slopes		X		
<b>Valley Plains</b>				
Natural and Pastoral Valley Plains		(X)	(X)	X
Rural Valley Plains		(X)	(X)	X
Suburban Valley Plains		(X)	(X)	X
Industrial Valley Plains		(X)	(X)	X
<b>Arroyo</b>				
Natural and Pastoral Arroyo	X	(X)		
Rural Arroyo		X		
Suburban Arroyo		X		
Industrial Arroyo		X		
<b>Bajada</b>				
Natural and Pastoral Bajada		X	(X)	
Rural Bajada		X	(X)	
Suburban Bajada		X	(X)	
Industrial Bajada		X	(X)	

For the purpose of this study, the four Variety Classes; A+, A, B and C have been labeled Extraordinary Variety, Distinctive Variety, Moderate Variety and Minimal Variety

respectively. Within the Buckeye ADMP study area there exists only three Variety Classes; Extraordinary Variety, Distinctive Variety and Minimal Variety. The distribution of these Variety Classes are shown on the map in **Figure 2.6.1**, and is distributed as follows:

Extraordinary Variety	-- 12,303 acres
Distinctive Variety	-- 6,625 acres
Minimal Variety	-- 46,690 acres
<b>TOTAL</b>	<b>-- 65,618 acres</b>

**BUCKEYE AREA  
DRAINAGE MASTER PLAN**

Flood Control District of Maricopa County  
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**LANDSCAPE VARIETY CLASSES**

-  Extraordinary Variety
-  Distinctive Variety
-  Minimal Variety

**REFERENCE FEATURES**

-  Subtype Boundary
-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary

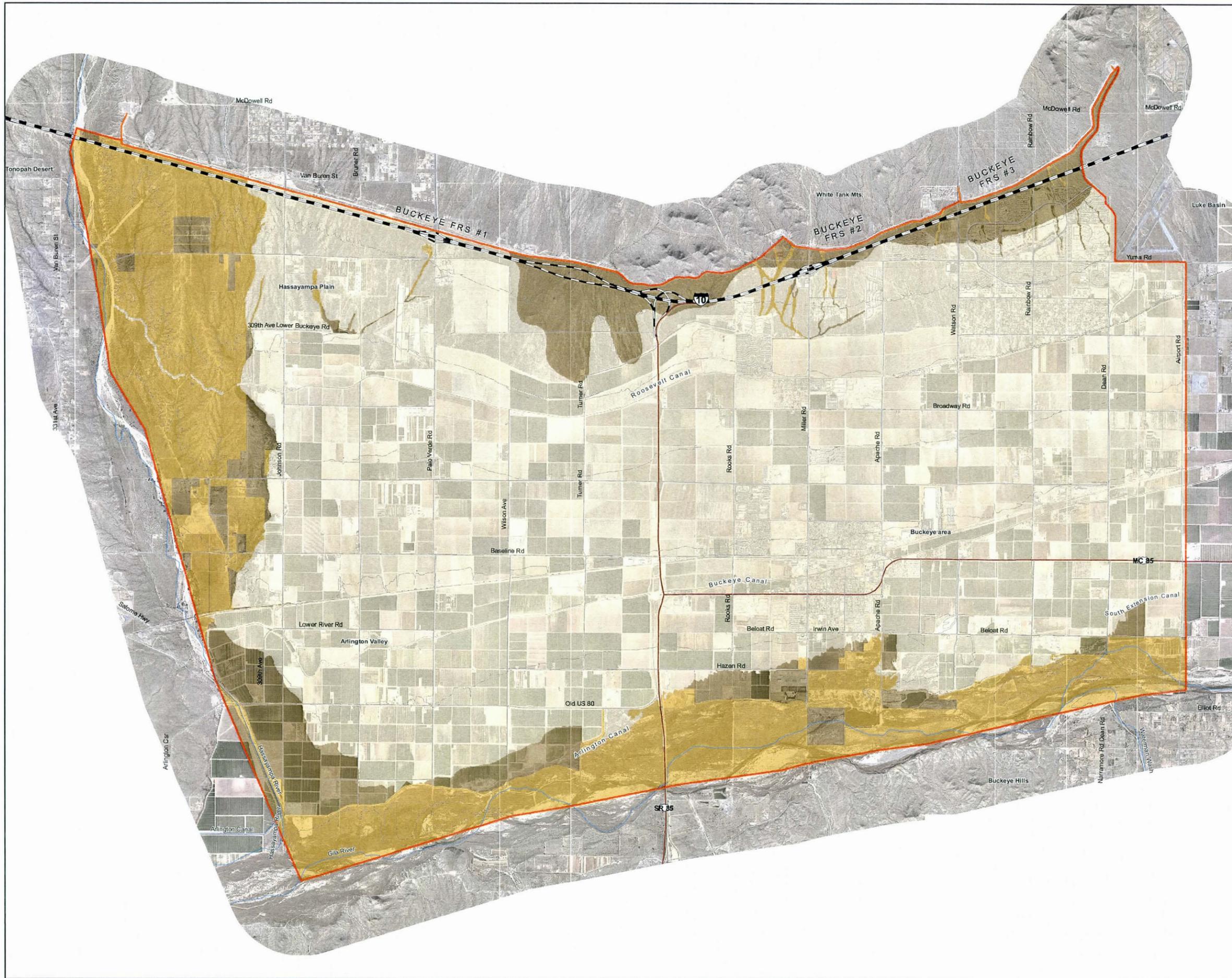


Figure 2.6.1

## 2.7 Visual Sensitivity Levels

Visual Sensitivity Levels provide a measure of people's concern for the visual character and beauty of landscapes within the Buckeye ADMP study area. Visual Sensitivity Levels take into account the number and types of viewers; their concern for the visual environment; and the relative visibility of landscape areas within the Buckeye ADMP study area.

It is recognized that most of the Buckeye ADMP study area is predominantly a large panoramic feature landscape that characteristically affords mostly unobstructed view of valley floors, rivers and isolated mountain ranges. It is further recognized that virtually all of the Buckeye ADMP Study Area is visible at least by aircraft users. Therefore, some degree of visual sensitivity exists for the entire land base of the study area. The Visual Sensitivity Levels Map is shown in **Figure 2.7.1**.

There are three Visual Sensitivity Levels. Each level identifies a different level of user concern for the visual environment.

- Level 1 – Highest Sensitivity
- Level 2 – Average Sensitivity
- Level 3 – Lowest Sensitivity

The Sensitivity levels are further stratified into viewing distance zones during the process of visibility mapping. The viewing distance zones include the following:

<b>Viewing Distance Zone</b>	<b>Near Boundary</b>	<b>Far Boundary</b>
Foreground	0 miles	¼ mile
Middleground	¼ mile	3 miles
Background	3 miles	Infinity

Viewer concern for the visual environment is expressed as either major or minor. Viewers with major concern typically include people who are living in the study area, driving for pleasure, viewing scenery, hiking trails or engaged in recreation activities in which the quality of the visual environment is an essential component of their experience. Viewers that may have either a major or minor concern for landscape aesthetics are people traveling through the area for commercial purposes or daily commuter travel. There are three viewer concern levels based upon the degree to which viewers with Major concerns are estimated to be represented in each Travelways category on average daily:

- High            75% or more viewers have Major concerns for the visual environment
- Moderate      25.75% of Viewers have Major concerns for the visual environment
- Low             ≥ 25% of viewers have Major concerns for the visual environment

The inventory of Travelways in the Buckeye ADMP Study Area was developed as a part of an earlier county-wide inventory to serve as a basis for establishment and mapping of Visual Sensitivity Levels for travel routes within the county and the study area. The Travelways inventory was utilized as the resource data for the Buckeye ADMP LRIA Report. Travelways is defined, for the purpose of this study as both roadways and the Maricopa Regional Trail System data. The travelways map does not include railway lines nor does it include aircraft take off and landing flight paths from airports within or nearby the study area.

Travel routes in the inventory were categorized as being of either primary or secondary importance within the study area based upon their general roadway type and levels of use. These designations were based upon an interpretation of the criteria outlined in the publication titled *National Forest Landscape Management Volume 2, Chapter 1, The Visual Management System, Agriculture Handbook Number 462, USDA Forest Service, April, 1974.*

Primary travel routes typically include roads and trails having national, statewide or regional importance, high use levels and long use duration. Secondary travel routes typically include roads and trails having local significance, low use volume and/or short use duration.

Visual Sensitivity Levels were identified for each Travelways in the inventory using the Summary Table for Visual Sensitivity Levels shown in **Table 2.7.1** below, which was excerpted from Agriculture Handbook 462.

**Table 2.7.1**  
**Summary Table for Visual Sensitivity Levels**

Importance/Use Level	Sensitivity Level		
	1	2	3
<b>Primary Travelway</b>	At least 25% of users have Major concerns for scenic resources	Less than 25% of users have Major concerns for scenic resources	
<b>Secondary Travelway</b>	At least 75% of users have Major concerns for scenic resources	25-75% of users have Major concerns for scenic resources	Less than 25% of users have Major concerns for scenic resources

The Viewer Concern Levels and Visual Sensibility Level ratings that have been identified for travelways in the Buckeye ADMP Study Area are shown in **Table 2.7.1**. These ratings reflect the viewer concern levels and visual sensitivity levels that are most typical, prevalent or expected within Maricopa County. Exceptions can and do occur (see note attached to table). More detailed assessments and refinements of sensitivity levels may be undertaken during study scenic resource assessments.

**Table 2.7.2**  
**Visual Sensitivity Levels Ratings for Travelways**  
**in the Buckeye ADMP Study Area**

Travelway Importance	Viewer Concern Levels for Aesthetics			Visual Sensitivity Level		
	High	Moderate	Low	1	2	3
<b>Primary</b>						
<b>Roads</b>						
Interstate Highway		*		*		
Freeway		*		*		
State Highway		*		*		
Other Divided Highway		*		*		
Arterial Streets (paved)	* /1			* /1		
Arterial Streets (unpaved)	* /1			* /1		
Scenic Route	*			*		
<b>Trails</b>						
Maricopa Regional Trail	*			*		
System						
<b>Secondary</b>						
<b>Roads</b>						
Collector Streets	* /1			* /1		
All other Streets and Roads			*			*
Scenic Route	*			*		
<b>Trails</b>						
All other Trails	*			*		

/1 Exceptions to Sensitivity Levels Ratings: Arterial and Collector streets located within Industrial Landscape Character Cultural Settings usually have low viewer concern levels and are typically rated as Visual Sensitivity Level 3.

The Visual Sensitivity Levels map for the Buckeye ADMP Study Area was prepared by buffering all of the Primary travelways and the Collector streets in the Secondary category in GIS. The buffering was done at ¼ mile and 3 miles distance from each of the aforementioned travelways to represent the Foreground, Middleground and Background viewing distance zones.

The approach taken in the mapping assumes that virtually all landscape areas in the Buckeye ADMP Study Area are visible from Travelways classified as Visual Sensitivity Levels 1. For this reason, Travelways classified as Visual Sensitivity Level 2 and Level 3 in the Buckeye Study Area were not mapped as a part of this study.

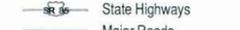
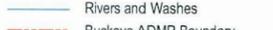
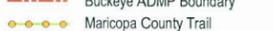
# BUCKEYE AREA DRAINAGE MASTER PLAN

Flood Control District of Maricopa County  
June 2007

## VISUAL SENSITIVITY LEVELS

-  Foreground Sensitivity Level 1
-  Middleground Sensitivity Level 1

### REFERENCE FEATURES

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  Scenic Route
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary
-  Maricopa County Trail



0 0.25 0.5 1 1.5 2 Miles



Figure 2.7.1

## 2.8 Scenic Integrity

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 throughout the Buckeye ADMP Study Area. Scenic integrity classes fall 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

It should be noted that lower scenic integrity does not necessarily imply less overall value. However, it likely represents landscapes where there is opportunity to improve the scenic integrity through future management and design decisions. **Table 2.8.1** below depicts the relationship between Scenic Integrity Classes and Landscape Character. The methodology used in the creation of Scenic Integrity Classes suggests that all Landscape Character Units have either a high or a low Scenic Integrity based on the state of urban development within that area. Within the Buckeye Study Area those Landscape Character Units that have either a Natural and Pastoral or Rural Cultural Setting have been given a high Scenic Integrity Class while those that are of an Industrial or Suburban Cultural Setting have been given a low Scenic Integrity Class. The presumption is that historically, the Buckeye Area has been dominated by Natural and/or Rural Landscape Character and that the introduction of another cultural setting would inherently change the Scenic Integrity for the worse. In addition to the consideration of Landscape Character for Scenic Integrity Classes, this process also took into consideration large elements of the county's infrastructure that are located within the study area. Specifically, in this case there exists very large electrical transmission lines traverse the study area and are considered highly discordant features. As a result this study has applied a 500 foot buffer to the location of these electrical transmission lines and which will subsequently decrease the Scenic Integrity of all areas that fall within this buffered area. These areas are visually impacted and an introduction of FCD facilities will not impose further visual detracting in most cases.

Scenic integrity affects the choice of Flood Control Method through the process of quantifying completeness and aesthetic appeal of a landscape. The categories of high, moderate and low scenic integrity when combined with the various levels created in landscape character, Variety Class and Visual Sensitivity level will translate into an

appropriate flood control alternative. The above mentioned classifications are graphically represented in **Figure 2.8.1**.

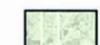
**Table 2.8.1**

<b>Scenic Integrity</b>			
	<b>Integrity Level</b>		
	<b>High</b>	<b>Moderate</b>	<b>Low</b>
<b>River Lands</b>			
<i>River Channel</i>			
Natural and Pastoral River Channel	X Natural		(X) Man-Made
Rural River Channel	X Natural		(X) Man-Made
Suburban River Channel			X
Industrial River Channel			X
<i>River Terrace</i>			
Natural and Pastoral River Terrace	X		
Rural River Terrace		X	
Suburban River Terrace			X
Industrial River Terrace			X
<b>Valley Lands</b>			
<i>Valley Plains</i>			
Natural and Pastoral Valley Plains	X		
Rural Valley Plains		X	
Suburban Valley Plains			X
Industrial Valley Plains			X
<i>Valley Rivers &amp; Washes</i>			
Natural and Pastoral Valley Rivers & Washes	X		
Rural Valley Rivers & Washes	X		
Suburban Valley Rivers & Washes			X
Industrial Valley Rivers & Washes			X
<i>Dissected Slopes</i>			
Natural and Pastoral Dissected Slopes	X		
Rural Dissected Slopes	X		
Suburban Dissected Slopes			X
Industrial Dissected Slopes			X
<b>Mountain Lands</b>			
<i>Arroyo</i>			
Natural and Pastoral Arroyo	X		
Rural Arroyo	X		
Suburban Arroyo			X
Industrial Arroyo			X
<i>Bajada</i>			
Natural and Pastoral Bajada	X		
Rural Bajada	X		
Suburban Bajada			X
Industrial Bajada			X

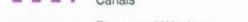
**BUCKEYE AREA  
DRAINAGE MASTER PLAN**

Flood Control District of Maricopa County  
June 2007

**SCENIC INTEGRITY CLASSES**

-  High Scenic Integrity
-  Moderate Scenic Integrity
-  Low Scenic Integrity

**REFERENCE FEATURES**

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary

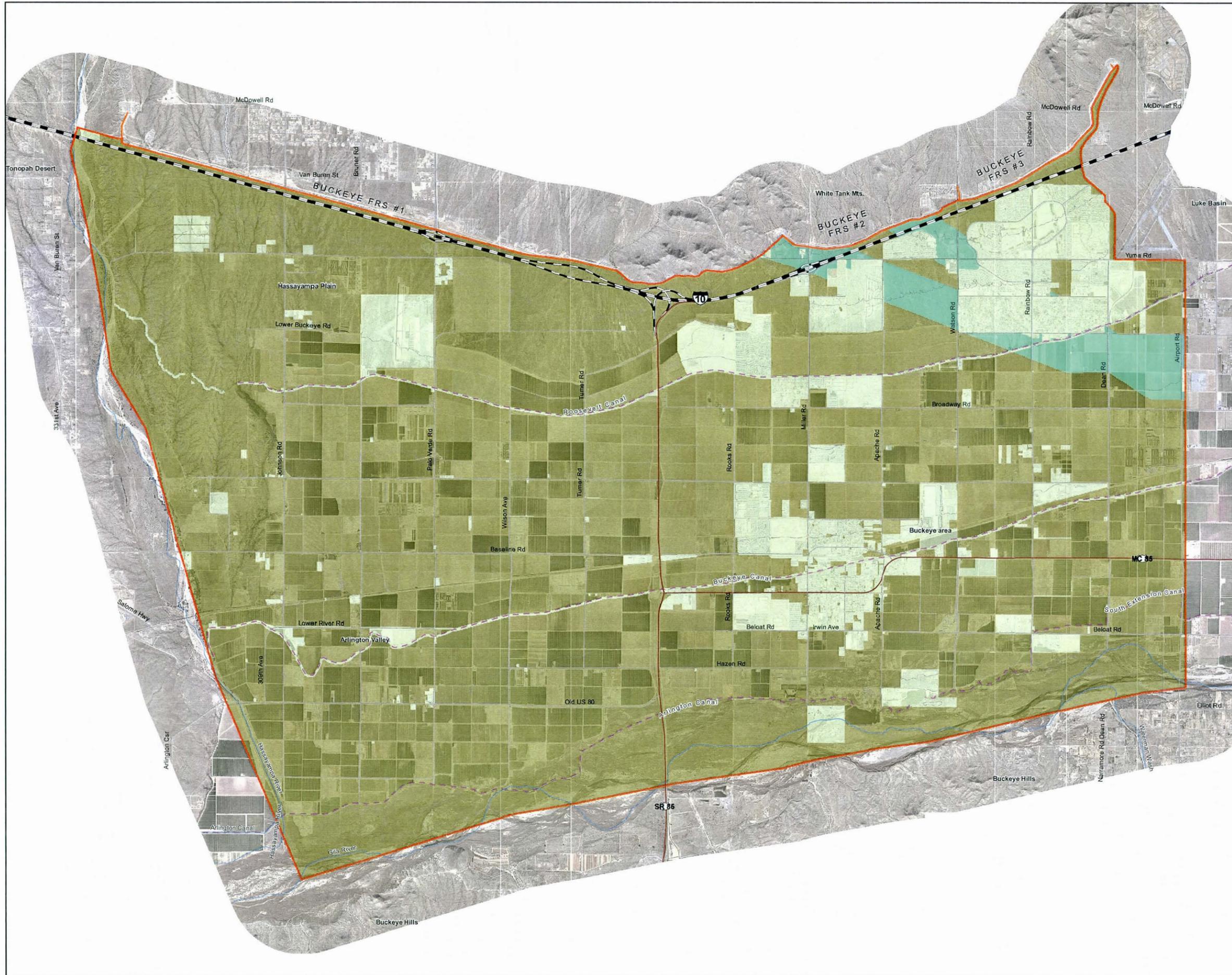


Figure 2.8.1

## **CHAPTER 3 – Resource Compatibility Analysis**

Resource Compatibility Analysis is the method by which the Flood Control District can assess the appropriate flood protection method applied when delivering flood protection Flood Protection Methods. The Scenery Resource analysis elements that were used to assess appropriate include: Existing Landscape Character Compatibility, Future Landscape Character Compatibility, Landscape Variety Class and Visual Sensitivity Levels. These elements combined together illustrate the process and method of composite mapping. The combination of all of these elements are useful in determining the appropriate flood control method that meet the goals and objectives stated in the beginning of this document and reiterated below.

- Fully integrate the District's aesthetic and landscape design principles into the design of flood protection facilities to be constructed within the Buckeye study area
- Preserve and enhance the valued local landscape character, through emphasizing unique natural and cultural features within the study area
- Incorporate recreational opportunities, including passive and active into solutions
- Incorporate Biological objective into solutions
- Incorporate Cultural objective into solutions

### **3.1 Flood Protection Methods**

Listed below are six different flood protection methods that are commonly implemented by the District to deliver flood protection services and facilities to the citizens of Maricopa County. The flood protection methods include both non-structural (regulatory) and structural methods. The structural methods typically include construction of large scale conveyance channels, storage basins, flood retarding structures and dams. The following is a brief description of the six flood protection methods with each methods becoming more visually apparent and, potentially, discordant and dominant.

#### **Non-Structural Method**

The non-structural method of flood protection employs the use of regulatory mechanisms such as erosion setback zones and zoning regulations as a mechanism for providing flood protection. This method is characterized by an absence of structural elements or features for flood protection. Exceptions may include provisions of low standard road facilities for carrying out flood control 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 flood water 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. (District 2006)



Agua Fria River

### **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 earth 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 either 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



Wildfire Golf Course Conveyance Channel

### **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 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.



Wildfire Golf Course Channel

### **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 or 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 and adequate landscape setback to enable these structures to visually blend with and complement adjacent land use areas. This method has a large potential for being viewed

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



Cherry Creek Plan

### **Semi Hard Structural Method without Aesthetic Treatment**

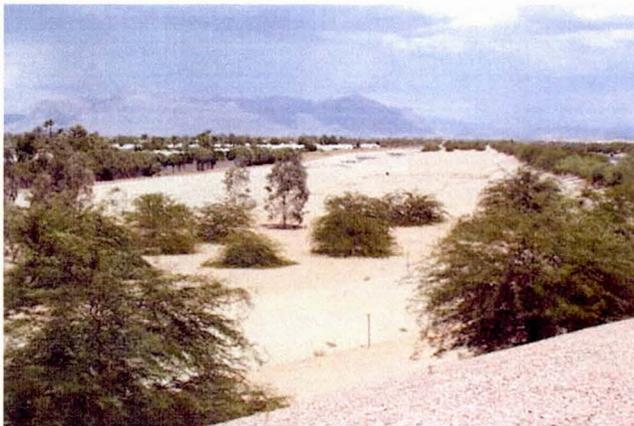
The semi-hard structural method includes construction of large scale flood control structures constructed predominantly with earthen materials. These structures typically employ standard civil engineering design practices without inclusion of landscape architectural design or aesthetic features. The superstructure typically contains a geometric form, with uniform side slopes, bottom (invert) and overbank 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.



McMicken Dam

### **Hard Structural Method**

The hard structural method includes the construction of heavily armored concrete structures and component facilities without the inclusion of aesthetic treatment measures. These facilities are characteristically large-scale facilities with an overall geometric and straight form, uniform side slopes, bottom and over-bank areas. The hard structural method incorporates vegetation planting of over-bank areas on to the extent required for erosion control, dust control, or meeting USACE 404 permitting requirements. Except for industrial landscapes and perhaps some agricultural landscapes, this method has limited ability to complement the visual character of the landscape settings of Maricopa County. The segment of the District's White Tank 4 inlet channel located near Interstate 10 and the segment of the Old Cross Cut Canal Channel located south of McDowell Road are representative of the hard structural flood protection method.



ADOT basin near Sossaman

### **3.2 Compatibility Ratings**

Landscape Compatibility Ratings provide an indication of the range of flood protection methods that are expected to be compatible with the Landscape Character, Variety Class Ratings, and Visual Sensitivity Levels Ratings identified in the Scenery Resource Analysis. Compatibility ratings were established for the six different flood protection methods that are routinely implemented by the District in delivering flood protection services and facilities to the citizens of Maricopa County. The six flood protection methods include:

Flood Protection Method	Impact Potential	Compatibility Class
Non-Structural	Least  Most	1
Soft Structural		2
Semi-Soft Structural		3
Hard Structural with Aesthetic Treatments		4
Semi-Hard Structural		5
Hard Structural		6

The above flood protection methods are arrayed as a spectrum, wherein each successive method has an increasing potential for greater impacts to the visual environment. Under this arrangement, for example, areas identified as being compatible with the Semi-Soft Structural Method (Compatibility Class 3) also would be compatible with the Soft Structural and Non-Structural methods as well. Likewise Landscape Units identified as being compatible with the Hard Structural methods also would be compatible with all of the other five methods. Hence, each compatibility class represents a range of flood protection methods that would be compatible with the Visual Character of a given area.

The flood protection methods and compatibility classes are described in greater detail in a District Technical Paper titled *Assessing the Relative Ability of Flood Protection Methods to Achieve Compatibility with the Visual Character of Landscape Settings in Maricopa County, A Proposed Framework for Application to Flood Control District Planning Studies*. (December, 2004, Dennis B. Holcomb, ASLA, Landscape Architecture Program Director, Flood Control District of Maricopa County.)

### 3.3 Existing Landscape Character Compatibility

Each of the above flood protection methods were evaluated for their compatibility with the Landscape Character Units in the Buckeye ADMP Study Area and each method is rated as either compatible or incompatible based upon the visual character reflected by each of the units. The compatibility ratings and resulting compatibility classes are shown in **Table 3.3.1** below. The ratings reflect typical Flood Control District applications of the flood protection methods. Incompatible ratings may, in some instances, be overcome through the application of special or extraordinary treatments and designs as noted in the notes at the bottom of **Table 3.3.1**.

<b>Table 3.2 Landscape Character Compatibility Classes Matrix</b>						
<b>Landscape Character Units</b>	<b>Flood Protection Method</b>					
	Non-Structural	Soft Structural	Semi-Soft Structural	Hard Structural w/ Aesthetic Treatment	Semi-Hard Structural	Hard Structural
<b>Sonoran Desert Landscape Character Type Units</b>						
Natural and Pastoral Arroyos <sup>x</sup>	C	IC	IC	IC	IC	IC
Natural and Pastoral Valley River & Washes <sup>x</sup>	C	IC	IC	IC	IC	IC
Natural and Pastoral Dissected Slopes	C	IC	IC	IC	IC	IC
Rural Valley River & Washes <sup>x</sup>	C	IC	IC	IC	IC	IC
Rural Dissected Slopes <sup>x</sup>	C	IC	IC	IC	IC	IC
Suburban Arroyo <sup>x</sup>	C	IC	IC	IC	IC	IC
Suburban River & Washes <sup>x</sup>	C	IC	IC	IC	IC	IC
Suburban Dissected Slopes <sup>x</sup>	C	IC	IC	IC	IC	IC
Industrial River & Washes <sup>x</sup>	C	IC	IC	IC	IC	IC
Industrial Dissected Slopes	C	IC	IC	IC	IC	IC
Natural and Pastoral Bajada	C	C	C	IC	IC	IC
Natural and Pastoral Valley Plain	C	C	C	IC	IC	IC
Natural and Pastoral River Terrace	C	C	C	IC	IC	IC
Natural and Pastoral River Channel	C	C~	C~	IC	IC	IC
Rural Bajada	C	C	C	IC	IC	IC
Rural Valley Plain	C	C	C	IC	IC	IC
Rural River Terrace	C	C	C	IC	IC	IC
Rural River Channel	C	C~	C~	IC	IC	IC
Suburban Bajada	C	C	C	IC	IC	IC
Suburban Valley Plain	C	C	C	IC	IC	IC
Suburban River Terrace	C	C	C	IC	IC	IC
Suburban River Channel	C	C~	C~	IC	IC	IC
Industrial River Terrace	C*	C*	C*	IC	IC	IC
Industrial River Channel	C*	C*~	C*~	IC	IC	IC
Industrial Valley Plain	C*	C*	C*	C	C	C^
Industrial Bajada	C*	C*	C*	C	C	C^
	<b>Class 1</b>	<b>Class 2</b>	<b>Class 3</b>	<b>Class 4</b>	<b>Class 5</b>	<b>Class 6</b>

Compatibility Levels
C = Complimentary or Compatible
IC = Not Complimentary or Incompatible

* Also achieves compatibility through the introduction of positive visual variety that enhances the character of the landscape setting.
~ Not compatible with Flood Retarding Structures.
^ Hard Structures are incompatible when adjacent to or visible from an adjacent landscape character unit that is incompatible with a Hard Structure or when within an industrial park.
<sup>x</sup> Scale of feature greatly reduces ability to maintain character when a regionally scaled facility is located within this landscape character.

The matrix contained in **Table 3.3.1** was applied to the Existing Landscape Character delineations for the Buckeye ADMP Study Area as shown in **Figure 3.3.1**. Within a GIS database each Existing Landscape Character Unit was assigned the corresponding FPM Compatibility Class. The approximate areas occupied by each of the Compatibility Classes are listed below:

Existing Landscape Character Units Compatibility Class Area Summary

<b>Compatibility Class</b>	<b>Acres</b>	<b>Percent of Study Area</b>
<b>Class 1</b>	6,321	9.63%
<b>Class 3</b>	57,890	88.22%
<b>Class 6</b>	1,407	2.14%
<b>Total</b>	<b>65,618</b>	<b>100.00%</b>

The majority of the Buckeye ADMP Study Area is designated Compatibility Class 3. This designation is compatible with the non-structural, soft-structural, or a semi-soft structural flood protection method.

The Compatibility Class 3 rating in the Bajada, Valley Plain, River Channel and River Terrace units are due to the predominately natural and rural visual character of these lands within the Buckeye ADMP Study Area. The suburban and rural development that has occurred in the area is complimented by the natural forms of the Compatibility Class 3 methods while being able to visually absorb the limited hard structures associated with this method.

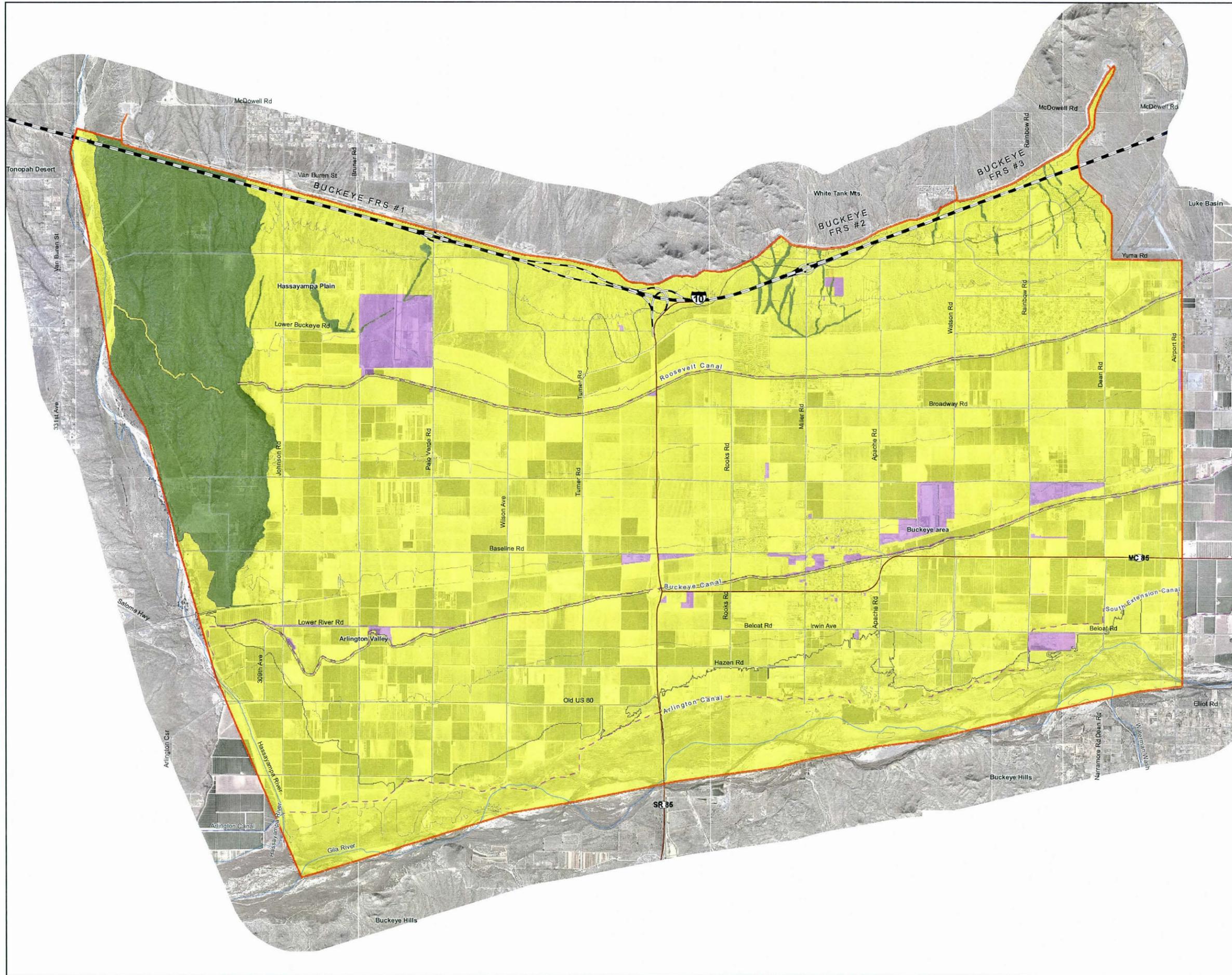
The Compatibility Class 1 is made up of the Arroyo, River & Washes, and Dissected Slope physical division which due to their character require a more sensitive flood protection method. This is due to their inherent higher visual quality, and the difficulty of complimenting the visual character of these areas using any flood protection methods other than Non-Structural.

The Compatibility Class 6 is limited to the Industrial Valley Plain and the Industrial Bajada Landscape Character Units. The Compatibility Class 6 designation means that these areas are compatible with any and all of the six flood protection methods. This is based on the landscape being highly modified from its natural state. More natural methods also are visually compatible with the industrial landscape in that they introduce positive visual variety into the landscape.

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**EXISTING LANDSCAPE CHARACTER  
FLOOD PROTECTION METHODS  
COMPATIBILITY**



- Compatibility Class 1
- Compatibility Class 3
- Compatibility Class 6

- REFERENCE FEATURES**
- Subtype Boundary
  - Flood Control Structures
  - Interstate Highways
  - State Highways
  - Major Roads
  - Canals
  - Rivers and Washes
  - Buckeye ADMP Boundary
  - 50 Foot Contours



Figure 3.3.1

### 3.4 Future Landscape Character Compatibility

Each of the aforementioned flood protection methods were evaluated for their compatibility with the Future Landscape Character Units predicted for the Buckeye ADMP Study Area and each method was rated as either compatible or incompatible based upon the visual character reflected by each of the units. The compatibility ratings and resulting compatibility classes are identical to those shown in **Table 3.3.1**. The ratings reflect typical Flood Control District applications of the flood protection methods. Incompatible ratings may, in some instances, be overcome through the application of special or extraordinary treatments and designs as noted in the notes for **Table 3.4.1**.

The matrix contained in **Table 3.3.1** was applied to the Future Landscape Character delineations for the Buckeye ADMP Study Area as shown in **Figure 3.4.1**. Within a GIS database each F was assigned the corresponding FPM Compatibility Class. The approximate areas occupied by each of the Compatibility Classes are listed below:

Future Landscape Character Units Compatibility Class Area Summary

Compatibility Class	Acres	Percent of Study Area
Class 1	6,321	9.63%
Class 3	57,908	88.25%
Class 6	1,388	2.12%
<b>Total</b>	<b>65,618</b>	<b>100.00%</b>

The majority of the Buckeye ADMP Study Area is designated Compatibility Class 3. This designation is compatible with the non-structural, soft-structural, or a semi-soft structural flood protection method.

The Compatibility Class 3 rating in the Bajada, Valley Plain, River Channel and River Terrace units are due to the predominately natural and rural visual character of these lands within the Buckeye ADMP Study Area. The suburban and rural development that has occurred in the area is complimented by the natural forms of the Compatibility Class 3 methods while being able to visually absorb the limited hard structures associated with this method.

The Compatibility Class 1 is made up of the Arroyo, River & Washes, and Dissected Slope Units which due to their nature require a more sensitive flood protection method. This is due to their inherent higher visual quality, and the difficulty of complimenting the visual character of these areas using flood protection methods other than Non-Structural.

The Compatibility Class 6 is limited to the Industrial Valley Plain and the Industrial Bajada Landscape Character Units. The Compatibility Class 6 designation means that these areas are compatible with any and all of the six flood protection methods. This is based on the landscape being highly modified from its natural state. More natural methods also are visually compatible with the industrial landscape in that they introduce positive visual variety into the landscape.

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**FUTURE LANDSCAPE CHARACTER  
FLOOD PROTECTION METHODS  
COMPATIBILITY**

- Compatibility Class 1
- Compatibility Class 3
- Compatibility Class 6

**REFERENCE FEATURES**

- Subtype Boundary
- Flood Control Structures
- Interstate Highways
- State Highways
- Major Roads
- 50 Foot Contours
- Canals
- Rivers and Washes
- Buckeye ADMP Boundary

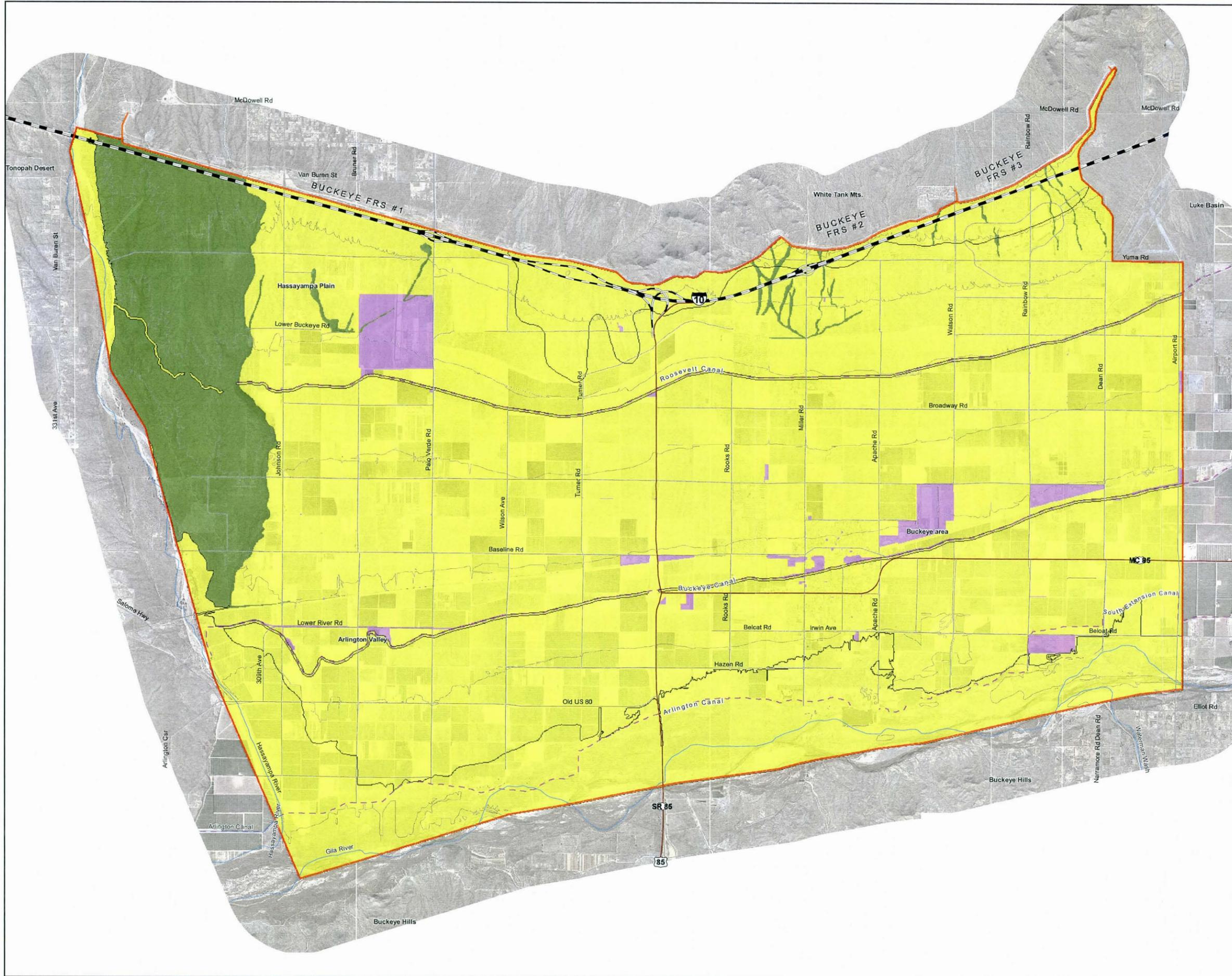


Figure 3.4.1

### **3.5 Landscape Variety Class Compatibility**

Landscape Variety Classes are based upon the premise that all landscapes have some scenic value, but those with the most distinctive variety have the greatest potential for high scenic appeal and value.

Variety Class A+ landscape include areas containing landforms, vegetation, rock formations, waterforms, cultural features or combinations thereof with extraordinary or unusual variety. They are usually not common within those parts of the Sonoran Desert Character type. Variety Class A+ may include landscape features that are unique to the character type and contribute significantly to its identity and unique sense of place. They include features that are recognized nationally or internationally and those that are protected under Arizona State laws or local ordinances. Examples of the latter include areas containing perennial waterflow, as well as riparian habitat with protected native plant species as well as lush stands of non-native species and historically significant cultural features found in Maricopa County.

Variety Class A landscape include areas containing landforms, vegetation, rock formations, waterforms, cultural features or combinations thereof with distinctive or unusual variety. They are usually not common within those parts of the Sonoran Desert Character type. Variety Class A may include landscape features that are unique to the character type and contribute significantly to its identity and unique sense of place. They include features that are recognized nationally or internationally and those that are protected under Arizona State laws or local ordinances. Examples of the latter include areas containing Saguaro (the signature plant of the Sonoran Desert), other protected native plant species and historically significant cultural features found in Maricopa County.

Variety Class B landscapes include areas with features that contain variety in their form, line, color, texture, scale or combinations thereof but which tend to be common throughout the character type and are not outstanding in scenic quality. Variety Class C landscapes include areas with features that have minimal changes in form, line, color and texture, and includes all areas not found under Classes A and B.

Please refer to the Landscape Variety Class Compatibility Map (**Figure 3.5.1**) for Maricopa County for additional information about landscape variety classes and how they were developed.

Variety Class compatibility ratings provide an indication of the range of flood protection methods that are expected to be compatible with the variety class ratings shown on the Landscape Variety Classes Map for the Buckeye ADMP Study Area. Compatibility ratings were established for the aforementioned six different flood protection methods that are routinely implemented by the District in delivering flood protection services and facilities of Maricopa County. The visual quality that is typically associated with implementation of the flood protection methods by the District was compared with the

visual quality reflected in each of the variety classes. A determination was made regarding the compatibility of the method with maintaining the visual quality of each variety class. The resulting compatibility ratings and compatibility classes are shown in **Table 3.5.1** below. Within a GIS database each LVC was assigned the corresponding FPM Compatibility Class. The ratings reflects typical Flood Control District applications of the flood protection methods. Incompatible ratings may, in some instances, be overcome through the application of special or extraordinary treatments and designs.

**Table 3.5.1  
 Landscape Variety Class Compatibility  
 Ratings for Flood Protection Methods**

<b>Flood Protection Methods</b>	<b>Landscape Variety Classes</b>			
	<b>A+</b>	<b>A</b>	<b>B</b>	<b>C</b>
<b>Non-Structural</b>	C	C	C	C
<b>Soft Structural</b>	IC	C	C	C
<b>Semi-Soft Structural</b>	IC	C	C	C
<b>Hard Structural with Aesthetic Treatments</b>	IC	IC	C	C
<b>Semi-Hard Structural</b>	IC	IC	C	C
<b>Hard Structural</b>	IC	IC	C	C
<b>Compatibility Class</b>	1	3	6	6

Compatibility Class 1 denotes Variety Classes that are compatible only with the Non-Structural Method; Compatibility Class 3 denotes Variety Classes that are compatible with the Non-Structural, Soft Structural and Semi-Soft Structural; and Compatibility Class 6 denotes Variety Classes that are compatible with all of the Flood Protection Methods.

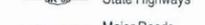
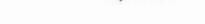
**BUCKEYE AREA  
DRAINAGE MASTER PLAN**

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**LANDSCAPE VARIETY CLASSES  
FLOOD PROTECTION METHODS  
COMPATIBILITY**

-  Compatibility Class 1
-  Compatibility Class 3
-  Compatibility Class 6

**REFERENCE FEATURES**

-  Subtype Boundary
-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Rivers and Washes
-  Rivers and Washes
-  Buckeye ADMP Boundary

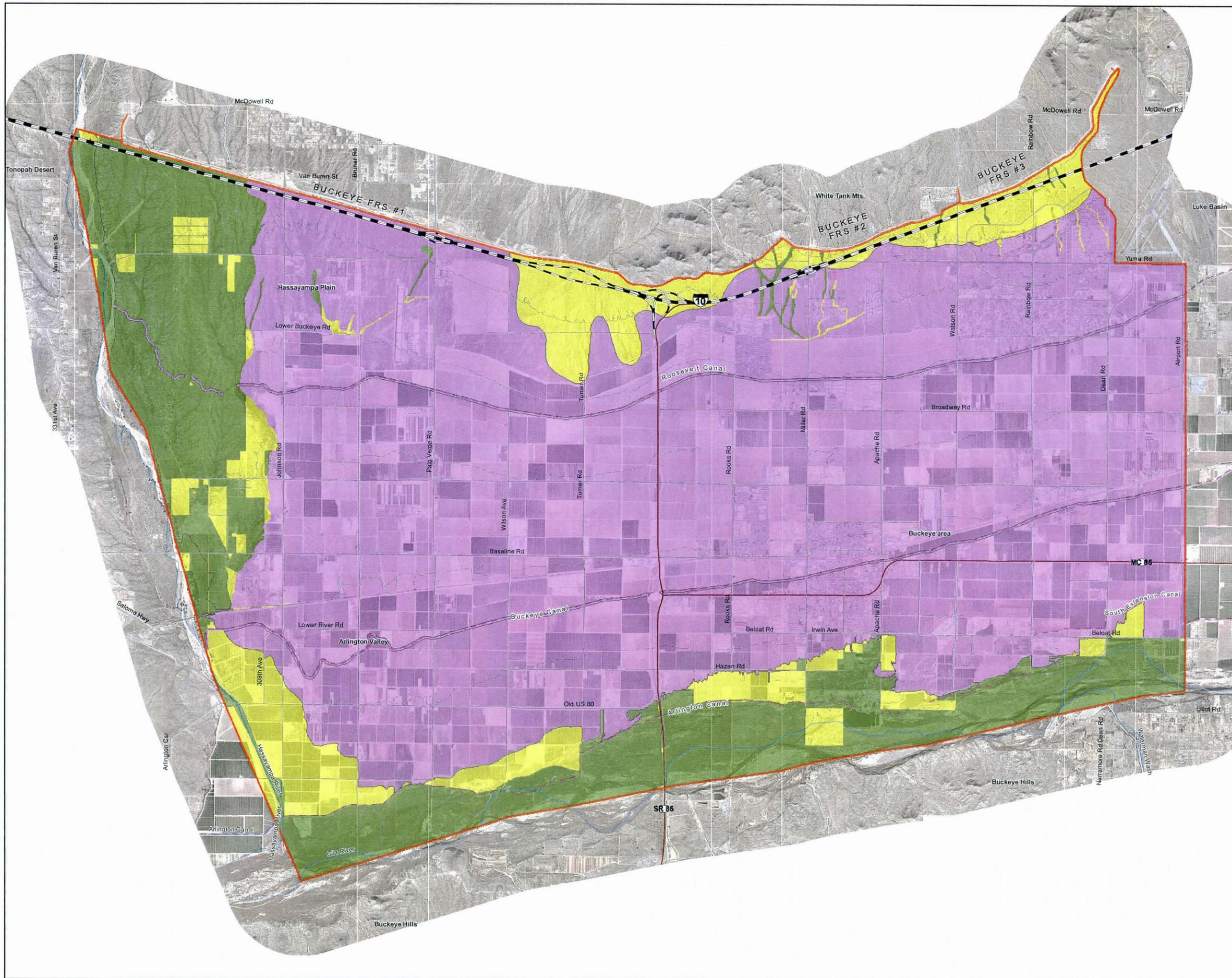


Figure 3.5.1

### 3.6 Visual Sensitivity Levels Compatibility

Visual Sensitivity Levels Landscape Compatibility ratings provide an indication of the range of flood protection methods that are expected to be compatible and context sensitive with the Visual Sensitivity Levels. The flood protection methods are arrayed as a spectrum where each successive method has an increasing potential for adversely impacting the visual environment and a decreasing potential for achieving context sensitivity. Under this arrangement for example, areas identified as being compatible with the Semi-Soft Structural Method Compatibility (Compatibility Class 3) will also be compatible with the Soft Structural and Non-Structural Methods; Compatibility Classes 2 and 1, respectively. Hence, each compatibility class represents a range of flood protection methods that would be compatible with the Visual Sensitivity Levels.

The flood protection methods were evaluated for each of the Visual Sensitivity Levels and each method was rated as either compatible (C) or incompatible (IC) based upon the viewer concern levels and viewing distance zones in each sensitivity level. The compatibility ratings and resulting compatibility classes are shown in **Table 3.6.1** below. The ratings reflect typical Flood Control District applications of the flood protection methods. Incompatible ratings may, in some instances be mitigated through the application of special or extraordinary treatments and designs.

**Table 3.6.1**  
**Visual Sensitivity Levels Landscape Compatibility**  
**Ratings for Flood Protection Methods**

Flood Protection Methods	Visual Sensitivity Levels						
	Fg1	Mg1	Bg1	Fg2	Mg2	Bg2	3
<b>Non-Structural</b>	C	C	C	C	C	C	C
<b>Soft Structural</b>	C	C	C	C	C	C	C
<b>Semi-Soft Structural</b>	C	C	C	C	C	C	C
<b>Hard Structural w/ Aesthetic Treatments</b>	IC	C	C	C	C	C	C
<b>Semi-Hard Structural</b>	IC	IC	C	IC	IC	C	C
<b>Hard Structural</b>	IC	IC	C	IC	IC	C	C
<b>Compatibility Class</b>	3	4	6	4	4	6	6

Only Level 1 Sensitive Travelways were mapped for this study area. By applying the above matrix to this mapping using GIS, the Visual Sensitivity Levels Compatibility Class Mapping was completed for the Buckeye ADMP Study Area (**Figure 3.6.1**).

These Visual Sensitivity Levels Compatibility Classes include:

Compatibility Class	Acreage	Percentage of Total
3	49,447	75.36%
4	16,171	24.64%

Proposed Flood Control Methods located within the Foreground of a Sensitivity Level 1 Travelway, or  $\frac{1}{4}$  mile, require greater sensitivity to the compatibility of the facility with the Landscape Character Units visual character. For this reason, Compatibility Class 3 methods have been deemed best suited for these areas because of the minimal impact they incur on the landscape.

The greater viewing distance of the Middleground allows the landscape to better visually absorb the hard structures associated with some Flood Control Methods. However, areas in the Middleground of a Sensitivity Level 1 Travelway, or between  $\frac{1}{4}$  mile and 3 miles, also require sensitivity to the compatibility of the facility with the Landscape Character Units visual character. For this reason, any hard structure facility proposed would require the careful consideration of aesthetics and complimenting the Visual Character of the landscape, resulting in a Compatibility Class 4 rating.

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**VISUAL SENSITIVITY LEVELS  
FLOOD PROTECTION METHODS  
COMPATIBILITY**

-  Compatibility Class 3
-  Compatibility Class 4

**REFERENCE FEATURES**

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  Scenic Roadways
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary
-  Maricopa County Trails

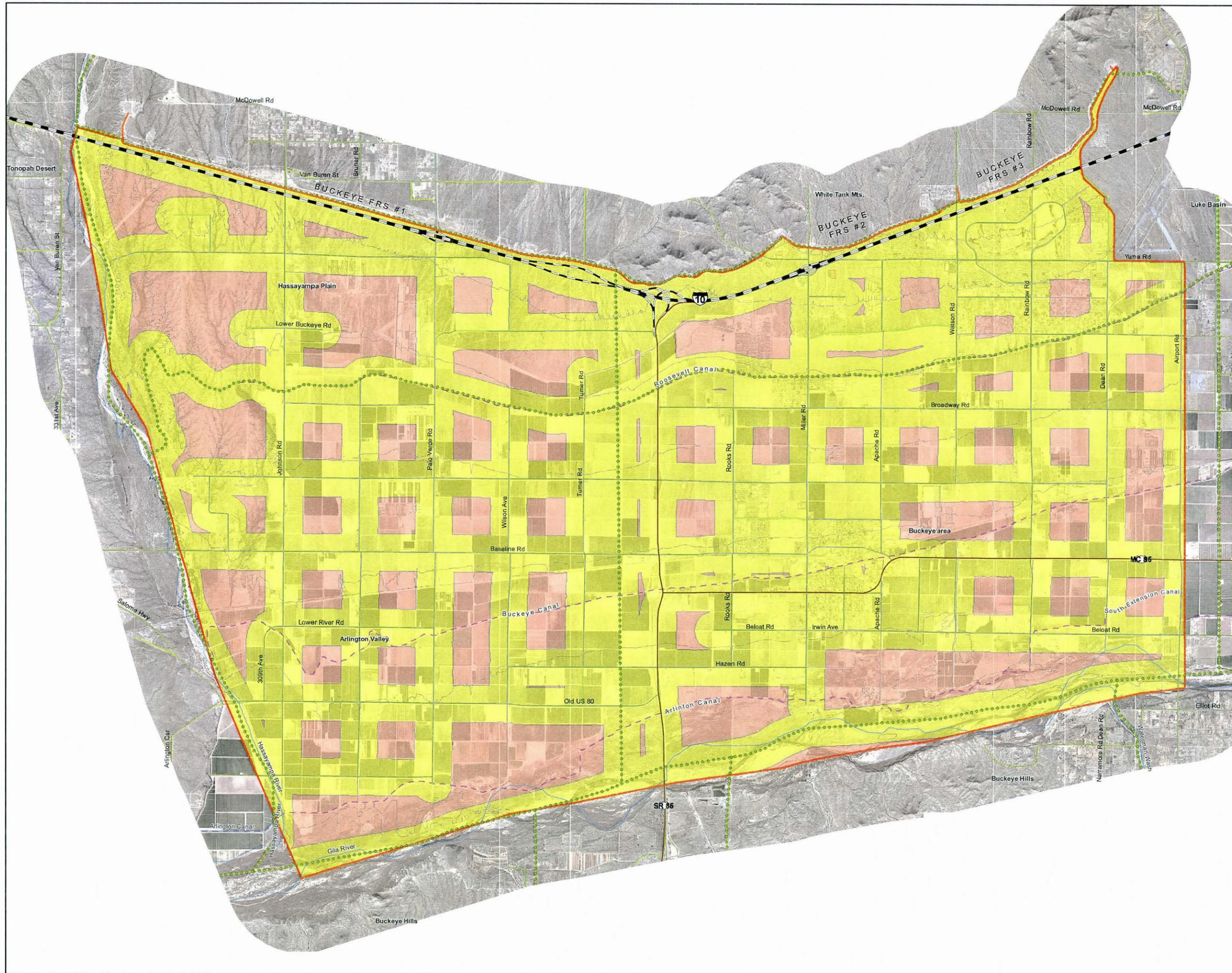
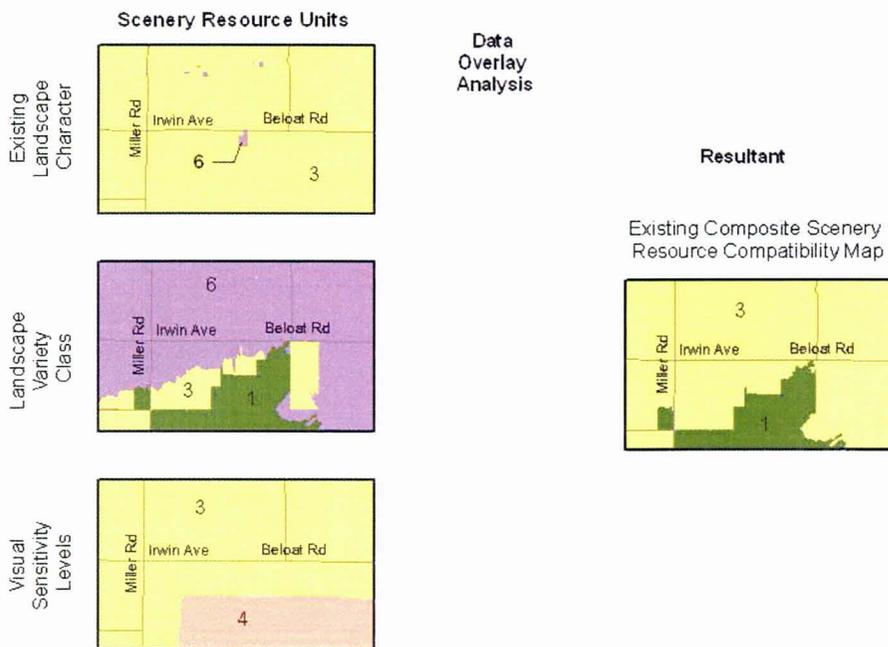


Figure 3.6.1

### 3.7 Existing Composite Scenery Resource Compatibility Analysis

Using an ArcMap software application to overlay the Existing Landscape Character Compatibility Map, and the Visual Sensitivity Compatibility Map the Existing Composite Scenery Resource Compatibility Map was created (**Figure 3.7.2**). The Existing Composite Scenery Resource Compatibility was created as a new layer modified by the boundaries of the three Scenery Resource Units (Existing Landscape Character, Landscape Variety Class, and Visual Sensitivity Levels) through a series of ‘cut polygon’ commands. Where this area resulted in areas of lesser restriction matching areas of higher restriction, the most restrictive Compatibility Class took precedence. In this way, the Compatibility Class shown is the best suited to all aspects of the Visual Character for that particular area of the study area. **Figure 3.7.1** gives a graphic illustration of this process

**Figure 3.7.1**



The approximate distribution of the Compatibility Classes based on this analysis is shown below:

Compatibility Class	Acreage	Percentage of Total
Class 1	13,212	20.13%
Class 3	51,821	78.97%
Class 4	585	0.89%

The areas of Compatibility Class 1 from the Existing Composite Scenery Resource Compatibility Map represent the Valley River & Washes and Dissected Slopes physical divisions. This is due to their inherent higher visual quality, and the difficulty of complimenting the visual character of these areas using Semi-Soft or other methods that have the potential to visually impact the landscape.

The Compatibility Class 3 ratings throughout the study area show that the visual character of this area is most compatible with natural forms and minimal hard structures that are subordinate to the overall visual character of the landscape.

The Industrial Bajada and Valley Plains Landscape Character Units that lie in the Middleground of a Sensitivity Level 1 Travelway make up the entirety of the areas designated Compatibility Class 4. These areas have less restrictive flood protection method compatibility due to the Existing Landscape Character Units and Landscape Variety Classes, however the proximity and sensitivity of potential viewers in these areas requires that proposed Flood Control Methods respond to the high level of viewer concern for aesthetics in the landscape.

**BUCKEYE AREA  
DRAINAGE MASTER PLAN**

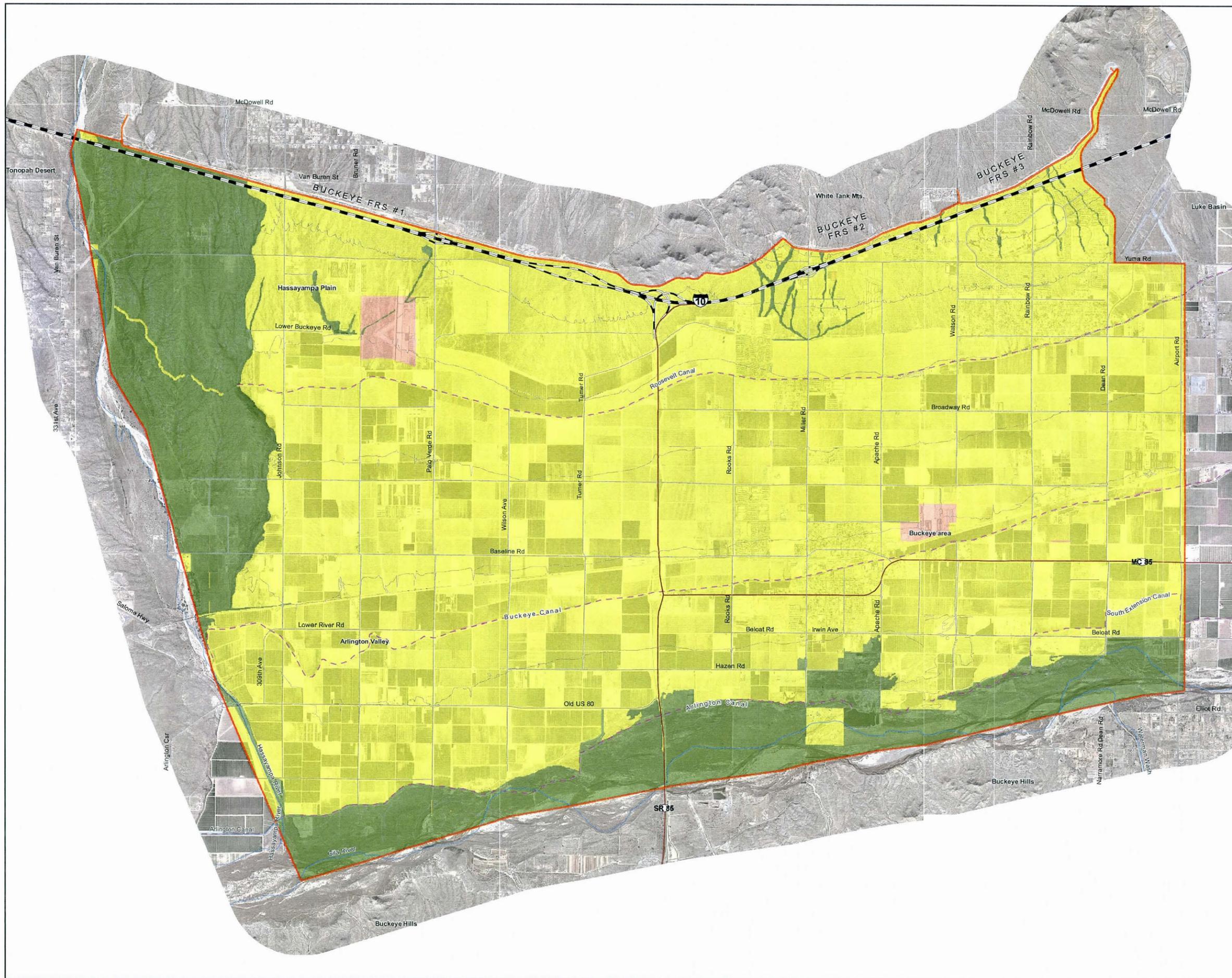
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June 2007

**EXISTING COMPOSITE  
SCENERY RESOURCES  
FLOOD PROTECTION METHODS  
COMPATIBILITY**

- Compatibility Class 1
- Compatibility Class 3
- Compatibility Class 4

**REFERENCE FEATURES**

- Flood Control Structures
- Interstate Highways
- State Highways
- Major Roads
- 50 Foot Contours
- Canals
- Rivers and Washes
- Buckeye ADMP Boundary



0 0.25 0.5 1 1.5 2 Miles



Figure 3.7.2

### 3.8 Future Composite Scenery Resource Compatibility Analysis

Using an ArcMap software application to overlay the Future Landscape Character Compatibility Map, and the Visual Sensitivity Compatibility Map the Future Composite Scenery Resource Compatibility Map was created. The Future Composite Scenery Resource Compatibility was created as a new layer modified by the boundaries of the three Scenery Resource Units (Future Landscape Character, Landscape Variety Class, and Visual Sensitivity Levels) through a series of 'cut polygon' commands. Where this area resulted in areas of lesser restriction matching areas of higher restriction, the most restrictive Compatibility Class took precedence. In this way, the Compatibility Class shown is the best suited to all aspects of the Visual Character for that particular area of the study area. **Figure 3.8.1** gives a graphic illustration of this process.

Compatibility Class	Acreage	Percentage of Total
Class 1	13,211	20.13%
Class 3	51,824	78.98%
Class 4	582	0.89%

The areas of Compatibility Class 1 from the Future Composite Scenery Resource Compatibility Map represent the Valley River & Washes and Dissected Slopes physical divisions. This is due to their inherent higher visual quality, and the difficulty of complimenting the visual character of these areas using Semi-Soft or other methods that have the potential to visually impact the landscape.

The Compatibility Class 3 ratings throughout the study area show that the visual character of this area is most compatible with natural forms and minimal hard structures. The superstructures should remain subordinate to the overall visual character of the landscape.

The Industrial Bajada and Valley Plains Landscape Character Units that lie in the Middleground of a Sensitivity Level 1 Travelway make up the entirety of the areas designated Compatibility Class 4. These areas have less restrictive flood protection method compatibility due to the Existing Landscape Character Units and Landscape Variety Classes, however the proximity and sensitivity of viewers in these areas suggests that proposed Flood Control Methods respond to the high level of viewer concern for aesthetics in the landscape. The least restrictive class allowed by the Future Composite Scenery Resource Compatibility Analysis is a Class 4 up from Class 6 in the Existing Composite Scenery Resource Compatibility Analysis.

**BUCKEYE AREA  
DRAINAGE MASTER PLAN**

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**FUTURE COMPOSITE  
SCENERY RESOURCES  
FLOOD PROTECTION METHODS  
COMPATIBILITY**

-  Compatibility Class 1
-  Compatibility Class 3
-  Compatibility Class 4

**REFERENCE FEATURES**

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary

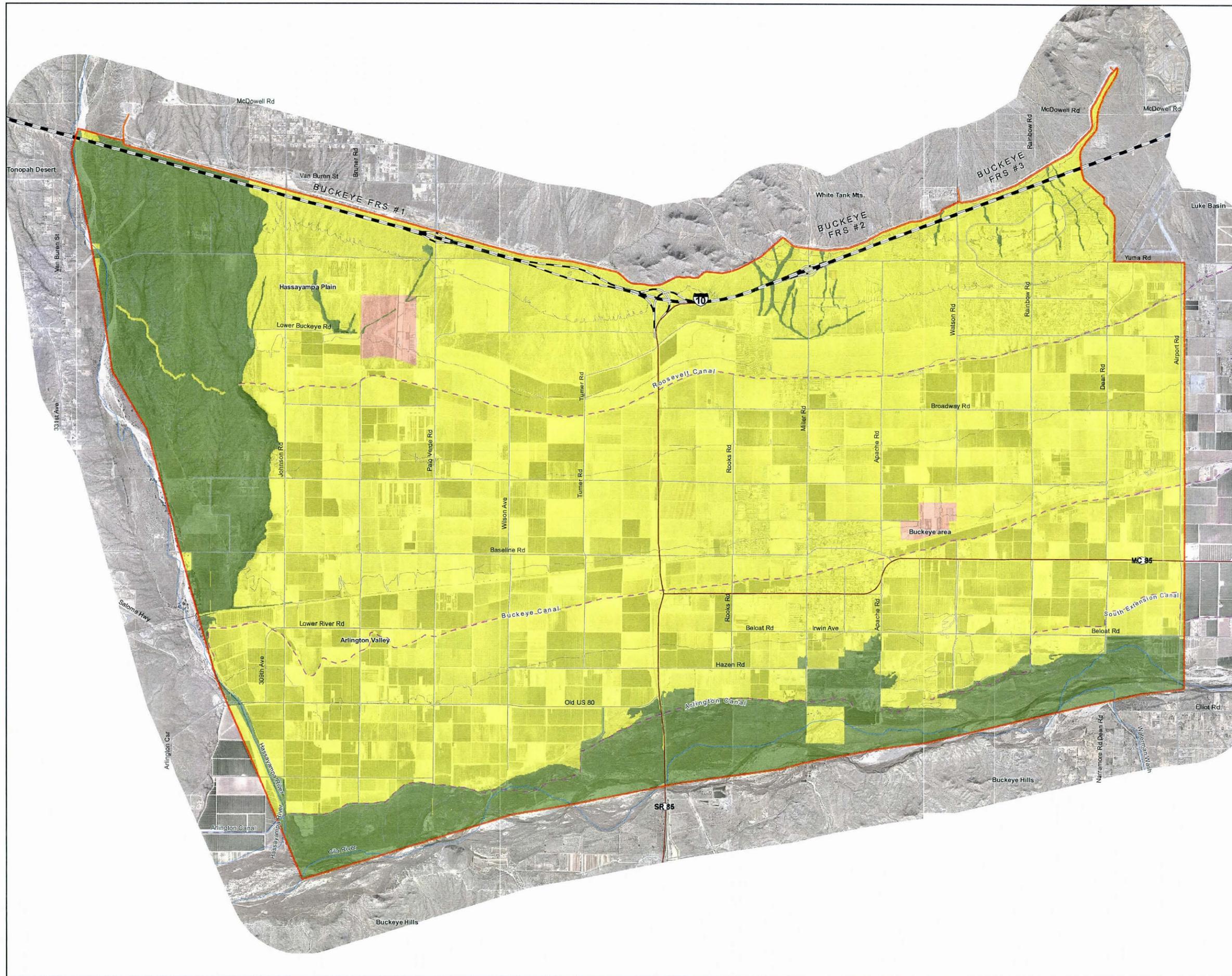


Figure 3.8.1

## **CHAPTER 4 – Recreation Resource Inventory**

The inventory of existing parks, recreation areas and open spaces within the Buckeye ADMP Study Area were used to develop this Recreation Resource Inventory as well as the analysis of the compatibility of these recreation resources in relation to the variety of flood protection methods that are routinely applied by the District.

### **Flood Control District Mission Statement:**

.....to provide flood protection identification, regulation, remediation and education to the people of Maricopa County so that they can reduce risks of injury, death and property damage due to flooding while enjoying the natural and beneficial values served by flood plains.

### **Flood Control District Vision Statement:**

.....the people of Maricopa County and future generations will have the maximum amount of protection for the effects of flooding through fiscally responsible flood control actions and multi-use facilities that enhance the beauty of our desert environment.

The planning and design of flood control facilities to increase their year round value and benefit to the public by incorporating opportunities for recreation multi-use to meet existing and future local community needs for recreation, trails, open spaces and alternative forms of transportation, to the fullest extent consistent with the District's legal charter, is a primary goal of the District's Mission and Vision Statements. The achievement of this goal is recognized by the opportunities for its overall mission, programs, plans and projects.

The Recreation Resource Assessment for Maricopa County was undertaken to assist the District in the identification, analysis, integration and capture of recreation multi-use opportunities into District flood control projects. The assessment is intended to serve as a tool for broad scale regional planning studies and a framework and starting point for more detail studies of recreation resources that are undertaken as part of flood control project planning and design.

## **4.1 Parks and Open Space**

### **Existing Parks and Open Space**

#### **Within the Buckeye ADMP Study Boundary**

The current developed condition of the majority of the Buckeye ADMP study area is agricultural. Although major development of residential and commercial property is currently under way, there are few existing park facilities within the study boundary. Within Buckeye's developed town center, several parks less than five acres in size with limited open space and programming are spread throughout. The town has, within the last

five years, built a large pool and water play area next to Buckeye Park, a moderately sized community park that is directly adjacent to, and shares amenities with the High School.

<b><u>Park and Recreation Type</u></b>	<b><u>Acre</u></b>	<b><u>% of Total</u></b>
State Wildlife Areas	200	1.38%
Regional Conservation Area	8,883	61.14%
Regional Retention Area	1,035	7.13%
Local City Parks	53	0.36%
Future City Regional Parks	12	0.09%
Future Conservation Area	4,252	29.26%
Future Local Parks	93	0.64%



MC 85 and Apache Road – Buckeye Park

An open area to the south and east, triangular in shape, and surrounded by roadways, has been utilized as an open turf area where field sports and festivals can be held. A sports park is located at Miller road and Belloat Road. The amenities in this park include 4 softball / little league fields, including Craig Counsell field, open turf area designated for soccer, basketball courts, playground, and community center. A buckeye fire station is located adjacent to the park. The other dedicated turf open space is directly adjacent to the schools listed as follows: Liberty Elementary on MC 85 Buckeye Elementary on 6th Street, Palo Verde Elementary School on old US 80, and Buckeye Union HS on Eason Ave.



South of MC 85 and Apache Road



Palo Verde Road and Old US 80 – Rural School



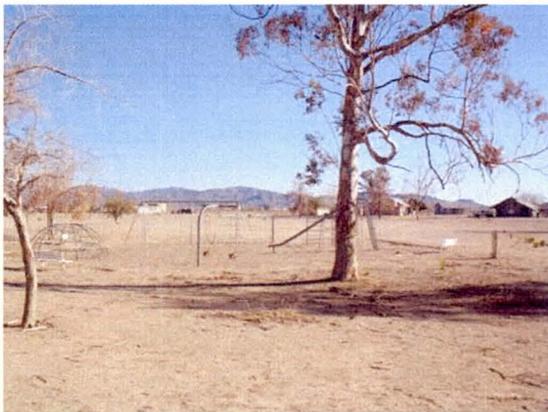
Miller Road south of Centre - Craig Counsell Field



Miller Road and Beloit Road



4<sup>th</sup> Streets north of the Buckeye Canal



Palo Verde Road and Yuma Road – Hopeville Park

Private Equestrian grounds are situated in the south central part of the study area and it is approximately 128 acres in size. Several rings, stables, riding areas, and accompanying infrastructure are found at the facility resulting in a substantial gathering point for horse riding enthusiasts. Given that it is directly adjacent to the Gila River, future opportunities for connectivity to regional trails are a strong possibility. The Helzapoppin' Rodeo arena, located west of 4<sup>th</sup> street and north of the Buckeye canal and is privately owned and operated. Hopeville, a community in the northwest portion of the study area, once had a community center and a maintained park with playground equipment, ramadas, picnic areas, softball field, and soccer fields. However, after years of neglect, the community center has been condemned, and the park is in a state of disrepair with much of the facilities unsafe

The study area has large expanses of designated open spaces throughout the Hassayampa River corridor and the Gila River Corridor these open spaces are designated by the MAG Desert Open Spaces plan. These areas, generally defined by the floodplain delineation line, lie directly adjacent to the river channel and run the length of the study areas along

the west and south boundaries. The Gila River open space delineation varies in width, but exceeds two miles in width in areas. A significant acreage of River Terrace, starting near Watson Road and extending east to approximately Dean Road has been devastated by fire. Although new growth is apparent, it will be many years before this area has fully recovered. The Hassayampa open space delineation is narrow by comparison and averages approximately one mile in width. Both the Hassayampa and the Gila River corridors are peppered with industrial operations. The main use is mining and gravel extraction which results in a considerable visual discordance.

### **Open Space adjacent to the Study Area**

Open space abounds within 10 miles of the study boundary. Three county parks fall into this category including White Tanks Mountain Regional Park, Buckeye Hills Regional Park, and Estrella Mountain Regional Park. The Maricopa County Parks system is the largest park system in the Nation with three of its ten parks triangularly spaced just outside of the study area boundary. **Figure 4.1.1** shows the study area Park and Open Space Resources with all Park and Open Space Resources within 10 miles of the study area.

Buckeye Hills Regional Park is less than two miles south of the study boundary and is the smallest of the adjacent county parks at 4,478 acres. It is largely undeveloped, is accessible by dirt road, and has primitive services. Services found at this park include a gun range, picnic sites, and some camping opportunities. The terrain is rough and often mountainous with numerous arroyos.

Estrella Mountain Regional Park is approximately six miles outside of the study area boundary to the southeast and is south of and directly adjacent to the Gila River. At 19,812 acres, this park provides many recreational opportunities including softball, soccer, rodeo grounds, competitive mountain bike courses, playgrounds, numerous hiking trails, picnicking, and interpretation. The terrain is flat near the river terrace and extends up into dramatic mountain peaks that provide the backdrop to many Phoenix residents.

White Tanks Regional Park is approximately seven miles outside the study area to the north and is situated within the White Tank Mountains. At 29,558 acres, it is the largest county park in the nation and is larger than many counties in and of itself. This park also provides a variety of recreational opportunities including camping, hiking, biking, horseback riding and interpretation. Many historic and prehistoric artifacts can be viewed within the park providing users with the unique opportunity to gain an understanding of previous settlement. Over half of the White Tank Mountain range falls within the boundaries of this park. The terrain extends from upper valley plain to rugged mountains and provides opportunities to view arroyos, box canyons, and extensive pristine bajada among many other landscape character types.

Just to the south of the Gila River and less than one mile outside the study area is Robin's Butte Wildlife Area. This open space area, at 1,448 acres is sandwiched between the Gila

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Landscape Resources Inventory & Analysis  
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River and the Buckeye Hills Regional Park, many wildlife enthusiasts enjoy the flora and fauna found in this unique river terrace setting.

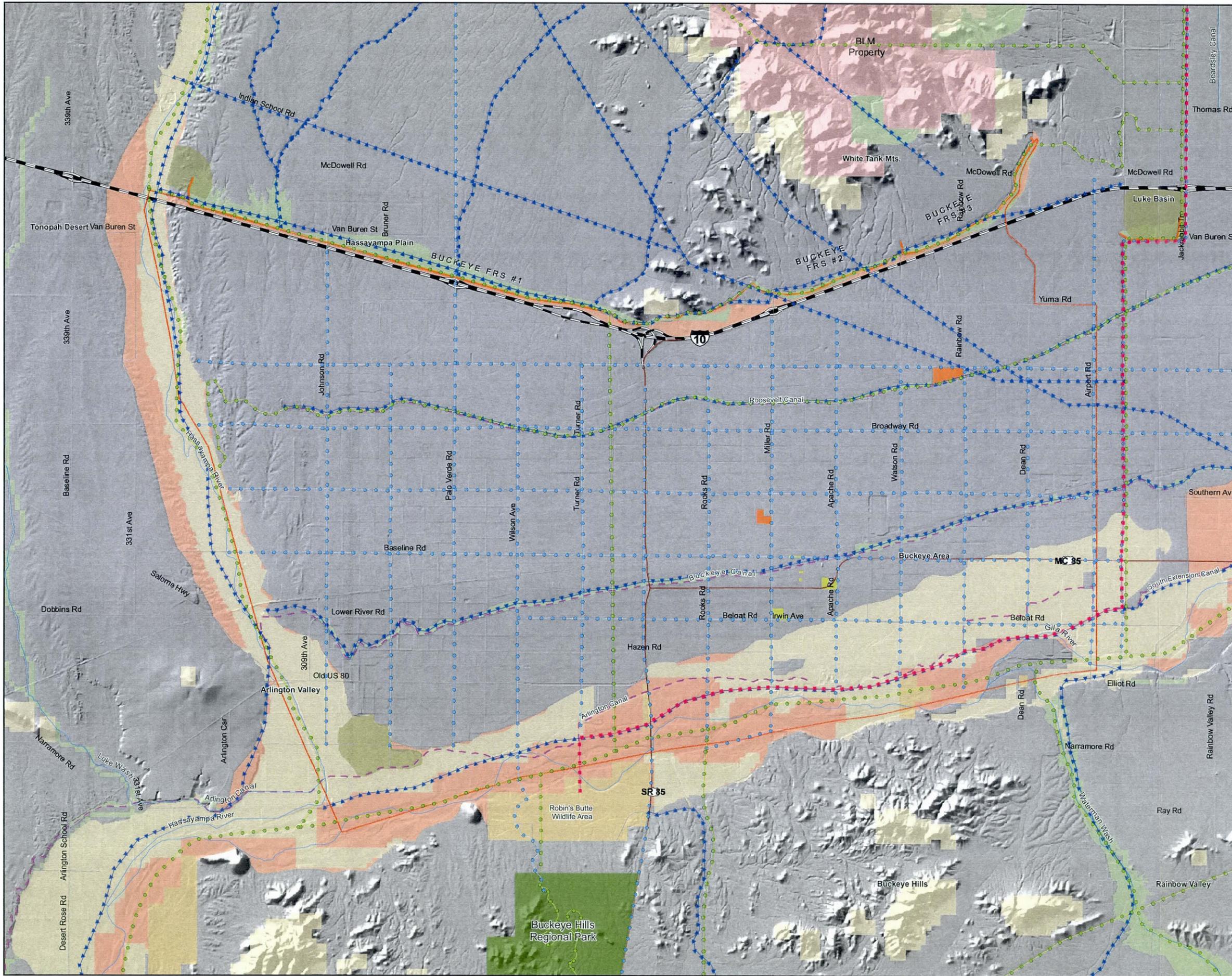
The Sonoran Desert National Monument is approximately eight miles beyond the study area boundary. The monument contains three congressionally designated wilderness areas and has more than 496,000 acres. Although no facilities are available, hiking and camping is allowed.

Existing facilities that are within the study area and, while not used now, may be used in the future for open space are the RID Canal, the Buckeye Canal, and APS power transmission line corridors. These corridors provide unique opportunities to link recreational facilities and county trails within and outside the Buckeye ADMP study boundary.

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## LOCAL PARKS AND OPEN SPACES



<b>Federal</b>	<b>Planned Trails</b>
Bureau of Land Management	Maricopa County Regional Trails
<b>State</b>	Future Multi-Use Trail
Wildlife Areas	Future Multi-Use Foothills/Wash Trails
<b>Regional</b>	Future MAG Trails
County Open Space - Conservation Area	
County Open Space - Retention Area	
County Regional Parks	
<b>Local</b>	
City Parks	
<b>Planned Facilities</b>	
City Regional Parks	
County Open Space - Conservation Area	
Local Parks	
<b>REFERENCE FEATURES</b>	
Flood Control Structures	50 Foot Contours
Interstate Highways	Canals
State Highways	Rivers and Washes
Major Roads	Buckeye ADMP Boundary



Figure 4.1.1



### **Planned Future Open Space**

The Town of Buckeye's growth expectations over the next few decades is enormous. Currently the estimated population is over 30,000, by the year 2030 this figure is expected to increase to 420,000. Further, at full build out of the Buckeye plan area, they anticipate a total population near 1.3 million people. Much of this population growth is expected within the Buckeye ADMP study boundary. A proactive approach is under way in the Town of Buckeye by developing a comprehensive plan that will be the guide to future development. Specific to open space, a Parks and Open Space Master Plan has been completed as well. This plan, along with the MAG Desert Open Spaces Plan, and the Maricopa County Parks and Recreation Parks and Trails, has been utilized to gain further understanding of the future parks and open space opportunities within the study area and within 10 miles of the boundary.

The Town of Buckeye has plans for one Regional park within the study area boundary. The site is generally located Brunner Road and is adjacent to the Gila River corridor. It is surrounded on three sides by county open space and is located within the flood plain. Opportunities abound for connection to the park from the Hassayampa and Gila River trails systems.

The Town of Buckeye is also planning for an additional three regional parks within 10 miles of the study area boundary. The first is located at Jack Rabbit Trail and Van Buren and appears to be a joint use recreation facility with the Flood Control District's FRS #3. The second is located north of I-10 and is directly adjacent to the Hassayampa River corridor. It, too, is located near a Flood Control District structure, the FRS #1 and may be utilized as a joint use facility. Further, it has strong potential for connectivity to open space corridors with its proximity to the Hassayampa, running north/ south, and FRS #1, running east/ west. The third regional park, preliminarily named White Tanks Park, is located within the southern reaches of the White Tanks Mountain Range. Currently, this land is designated as BLM land. Discussions are under way with the Town of Buckeye and Maricopa County Parks and Recreation to consider this land as open space for recreational use. If implemented, this will create a direct linkage into the Maricopa County White Tanks Regional Park, mentioned above it will provide the Buckeye residents with extraordinary opportunities for recreation. The south and west boundaries have linkage opportunities through proposed trail systems identified as both Buckeye Multi-use wash trails, and Maricopa County Regional Trail linkages. The Master Plan does not drill down to parks sized at the community park size and smaller. However, it is anticipated that multiple sites within the study area will be identified in the Town of Buckeye's updated Master Plan.

Plans are also under way for a town lake at the south end of the study area and located east of Miller Road and south of Beloit Road. The lake will be a central feature for south Buckeye and will provide multiple recreational opportunities and trail linkages to the Gila River corridor that defines the south boundary of the lake project.

The study area is strewn with future trail corridors that link open space within and outside the study area boundary. The opportunity for joint use of trails and FCD facilities is tremendous. The future trails that have been identified and preliminary routings identified include Maricopa County Regional Trails, MAG trails, and Town of Buckeye multi-use and foothills/wash trails.

The Maricopa County Parks and Recreation Department has been involved with locating a county wide trail system that will act as a linkage to its 10 county parks, conservation areas, river corridors, and other open spaces through the county. The Buckeye ADMP study area is within a matrix of connecting Maricopa County Trail corridors with an estimated length within the study area of 61 miles. The Hassayampa and Gila River Corridors will have trails that run the length of the west and south boundaries of the study area. Two north/ south links from the Gila River corridor to the FRS #1 and #2 have been identified. The first is between Turner and SR 85, while the other is just outside the study area boundary located east of Airport Road. Three east/ west Maricopa County trails area located within the study area and split the area into thirds. The northern most trail runs along the FRS # 1 and #2, the second along the RID Canal, and the third along the Buckeye Canal.

The Town of Buckeye, as shown in the Parks and Open Space master plan, has identified many multi-use and wash/ foothill trails within the study area boundary and beyond with approximate lengths within the study area at 342 miles. The town has identified that each major arterial roadway at mile intervals, north and south, will contain an integral multi-use trail. Other corridors identified as trails and linkages include major power line corridors and wash areas.

Two MAG trails are found within and close to the study area. The first, starts at Robin's Butte Wildlife Area and extends east along the Gila River Corridor, sharing an alignment with a Town of Buckeye trail alignment. The second, located just to the east of the Airport Road study boundary, heads north/ south and shares an alignment with the Maricopa County Trail System.

The opportunities for joint use with Flood control facilities and open space trail corridors cannot be overstated. Identifying the potential for these joint uses should be considered strongly in the alternatives generated.

Future conservation areas have also been identified within ten miles of the study area. Large portions of the Gila River corridor and the west side of the Hassayampa River corridor have been designated as future conservation areas. The north boundary, demarcated by FRS #1 and #2 are also identified as future conservation area. The total acres designated as such within ten miles of the ADMP boundary is approximately 11,835 acres. **Figure 4.1.2** shows the Park and Open Space Resources within the study area and within 2 miles of the study area.

# BUCKEYE AREA DRAINAGE MASTER PLAN

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## REGIONAL PARKS AND OPEN SPACES

- |                                       |  |
|---------------------------------------|--|
| <b>Federal</b>                        | <b>Planned Trails</b>                  |
| Wilderness Areas                      | Maricopa County Regional Trails        |
| National Monuments                    | Future Multi-Use Trail                 |
| Bureau of Land Management             | Future Multi-Use Foothills/Wash Trails |
| <b>State</b>                          | Future MAG Trails                      |
| Wildlife Areas                        |  |
| <b>Regional</b>                       |  |
| County Open Space - Conservation Area |  |
| County Open Space - Retention Area    |  |
| County Regional Parks                 |  |
| <b>Planned Facilities</b>             |  |
| City Regional Parks                   |  |
| County Open Space - Conservation Area |  |
| <b>REFERENCE FEATURES</b>             |  |
| Flood Control Structures              | 50 Foot Contours                       |
| Interstate Highways                   | Canals                                 |
| State Highways                        | Rivers and Washes                      |
| Major Roads                           | Buckeye ADMP Boundary                  |

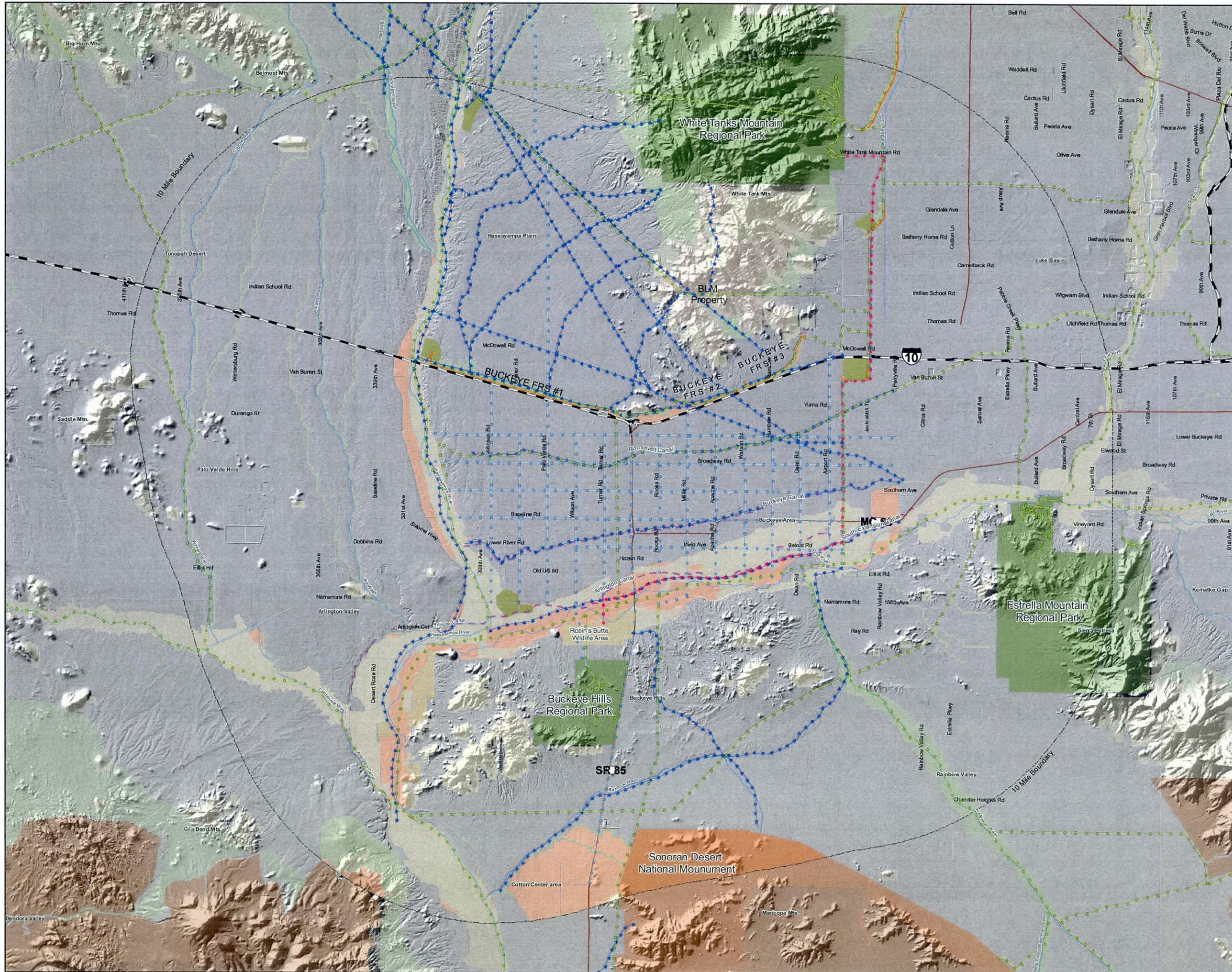


Figure 4.1.2

## 4.2 Parks and Open Space Compatibility

Areas identified as park and open space within the study area boundary were evaluated for their primary expected recreation experience. Regional and local parks incorporate turf utilized for passive and active play. Integration of Flood Control Facilities require that they be compatible with these recreational uses. Federal and State open spaces areas are designated as such due to their importance as a protected land resource. Because of the implied sensitivity attached to this open space, non intrusive types of flood control methods should be employed. **Figure 4.2.1** shows the Park and Open Space Compatibility for flood protection methods.

**Table 4.2.1**  
**Existing and Future Parks, Recreation Areas and Open Spaces Compatibility Ratings for Flood Protection Methods**

Parks, Recreation Use Areas & Open Spaces	Flood Protection Methods						Compatibility Class
	NS	SS	SSS	HSw/AT	SHS	HS	
<b>Federal</b>							
Bureau of Land Management	C	IC	IC	IC	IC	IC	1
Wilderness Areas	C	IC	IC	IC	IC	IC	1
National Monuments	C	IC	IC	IC	IC	IC	1
<b>State</b>							
Wildlife Areas	C	C	IC	IC	IC	IC	2
<b>Regional</b>							
County Regional Park	C	C	IC	IC	IC	IC	2
County Open Spaces							
Retention Areas	C	C	C	IC	IC	IC	3
Conservation Areas	C	C	IC	IC	IC	IC	2
<b>Local</b>							
City Parks	C	C	C	IC	IC	IC	3
<b>Future</b>							
Regional Park	C	C	IC	IC	IC	IC	2
County Open Space							
Conservation Areas	C	C	IC	IC	IC	IC	2

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## PARKS AND OPEN SPACES FLOOD PROTECTION METHODS COMPATIBILITY

- Compatibility Class 2
- Compatibility Class 3
- Not Designated

### PLANNED TRAILS

- Future Multi-Use Trail
- Future Multi-Use Foothills/Wash Trails
- Future MAG Trails

### REFERENCE FEATURES

- Flood Control Structures
- Interstate Highways
- State Highways
- Major Roads
- Maricopa County Regional Trails
- 50 Foot Contours
- Canals
- Rivers and Washes
- Buckeye ADMP Boundary

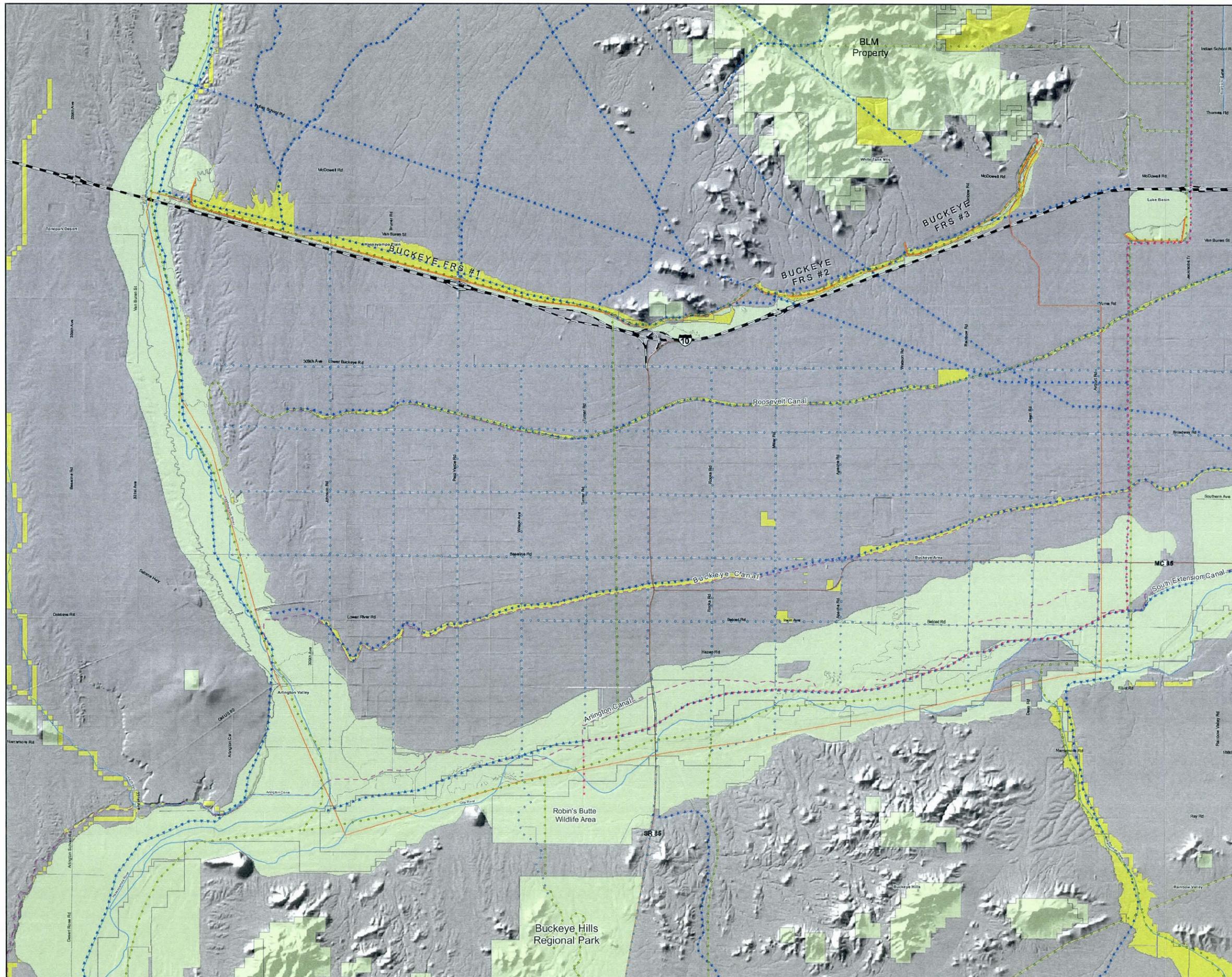


Figure 4.2.1

## **CHAPTER 5 – Combined Resource Compatibility Assessment**

### **5.1 Cultural Resources and Biological Resource Inventory and Analysis**

To further expand the types of resources considered within this planning process, Cultural Resources and Biological Resources were inventoried. Due to the sensitive nature of the Cultural Resources, a map illustrating these resource locations will not be made public. However, the Biological Resource locations have been mapped in **Figure 5.1.1**. Following the inventory of these two resources, compatibility matrices were created for each so that these elements of the study area could be compared to possible flood protection methods to determine compatibility which would be most appropriate. As a result the flood protection methods compatibility for the Cultural Resources (**Figure 5.1.2**) and the Biological Resources (**Figure 5.1.3**) were created for these two study area resources in the same way as all other study area resources detailed in this document. The purpose of this treatment is to include these study area resources in the Combined Resource Compatibility Analysis mentioned in the following sections. To further review the creation of Cultural and Biological Resources and their relative flood protection methods compatibility please see the *Buckeye Area Drainage Master Plan Historic Landscape Themes* and the *Ecological Assessment Report for the Buckeye Area Drainage Master Plan*, respectively.



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**CULTURAL RESOURCES  
FLOOD PROTECTION METHODS  
COMPATIBILITY**

-  Compatibility Class 1
-  Compatibility Class 2
-  Compatibility Class 6
-  Not Designated

**REFERENCE FEATURES**

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary



Figure 5.1.2

**BUCKEYE AREA  
DRAINAGE MASTER PLAN**

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**WILDLIFE HABITAT TYPE  
FLOOD PROTECTION METHODS  
COMPATIBILITY**

-  Compatibility Class 1
-  Compatibility Class 2
-  Compatibility Class 3
-  Compatibility Class 4
-  Compatibility Class 5
-  Compatibility Class 6

**REFERENCE FEATURES**

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary

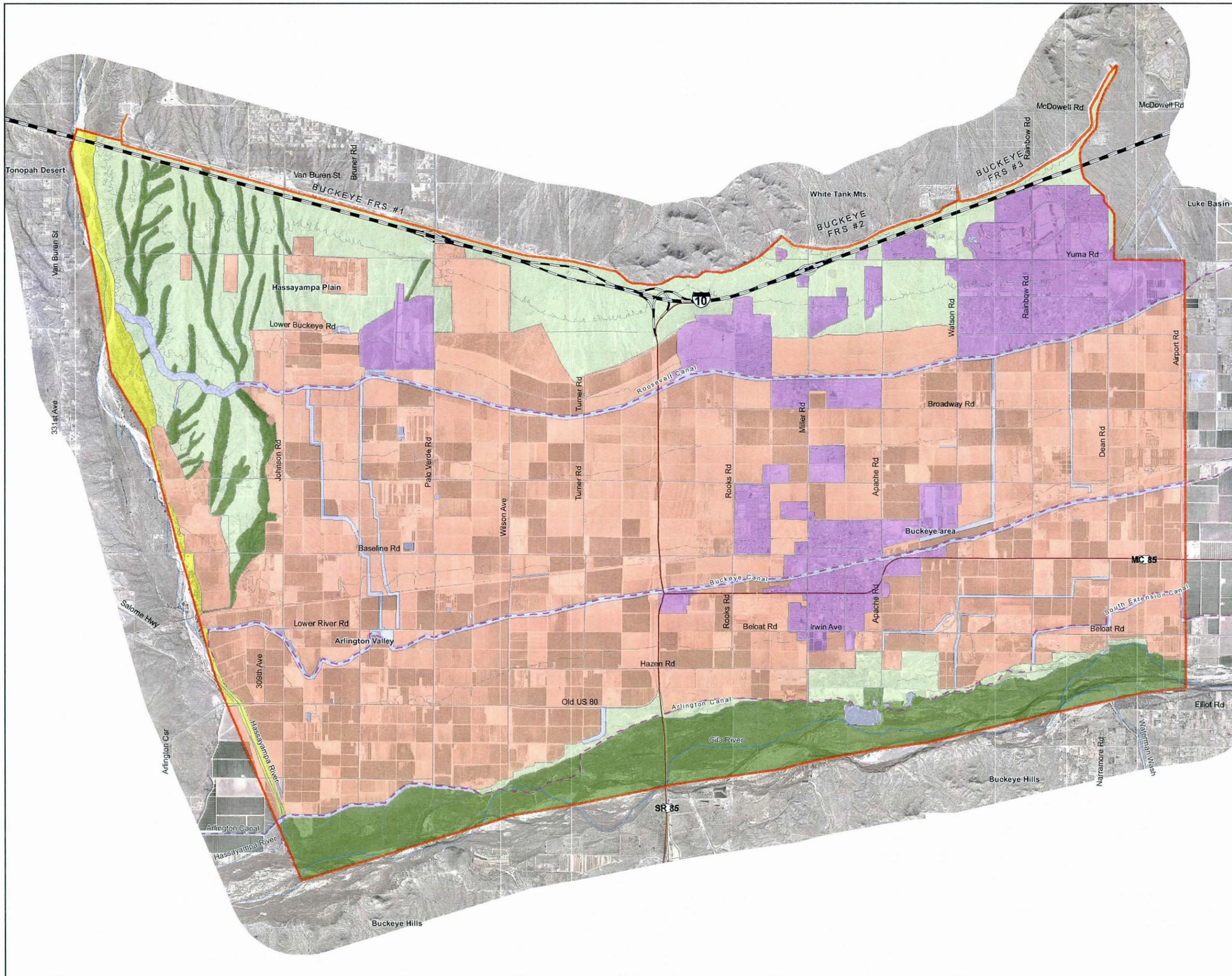


Figure 5.1.3

## 5.2 Existing Combined Resource Compatibility Analysis

Using an ArcMap software application to overlay the Parks and Open Space Compatibility Map, the Wildlife Habitat Types Compatibility Map and the Cultural/Historic Resource Compatibility Map to produce the Existing Combined Resource Compatibility Analysis was created (**Figure 5.2.1**). The Existing Composite Scenery Resource Compatibility was created as a new layer modified by the boundaries of the three Scenery Resource Units (Open Space Compatibility Map, Wildlife Habitat Types Compatibility Map, Cultural/Historic Resource Compatibility Map) through a series of 'cut polygon' commands. Where this area resulted in areas of lesser restriction matching areas of higher restriction, the most restrictive Compatibility Class took precedence. In this way, the Compatibility Class shown is the best suited to all aspects of the Scenery Resource, Visual Character, Recreation Resources, Biological Resources and Cultural Resources for that particular area of the study area. The approximate distribution of the Compatibility Classes based on this analysis is shown below:

<b>Compatibility Class</b>	<b>Acreage</b>	<b>Percentage of Total</b>
Class 1	15,390	23.45%
Class 2	12,301	18.75%
Class 3	37,752	57.53%
Class 4	175	0.27%

The areas of Compatibility Class 1 and Class 2 are associated with the most sensitive Biological Resources, Cultural/Historic Resources and the Existing Composite Scenery Resource Compatibility Map where the Valley River & Washes and Dissected Slopes physical divisions are present. This restrictive compatibility classification is due to the inherent higher visual and/or cultural quality of these areas, and the difficulty of complimenting the resources of these areas using Semi-Soft or other methods that have the potential to visually impact the landscape.

The Compatibility Class 3 ratings throughout the study area show that the visual character of this area is most compatible with natural forms and minimal hard structures that are subordinate to the overall visual character of the landscape.

The Industrial Bajada and Valley Plains Landscape Character Units that lie in the Middleground of a Sensitivity Level 1 Travelway make up the entirety of the areas designated Compatibility Class 4. These areas have less restrictive flood protection method compatibilities due to the Existing Landscape Character Units and Landscape Variety Classes; however the proximity and sensitivity of potential viewers in these areas requires that proposed Flood Control Methods respond to the high level of viewer concern for aesthetics in the landscape.

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**EXISTING COMBINED  
RESOURCE FLOOD  
PROTECTION METHODS  
COMPATIBILITY**

-  Compatibility Class 1
-  Compatibility Class 2
-  Compatibility Class 3
-  Compatibility Class 4

**REFERENCE FEATURES**

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary

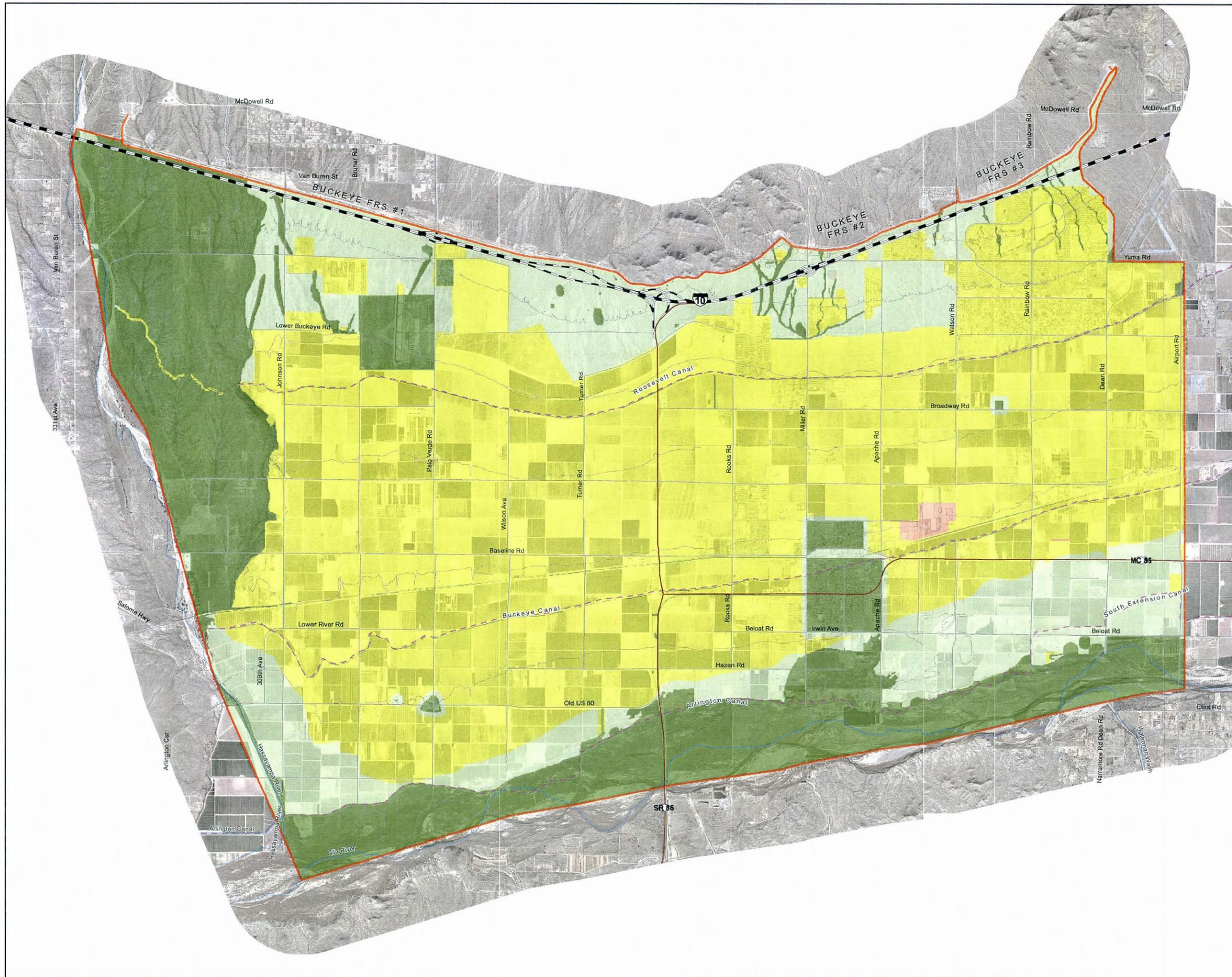


Figure 5.2.1

### 5.3 Future Combined Resource Compatibility Analysis

Using an ArcMap software application to overlay the Parks and Open Space Compatibility Map, the Wildlife Habitat Types Compatibility Map and the Cultural/Historic Resource Compatibility Map to produce the Existing Combined Resource Compatibility Analysis was created (**Figure 5.3.1**). The Existing Composite Scenery Resource Compatibility was created as a new layer modified by the boundaries of the three Scenery Resource Units (Open Space Compatibility Map, Wildlife Habitat Types Compatibility Map, Cultural/Historic Resource Compatibility Map) through a series of 'cut polygon' commands. Where this area resulted in areas of lesser restriction matching areas of higher restriction, the most restrictive Compatibility Class took precedence. In this way, the Compatibility Class shown is the best suited to all aspects of the Scenery Resource, Visual Character, Recreation Resources, Biological Resources and Cultural Resources for that particular area of the study area. The approximate distribution of the Compatibility Classes based on this analysis is shown below:

Compatibility Class	Acreage	Percentage of Total
Class 1	15,722	23.96%
Class 2	12,023	18.32%
Class 3	37,701	57.45%
Class 4	171	0.26%

The areas of Compatibility Class 1 and Class 2 are associated with the most sensitive Biological Resources, Cultural/Historic Resources and the Existing Composite Scenery Resource Compatibility Map where the Valley River & Washes and Dissected Slopes physical divisions are present. This restrictive compatibility classification is due to the inherent higher visual and/or cultural quality of these areas, and the difficulty of complimenting the resources of these areas using Semi-Soft or other methods that have the potential to visually impact the landscape.

The Compatibility Class 3 ratings throughout the study area show that the visual character of this area is most compatible with natural forms and minimal hard structures that are subordinate to the overall visual character of the landscape.

The Industrial Bajada and Valley Plains Landscape Character Units that lie in the Middleground of a Sensitivity Level 1 Travelway make up the entirety of the areas designated Compatibility Class 4. These areas have a less restrictive flood protection method compatibility due to the Existing Landscape Character Units and Landscape Variety Classes, however the proximity and sensitivity of potential viewers in these areas requires that proposed Flood Control Methods respond to the high level of viewer concern for aesthetics in the landscape.

**BUCKEYE AREA  
DRAINAGE MASTER PLAN**

Flood Control District of Maricopa County  
June 2007

**FUTURE COMBINED  
RESOURCES FLOOD  
PROTECTION METHODS  
COMPATIBILITY**

-  Compatibility Class 1
-  Compatibility Class 2
-  Compatibility Class 3
-  Compatibility Class 4

**REFERENCE FEATURES**

-  Flood Control Structures
-  Interstate Highways
-  State Highways
-  Major Roads
-  50 Foot Contours
-  Canals
-  Rivers and Washes
-  Buckeye ADMP Boundary

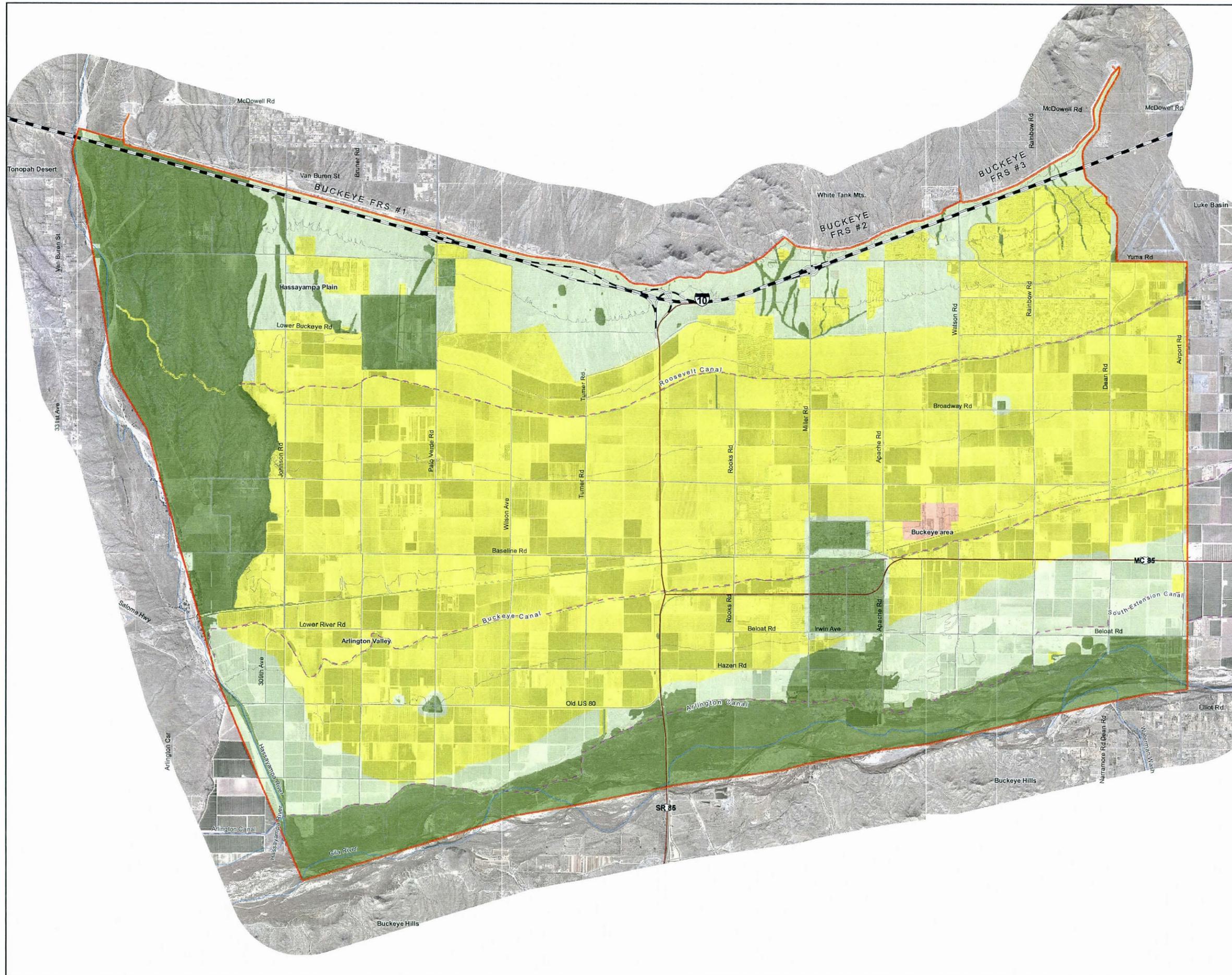


Figure 5.3.1

## **CHAPTER 6– Theming**

### **6.1 Theming**

One of the goals set forth by the Flood Control District is the desire to develop flood control methods that are context sensitive. There are three components utilized to develop an implementation plan for flood control methods that are context sensitive. The first step is to understand the environment in which the flood control measures will be integrated. The data collection process, including the scenery resource assessment, the biological assessment and the cultural assessment are key components in understanding the study area environment. The second is to inventory the types of flood control methods that can be used and determine their compatibility with the existing environment. The third is to apply the appropriate Context Sensitive Landscape Design Themes that has been developed by the Flood Control District. Once a context sensitive method is agreed upon, a specific theme(s) is utilized to tie the project together visually and create or reinforce community pride.

### **6.2 Context Sensitive Landscape Design Theme**

The planning and design of flood control facilities to preserve the natural beauty of Sonoran Desert landscapes and protect local community character is a primary goal of the Flood Control District’s landscaping and aesthetic treatment policy.

The identification of landscape design themes based upon the character of the landscape is an important early step in the planning and design of flood control facilities to be context sensitive with the visual environments of Maricopa County. Landscape design themes are established to identify the desired overall “look” for flood control projects in specific landscape settings and to serve as a basis for establishing a cohesive set of landscape design guidelines for project design that address appropriate scale, landform grading, plant materials selection and arrangement, and use of other materials, forms, colors and textures, to achieve the desired appearance.

Listed below are ten general landscape design themes for possible application to flood control projects located within Sonoran Desert Landscapes in Maricopa County. The first five themes apply to natural, rural and industrial landscape settings in Maricopa County. The next four themes apply principally to suburban and urban desert settings and the last theme usually will apply only to urban settings.

It is recognized that additional landscape design themes may be desired based upon historic or planned future landscape character. It is further recognized that DISTRICT flood control requirements and recreational, wildlife, cultural, and other multiple-use program requirements may strongly influence or dictate the selection of landscape design themes for particular flood control projects. The ten landscape themes presented below

are intended to serve as a framework and starting point for development of more refined landscape design themes, as needed, during project planning and design studies for application to specific landscape settings. The ten themes are:

1. Natural Desert Uplands Theme
2. Natural Desert Uplands Riparian Theme
3. Natural Lower Sonoran Desert Theme
4. Natural Lower Sonoran Desert Riparian Theme
5. Natural Sonoran Desert Hydro Riparian Theme
6. Semi-Natural Sonoran Desert Landscape Design Theme
7. Enhanced Desert Landscape Design Theme
8. Semi-Park Landscape Design Theme
9. Desert Oasis Landscape Design Theme
10. Urban Plaza Landscape Design Theme

Landscape Design Theme Descriptions can be found in the *Landscape Design Themes Handbook – Guidelines for Identification and Selection of Landscape Design Themes for Application to Flood Control Projects* published by the Flood Control District in July of 2007.

In order to address one of the unique aspects of the Buckeye ADMP Study Area an eleventh design theme had to be developed in order to address the area between the White Tanks Wash and the Hassayampa River.

#### **Natural Dissected Slope Desert Theme**

- Flood control facilities are sized and shaped to replicate and accentuate the scale of the landscape within the Dissected Slope unit.
- The overall form of flood control structures are inspired by the physical characteristics of drainage features found
- Plant materials to include, native species that reinforce and accentuate the overall integrity of the rural experience within the study area.
- This theme is context sensitive within the Dissected Slope unit within the Buckeye ADMP study area.



**Natural Dissected Slope Channel**

## 6.3 Recreation and Open Space Based Themes

### Trail Connectivity Landscape Design Theme

- Flood control facilities are sized and configured to be in scale with the structural features and spaces that are typically found within the surrounding setting.
- The overall form of flood control structure purpose is to foster and enhance the trail system throughout the study area.
- Surface treatments predominantly will be determined by landscape character and can include concrete, stabilized decomposed granite and other surfaces.
- Plant materials include a variety of native and introduced species that are employed for shade and connectivity.
- This theme is purpose driven



### Sports Field Landscape Design Theme

- Flood control facilities are sized and configured to be in scale with the structural features and spaces that are typically found within the surrounding setting.
- The overall form of flood control structure purpose is to accommodate the sports field, drainage features found within this theme are often specific to the scale needed for sports field design.
- Surface treatments will include turf and trees that provide shade canopy.
- Plant materials include a variety of native and introduced species that are employed for shade and enhancement of the sports field.
- This theme is purpose driven



### Park Landscape Design Theme

- Flood control facilities are sized and configured to be in scale with the structural features and spaces that are typically found within the surrounding setting.
- The overall form of flood control structure purpose is to provide active and passive recreation opportunities.
- Surface treatments will be determined by landscape character and specific theme.
- Plant materials include a variety of native and introduced species that are employed for special effects, shade and spatial definition.
- This theme is purpose driven



### 6.4 Project Aesthetic Advisory Committee suggested Themes

The first PAAC meeting, was held at the Town of Buckeye and was attended by Valerie Swick, Jon Loxley, Jen Pokorski, Brian Fry, Don Holman, Dave Showen, Kyle Tjader, Jackie Mack, Michael Zorba, Byron Sampson, Diane McCloskey, Devin Kugler, Shane Hanneman, Avery Oltmanns. The meeting was kicked off with the word “Buckeye” as the original identifier word.

The identifier words that describe “Buckeye” receiving final votes are as follows:

**Meeting - Town of Buckeye**

5	River	1	Life
5	Canal	1	Neighbors
5	Irrigation	1	Friendly
5	Recreation	1	Equestrian
4	Main Street	1	County Fair
3	Heritage	1	Festive
3	Work Landscape	1	Harvest
3	Flat	1	Cotton
3	Opportunity	1	H20
3	Rural Land Use	1	Ranch
2	Water	1	Productive
2	Fish	1	Homestead
2	Canoeing	1	Views
2	Assessable	1	Freedom
1	Settlement	1	Unique

The design team will take the strong identifier words that were gleaned from each meeting and brainstorm ways to convey them onto the physical environment. In order to start on this step, a list of physical elements needed as part of providing flood control have been listed. The following was derived at the conclusion of the Olsson Associates meeting:

Headwall, weir, drop structure, railing, erosion control, levee, grading, retention basins, bank terracing, revegetation, irrigation, storm drain, channels, trail surfacing, culverts, road crossings, access/ maintenance roads, lighting, signage, walls, containment structures, basin, spillways, energy dissipaters, flood retarding structures.

**6.5 Wildlife Resources Based Themes**

**Wildlife Corridor Preservation Theme**

- Flood control channels are sized and configured to replicate the scale and accentuate the form of drainage features found in the River Lands landscape character subtype.
- Their overall form typically accenuates and exaggerates the natural landfoms, drainage and vegetation species and patterns found within the subtype while paying attention to the wildlife needs.
- Surface treatments will be used to replicated plant densities and patterns that are necessary for corridor preservation.
- This theme is designed to be context sensitive as well as purpose driven.



### **Sensitive Species Habitat Preservation**

- Flood control facilities are sized and configured to be in scale with the structural features and spaces that are typically found within the surrounding setting.
- The overall form of flood control structures is inspired by the natural physical characteristics of drainage features found within the Sonoran Desert Character Type and built to mimick the naturally occuring drainage. It needs to be noted that some sensitive species will need areas that mimick the unnatural earthen berms of the canals to preserve habitat and those areas should be dealt with seperately.
- Surface treatments will be determined by the surrounding landscape character and have minimal disturbance with the exception of those species that need the unnatural earthen berms.
- Plant materials include a variety of native and introduced species that are employed for cover, protection and support of wildlife species.
- This theme is designed to be context sensitive as well as purpose driven.



## **6.6 Historic and Cultural Resources Based Themes**

### **Prehistoric Design Theme**

- Flood control structures are sized and configured to replicate the scale and accentuate the form of drainage features found in the archeological records of the study area. The overall form of flood control structures typically references the prehistoric built environment.
- Surface treatments will be methods and materials that references those available in prehistoric times. (Rock art trail markers etc.)
- Plant materials include a variety of native species that would have been present.
- This theme is designed to be context sensitive as well as purpose driven.

### **Historic Design Theme**

- Flood control channels and basins are sized and configured to replicate the scale and accentuate the form of drainage features found in the study area in the past.
- The overall form of flood control structures accentuates and exaggerates the forms of the historic drainage features found in the study area to create additional landscape variety and visual interest.

- Surface treatments will be methods and materials that reference those reminiscent of ‘Historic Buckeye Valley’.
- Plant materials include a variety of native and introduced species that are employed to restore historic landscapes within the study area. (ie. Cottonwoods lining the canals.)
- This theme is designed to be context sensitive as well as purpose driven.

## 6.7 Project Visioning Exercise Derived Themes

The project visioning meeting was held in the Olsson Associates office and was attended by Valerie Swick, Diane Stuart, Pedro Melo-Rodriquez, Brian Fry, Shane Hanneman, Jeff Kratzke, Avery Oltmans, Joy Dunlap, Randall Kopff, Brian Murphy, and Dawn Krider. The meeting was kicked off with the word “Buckeye” as the original identifier word.

The identifier words that describe “Buckeye” receiving final votes are as follows:

### Meeting - Olsson Associates Office

10 Irrigation	2 Flowers
10 Historic Streetscape Restoration	2 Density
9 Ceramics / Crafts	2 Cultural Gathering Place
7 Railroad	2 Water
7 Annual Helzapoppin Rodeo	1 Multi-Purpose
7 Pioneer Pride	1 Connectivity
6 Farming / Agriculture	1 Sense of Place / Landmark
6 Blacksmith / Ironwork	1 Change / Modernization
5 Recreation Site	1 Hard Work
5 Wildlife Corridor	1 History
4 Old Main Street	1 Water Source
4 Minerals / Flora / Farm	1 Auto Courts
4 Hispanic Influence / Vaquero	1 Prehistoric Trade Center
4 Canal Irrigation	1 Hohokom
3 Allenville	1 Coffee Shop
3 Open Fields	1 Riparian
4 Cotton / Alfalfa	1 Gila
3 Confluence	1 Larger Trees
2 Steel	1 Birds
2 Connected Communities	1 Green
2 Miracle Mile (small town focus)	1 Quarry
2 Craftsman / Art Deco	1 Ranching
2 Homesteading	

## **Glossary**

GIS = Geographic Information System

LRIA = Landscape Resource Inventory and Analysis

Massing = Landscape Architecture term meaning large stands of vegetation

RDI = Roosevelt Irrigation District

SRA = Scenery Resource Analysis

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