

NORTH PEORIA AREA DRAINAGE MASTER PLAN

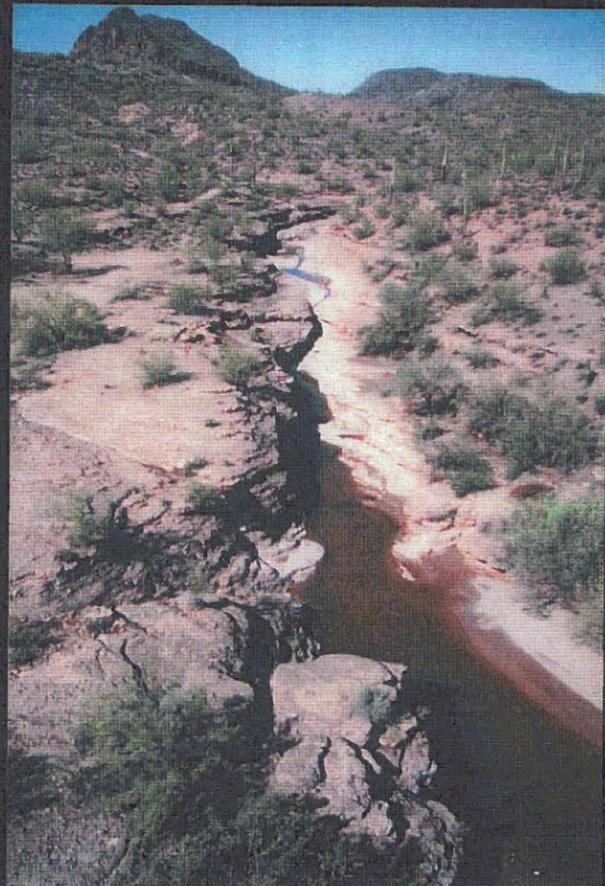
Prepared for the
Flood Control District
of Maricopa County



and the
City of Peoria



Project No. 82000146
Contract FCD 99-45



Attachment 5
Multiple Use
Opportunities
Assessment Report

BOOK 1 of 1
January 2002

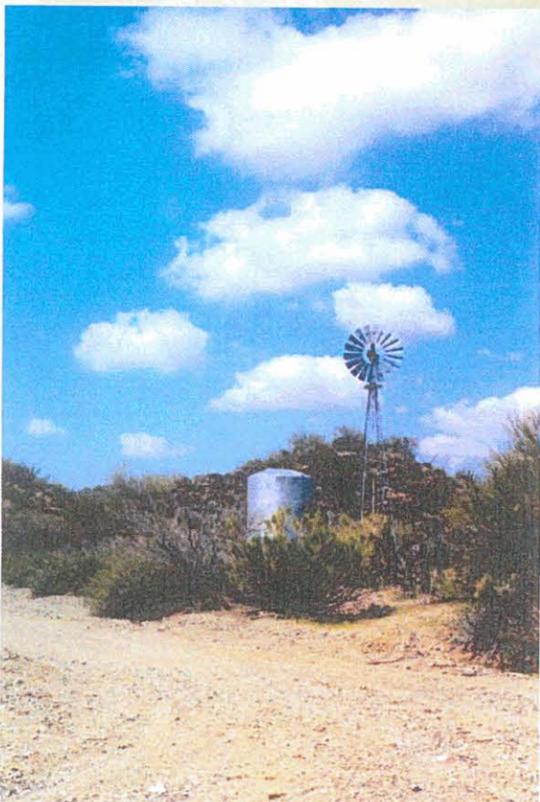
North Peoria
AREA DRAINAGE MASTER PLAN

Multiple Use Opportunities Assessment

Prepared For:
The Flood Control District of Maricopa County

Prepared By:
DFD

January 22, 2002



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TABLE OF CONTENTS

TABLE OF CONTENTS	i
1. INTRODUCTION AND PURPOSE	1
2. BACKGROUND.....	1
2.1 OVERVIEW	1
2.2 LAND OWNERSHIP	1
2.3 UNDERWAY PLANS AND STUDIES.....	1
• Land Ownership Map	3
• Underway Plans and Studies Map	4
• National and Statewide Context Map	5
3. RECREATION RESOURCES CONTEXT	6
3.1 NATIONAL/STATEWIDE CONTEXT	6
3.2 REGIONAL CONTEXT	7
3.3 LOCAL CONTEXT.....	7
• Regional Context Map.....	8
4. EXISTING AND PLANNED RECREATION RESOURCES WITHIN THE STUDY AREA	9
4.1 OVERVIEW OF RECREATION RESOURCES WITHIN THE STUDY AREA	9
4.2 MANAGED/IDENTIFIED RESOURCES	9
4.2.1 Bureau of Land Management	9
• Management Areas Map.....	12
4.2.2 CITY OF PEORIA	13
4.2.3 PRIVATE DEVELOPMENT	17
4.2.4 MARICOPA COUNTY.....	19
• Open Space, Parks and Golf Courses Within the Study Area Map.....	20
• Trails Within the Study Area Map	21
5. OPPORTUNITIES FOR PROTECTION OR RESTORATION	22
6. APPROPRIATE MULTIPLE-USE OPPORTUNITIES.....	23
6.1 Background and Introduction	23
• Potential Wash Corridor Trail Systems Map	24
6.2 Opportunities Discussion and Plan Recommendations.....	25
7. POSSIBLE PARTNERS AND FUNDING SOURCES	28
Introduction.....	28
8. TRAIL DESIGN GUIDELINES	57
8.1 INTRODUCTION	57
8.2 TRAILS AND TRAILHEADS.....	57
8.3 VEGETATION AND VIEWS CONSERVATION	60

1. INTRODUCTION AND PURPOSE

This portion of the report inventories existing and planned parks and recreation resources within the North Peoria Area Drainage Master Plan (ADMP) Study Area (herein after will be referred to as "Study Area"). Opportunities to use flood control facilities to enhance or complement these resources were addressed during the alternatives phase of the project. Final recommendations for specific multiple-use facilities are provided in the recommended ADMP.

Information contained in this report was obtained from field observation, published plans and documents, and interviews with staff and elected officials representing Peoria, Maricopa County, state and federal agencies.

2. BACKGROUND

The approximately 73-square mile North Peoria Area Drainage Master Plan Study Area includes substantial open space and recreation resources and opportunities.

2.1 OVERVIEW

Historically, a large portion of this area was owned by the Bureau of Land Management and considered by the public as largely unregulated open space. As a result of the Saguaro National Park Land Exchange, a substantial portion of the Study Area south of State Route 74 (approximately 4,322 acres known as Saddleback Heights) was transferred to private ownership, with agreements that some areas would be reserved as open space for public use. The area transferred to private ownership is master planned for three new communities. Other private development master plans as well as Maricopa County and the City of Peoria master plans have been or are in the process of being developed in the Study Area. These master plans are addressed in this report in Sections 4.2.2, 4.2.3 and 4.2.4.

Coincident with the Land Exchange, the City of Peoria developed two plans to provide trails, open space and rivers and washes within its corporate limits. Portions of the open spaces and trails identified in the City of Peoria plans are located in the Study Area, and are addressed in Section 4.2.2 of this analysis under rivers and trails.

A portion of the Study Area includes unincorporated land in Maricopa County. Since the initiation of this study, the County has kicked-off the Maricopa County Regional Trail System effort. This effort is designed to identify region-wide trails throughout Maricopa County. The Maricopa County Trail effort is discussed in Section 4.2.4. Maricopa County is also updating the Open Space Element of its General Plan. This effort is discussed in Section 2.3: *Underway Plans and Studies*.

2.2 LAND OWNERSHIP

The Study Area includes land managed by the City of Peoria, the Bureau of Land Management, the State Land Department and Maricopa County. Land ownership is shown on Map 1.

2.3 UNDERWAY PLANS AND STUDIES

Flood Control District of Maricopa County Agua Fria Watercourse Master Plan

Prior to the initiation of this study, the Flood Control District of Maricopa County started the Agua Fria Watercourse Master Plan. The Master Plan examines opportunities for multiple-use flood control facilities within the Agua Fria watershed. This Plan will identify multiple purpose flood control techniques along the Agua Fria River from Lake Pleasant to the Gila River. This plan should be complete by 2002. It, in combination with the Maricopa Association of Governments West Valley Multi-Modal Transportation Corridor Master Plan (discussed below), is considered part of the West Valley Rivers Project.

West Valley Multi-Modal Transportation Corridor Master Plan

The Maricopa Association of Governments has completed a non-motorized transportation plan for the New River. This plan will address linkages and transportation opportunities for the New River from its confluence with the Agua Fria River, and south along the Agua Fria River to the Gila River. The Multi-Modal Transportation Corridor Master Plan and the Agua Fria Watercourse Master Plan (discussed above) are being coordinated as the *West Valley Rivers*. This plan should be complete by the end of 2001 (shown on Map 2).

Maricopa Association of Governments Desert Spaces Plan

The Desert Spaces Plan, adopted by the Maricopa Association of Governments in 1995 identifies the Agua Fria River and areas also identified by Peoria as planned open space for retention or conservation. In 2000 MAG adopted Design Guidelines for these retention areas (Map 2).

City of Peoria General Plan Update

The City of Peoria has recently updated its General Plan. The General Plan identifies 54,900 acres of dedicated open space within the Study Area. This area consists entirely of the Bureau of Land Management, Bureau of Reclamation and Maricopa County held lands (including Lake Pleasant).¹ Additionally, the Plan includes large areas within the Area Drainage Master Plan Study Area to be designated P/OS (park/open space). The City of Peoria General Plan land use map (park/open space) designation “denotes areas that are to be precluded from development except for open space and recreational facilities. Open space areas should remain in a relatively natural state (or be restored to such) due to topographic or other natural conditions. State Trust Lands or privately held lands identified as park or open space may be developed at a maximum density of one dwelling unit per acre per state legislative requirements.”

City of Peoria Parks, Recreation and Open Space Master Plan

This plan was completed in 1996. It addresses parks and recreation needs for the City through buildout. This Plan is being revised with the update of the City’s General Plan.

City of Peoria Rivers Master Plan

The City of Peoria Rivers Master Plan was adopted in January, 1999. This plan is considered and incorporated into the City General Plan currently under public review. This plan is described in the report, Section 4.2.2 CITY OF PEORIA, Rivers.

City of Peoria Trails Master Plan

The City of Peoria Trails Master Plan was adopted in January, 1999. This plan is considered and incorporated into the City General Plan currently under public review. This plan is described in the report, Section 4.2.2 CITY OF PEORIA, Rivers.

Saddleback Heights Planned Community District

The 5,247-acre Saddleback Heights Master Plan proposes 7,244 dwelling units with an overall residential density of 1.12 dwelling units per acre and 2,720,454 square feet of retail, employment and industrial uses. Approximately 29.3% of the project will be conserved as non-golf course open space.² This Plan is under review by Peoria and is described in Section 4.2.3 PRIVATE DEVELOPMENT.

Lakeland Village Master Plan

Lakeland Villages is a 3,121-acre Master Plan that proposes 9,356 dwelling units with an overall residential density of three units per gross acres. Approximately 382 acres are proposed for commercial uses.³ This Plan is under review by Peoria and is described in Section 4.2.3 PRIVATE DEVELOPMENT.

White Peaks Ranch Planned Community District

White Peaks Ranch is a 3,985-acre Master Plan that proposes 2.16 dwelling units per acres. Approximately 1,427 acres are planned as open space/golf course.⁴ This plan is approved by Maricopa County and is described in Section 4.2.3 PRIVATE DEVELOPMENT.

Maricopa County Regional Trail System

The Maricopa County Regional Trail System is described in Section 4.2.4 MARICOPA COUNTY.

¹ City of Peoria adopted Peoria General Plan, January 2001. Page 2-19.

² Saddleback Heights Planned Community District. 9.26.2000.

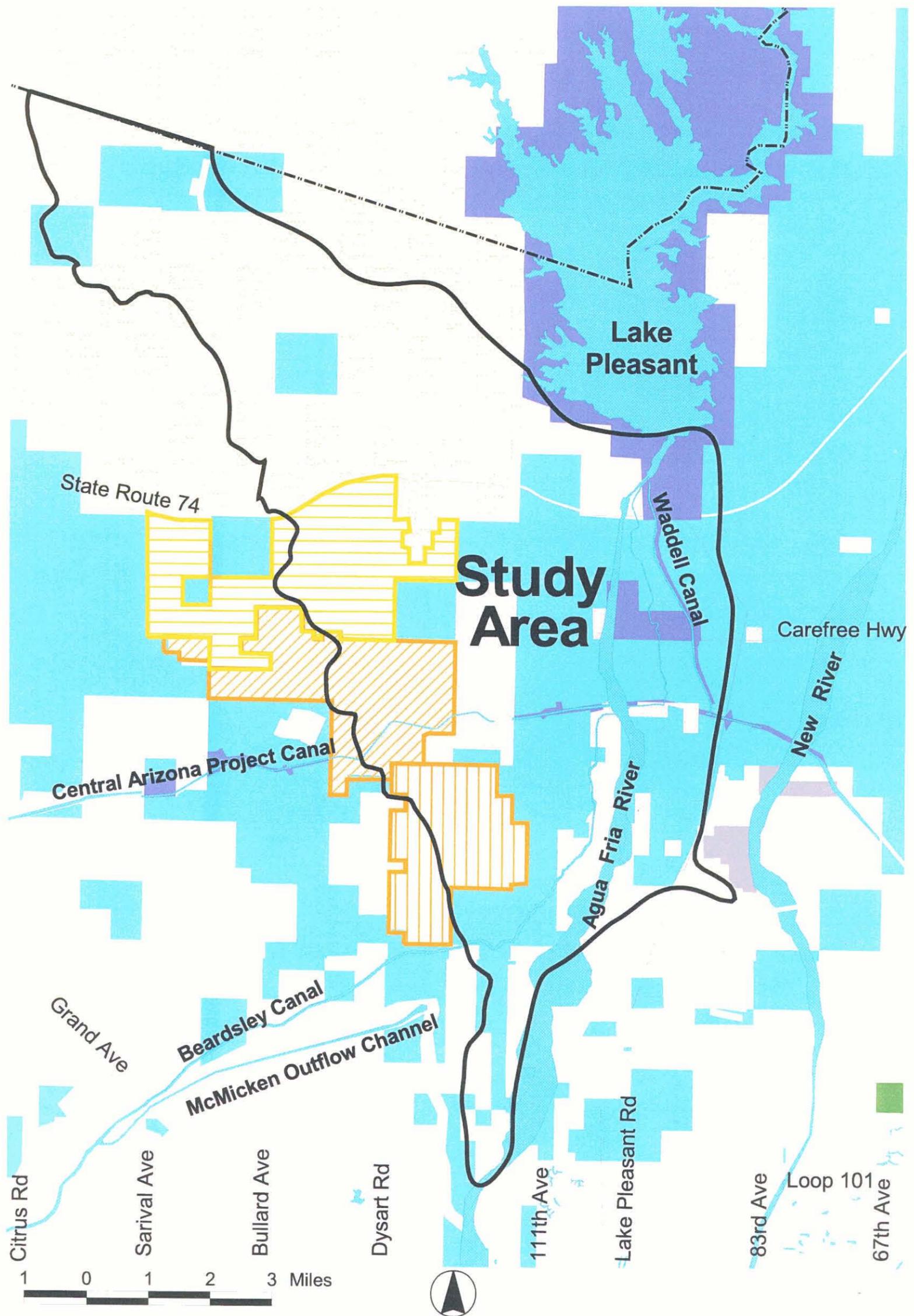
³ Lakeland Village Master Planned Community Development Master Plan and Zoning. 7.12.2000

⁴ White Peak Ranch Planned Community District. 9.1.2000.

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Land Ownership

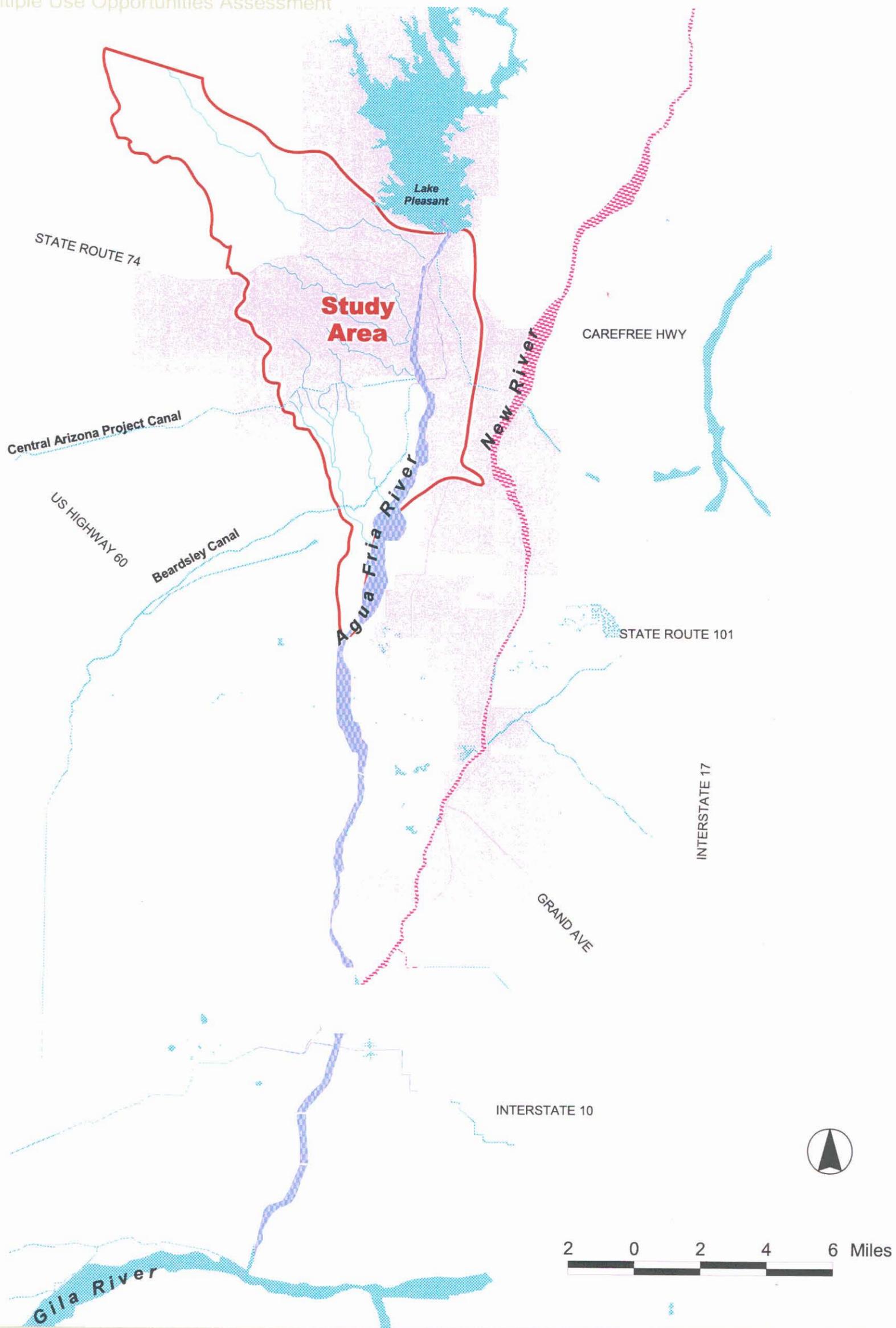
- | | | | | | |
|---|---------------------------|---|---------------------------|---|------------------------|
|  | State Trust |  | Private |  | Saddleback Heights PCD |
|  | Bureau of Land Management |  | State & County Parks |  | White Peak Ranch PCD |
|  | Bureau of Reclamation |  | Rivers, Canals and Washes |  | Lakeland Village PCD |
|  | County |  | County Line | | |



North Peoria

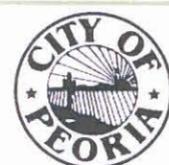
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Underway Plans and Studies

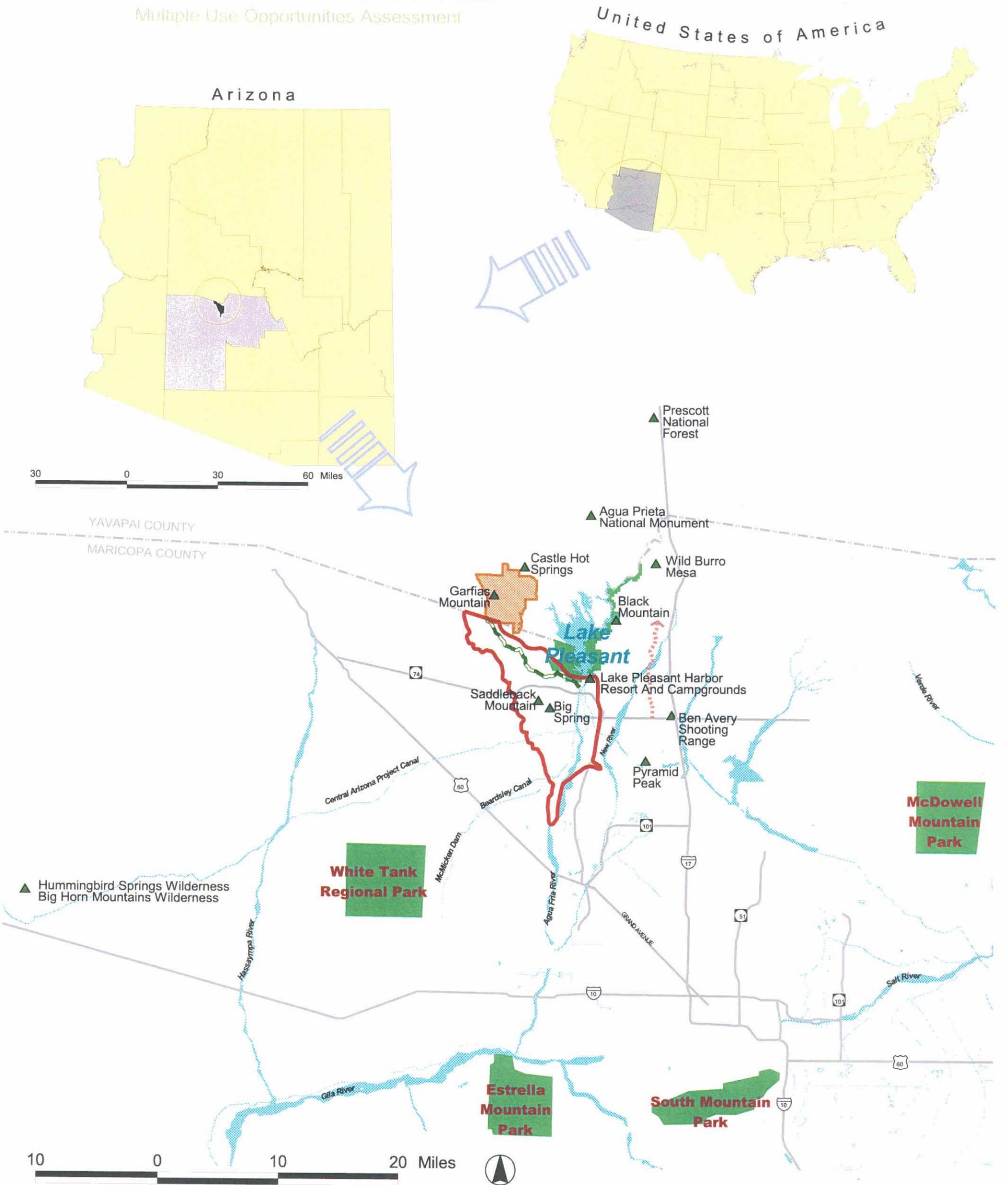
-  Maricopa Association of Governments West Valley Multi-Modal Transportation Corridor Plan
-  Flood Control District of Maricopa County Agua Fria Watercourse Master Plan
-  Rivers, Canals and Washes
-  City of Peoria General Plan Update
-  Maricopa County Comprehensive Plan Update



North Peoria

AREA DRAINAGE MASTER PLAN

Multiple Use Opportunities Assessment



National and Statewide Context

- | | | | |
|---|---------------------------|---|-------------------------|
|  | Study Area |  | Regional Parks |
|  | Rivers, Canals and Washes |  | Hells Canyon Wilderness |
|  | Resource Area |  | Black Canyon Trail |
| | |  | Morgan City Wash |



3. RECREATION RESOURCES CONTEXT

3.1 NATIONAL/STATEWIDE CONTEXT

The North Peoria Area Drainage Master Plan area is located in the north-central portion of Maricopa County. The newly designated Agua Prieta National Monument is approximately 15 miles north of the Study Area. The 71,000 acre monument comprises two mesas (Perry Mesa and the adjacent, smaller Black Mesa), the public land to the north of these mesas, and a portion of the Agua Fria River Canyon.⁵

The prominent connections between the monument and the Study Area are the Black Canyon Trail and the Agua Fria River north of Lake Pleasant. The Trail was used mainly by valley woolgrowers to herd sheep to and from their summer range in the Bradshaw Mountains and the Black Hills. The Espil family of Litchfield Park herded the last sheep on the trail in 1974. The Secretary of the Interior dedicated the Black Canyon Stock Driveway on January 3, 1969 as the Black Canyon Trails Area. This Area is identified in the Bureau of Land Management Resource Management Plan as a cooperative recreation management agreement with Maricopa and Yavapai Counties, and a cooperative management agreement was signed between Maricopa and Yavapai Counties and the Bureau of Land Management on May 14, 1987. The Black Canyon Trail termini are located just west of the Ben Avery Shooting Range at State Route 74 and the Prescott National Forest near Interstate 17 and the Dugas Road interchange. A trailhead exists at the State Route 74 terminus.



State Route 74 extends east-west through the middle of the study area.

Other statewide recreation resources proximate to the Study Area include the Bureau of Land Management Wild Burro Preserve and Wild Burro Mesa, which are north of the Study Area on the east side of Lake Pleasant. The 9,311-acre Hell's Canyon Wilderness Area in Yavapai County is adjacent to the Study Area, and in two limited areas the wilderness extends into the Study Area and Maricopa County.⁶



Hells Canyon Wilderness Area has 9,311 acres that include several trails, with trailheads located at the perimeter.

Approximately fifty miles west of the Study Area is the Hummingbird Springs Wilderness, joined to the Study Area from the west by the Central Arizona Project (CAP). To the east the CAP extends from the Study Area through Scottsdale, the East Valley and Southern Arizona. While the CAP is not open to the public, it serves as a visual connection between the recreation resources in the Study Area and other locations within the state. The CAP is also identified as the alignment of the Maricopa County Trail.

Active recreation resources include the Ben Avery Shooting Range (north of State Route 74). The Range is outside the Study Area to the northeast. The Ben Avery Shooting facility covers 1,650 acres and is the largest public operated shooting facility in the country. The facility provides a 54 point covered Main Range; 16 Specialty Rifle and Pistol Ranges; five field Archery Ranges and a FITA Range; a Clay Target Center; a 99-site improved campground, conference and training buildings; and a Hunter Education Center. It is owned by the citizens of Arizona and operated by the Arizona Game and Fish Department in cooperation with Arizona State Rifle and Pistol Association and other user groups.⁷ The range hosts several specialty ranges and buildings that are used for national, regional, state, and local club matches and events. (National/Statewide Context is shown on Map 3).

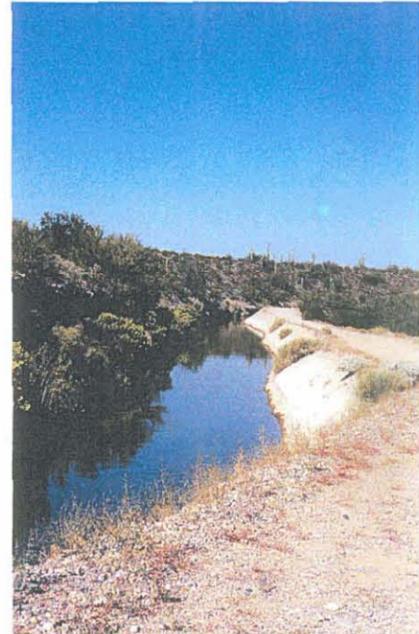
⁵ U.S. Department of the Interior Bureau of Land Management Phoenix Field Office Fact Sheet: [Agua Fria National Monument](#).

⁶ The Hell's Canyon Wilderness Area, established under the Wilderness Act of 1964 (Public Law 88-577) and the Arizona Desert Wilderness Act of 1990 (Public Law 101-628) enacted November 28, 1990.

⁷ Arizona Game and Fish Department

3.2 REGIONAL CONTEXT

Regional passive recreation resources are shown on Map 4. Passive recreation resources provide opportunities for non-structured activities such as hiking, bicycling, birdwatching, and interpretation. Resources outside the Study Area are connected to the Study Area by Lake Pleasant, the Beardsley Canal, the McMicken Dam Outfall Channel, the Agua Fria River, and the Morgan City Wash. These resources include the privately owned Castle Hot Springs and the publicly owned Garias Mountain (Yavapai County). The current owners of Castle Hot Springs plan to renovate the property and return it to its original use as a resort. Pyramid Peak and Black Mountain, located within Maricopa County, are publicly owned resources that are also proximate to the Study Area and provide regional passive recreation opportunities. The Beardsley Canal and the McMicken Dam Outfall Channel connect to White Tank Park, owned and Managed by Maricopa County. The Beardsley Canal is owned by the Maricopa Water District and at this time does not provide any public access. Portions of the canal are above ground and piped. The McMicken Dam Outfall Channel is owned by the Flood Control District of Maricopa County and is planned to be part of the Maricopa County Regional Trail System. The Maricopa County owned White Tank Mountain Regional Park totals 26,337 acres – making it the largest park in the County system. Most of the park is made up of the White Tank Mountains, which is a freestanding range separating the Phoenix Basin of the Salt River Valley from the Hassayampa Plain. The range rises sharply from its base, at 1,400 feet above sea level, in a series of rocky ridges and fault lines to peaks of over 4,000 feet. The base and upper levels of the mountain are deeply serrated with ridges and deep canyons.



The Beardsley Canal connects the study area to other recreation resources in the state.



The Pleasant Valley Airport provides an opportunity for airplane gliding.

Just north of the Study Area, and associated with Lake Pleasant, are the publicly owned and privately operated Pleasant Harbor Resort and Campgrounds and the Lake Pleasant Regional Park and Marina. The privately owned Canyon Raceway and Pleasant Valley Airport, within and to the east of the Study Area, provide opportunities for dirt-bike racing and airplane gliding, respectively. The Pleasant Valley Airport may be under consideration as a regional facility.

The Sun Circle Trail is planned for the Agua Fria and New Rivers between the Gila River and the Central Arizona Project Canal. No specific alignment for the trail exists.

3.3 LOCAL CONTEXT

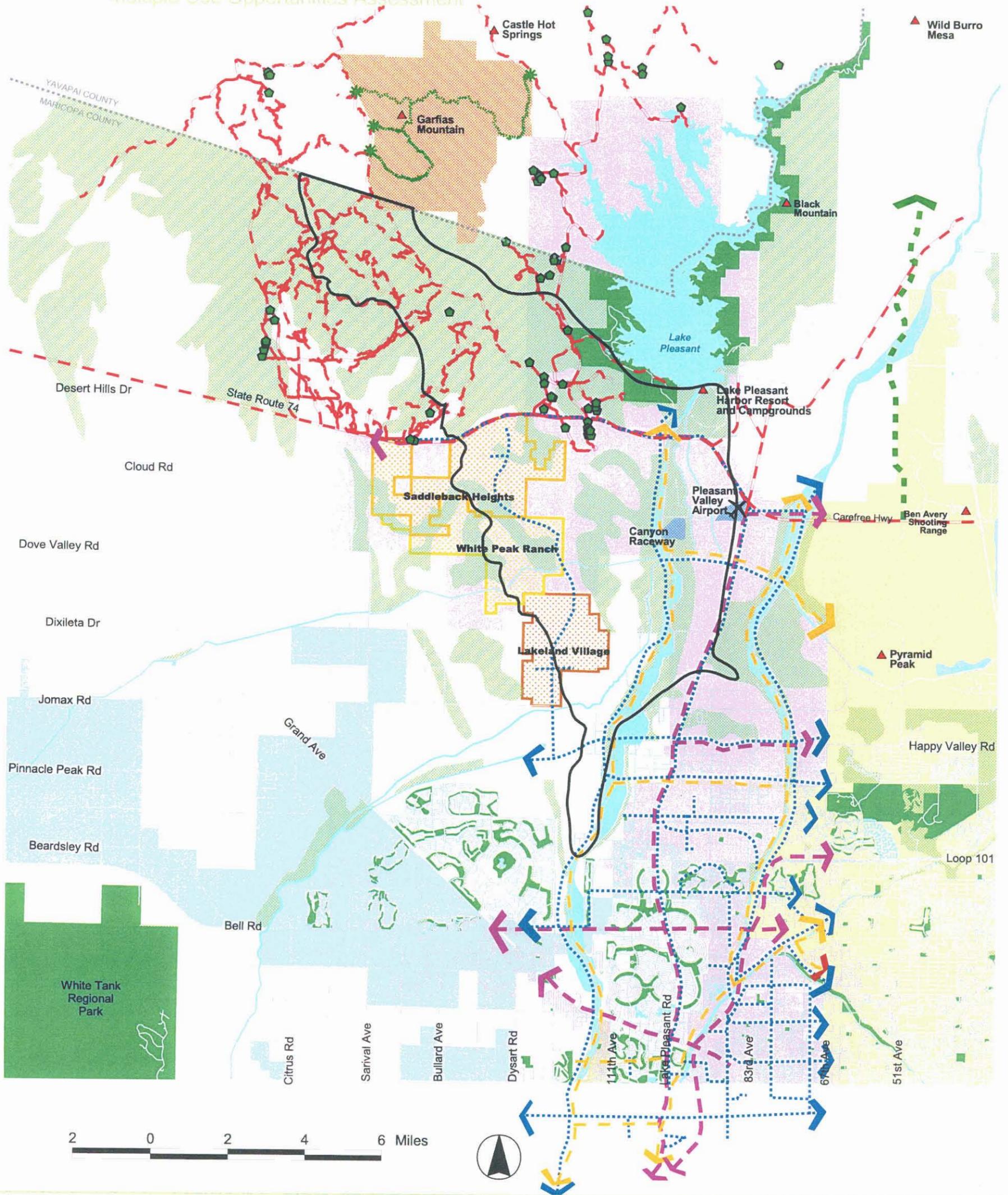
The Study Area is primarily undeveloped desert, however, residential development does exist south of the Beardsley Canal. The area west of the Study Area is undeveloped and is used for recreation contiguously with the Study Area. North of the Study Area is Lake Pleasant, which attracts the majority of recreational users. West of the Study Area at approximately Grand Avenue and Dove Valley Road is the Chrysler Proving Ground. The proving ground is not open to the public.

Primary vehicular access to the County owned Lake Pleasant Regional Park is via State Route 74, located in the northern third of the Study Area.

North Peoria

AREA DRAINAGE MASTER PLAN

Multiple Use Opportunities Assessment



Regional Context

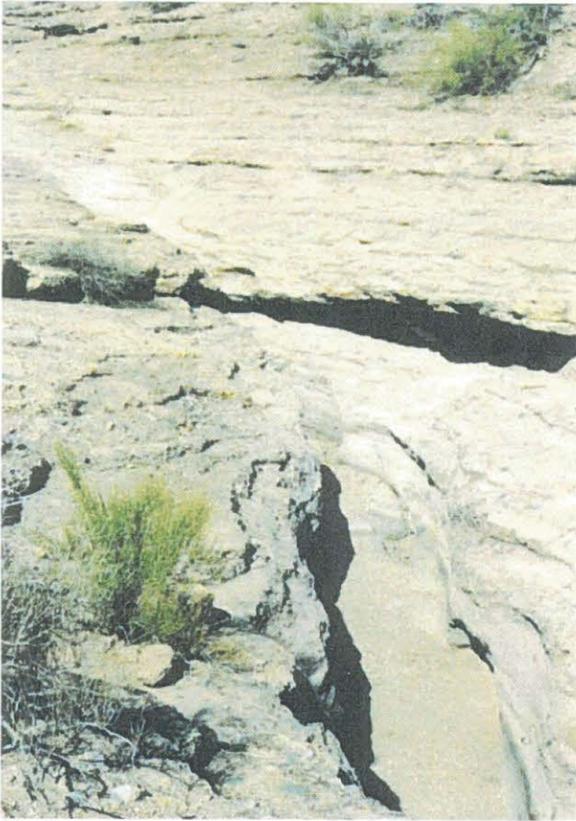
	Study Area		Recreational Open Space		Black Canyon Trail
	County		Planned Recreational Open Space		BLM Non-Motorized Trails
	Peoria		Hells Canyon Wilderness		BLM Access Guide Routes
	Phoenix		Rivers, Canals and Washes		Multi-Use Trail
	Glendale		Resource Area		Equestrian Trail
	Surprise		Campsite		Bike Route
	El Mirage		Trailhead		
	Youngtown				



4. EXISTING AND PLANNED RECREATION RESOURCES WITHIN THE STUDY AREA

The purpose of this section is to identify existing and planned resources and management philosophies and goals of each managing entity within the Study Area so that the extent to which flood control facilities could be used to enhance and connect to these resources can be identified.

4.1 OVERVIEW OF RECREATION RESOURCES WITHIN THE STUDY AREA



Big Spring is a well known natural feature within the study area.

The Morgan City Wash and Agua Fria River are the primary natural features that are used for recreation within the Study Area. The washes appear to be regularly used for off-road recreation. Other well known natural features within the Study Area include Big Springs, Morgan City Wash and Saddleback Mountain.

Dirt roads are evident throughout the Study Area and connect to several informal passive recreation areas south and north of State Route 74.

The portion of the Study Area north of the Beardsley Canal to its intersection with the CAP and north of the CAP is also open to hunting (zone 20B) outside of the Peoria City limits. It is anticipated that this recreation use will be eliminated as development occurs or if this land is incorporated.

Map 4, Regional Context illustrates the resources identified in this Section.

4.2 MANAGED/IDENTIFIED RESOURCES

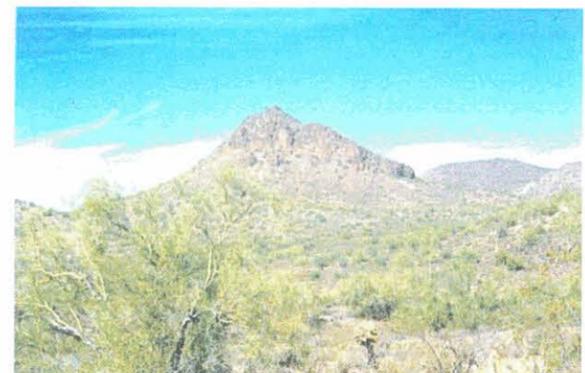
Resources, and the management goals and policies for these resources, are discussed below. When applicable, National Parks and Recreation resource categories are used.

4.2.1 Bureau of Land Management

Urban Greenspace/Open Space

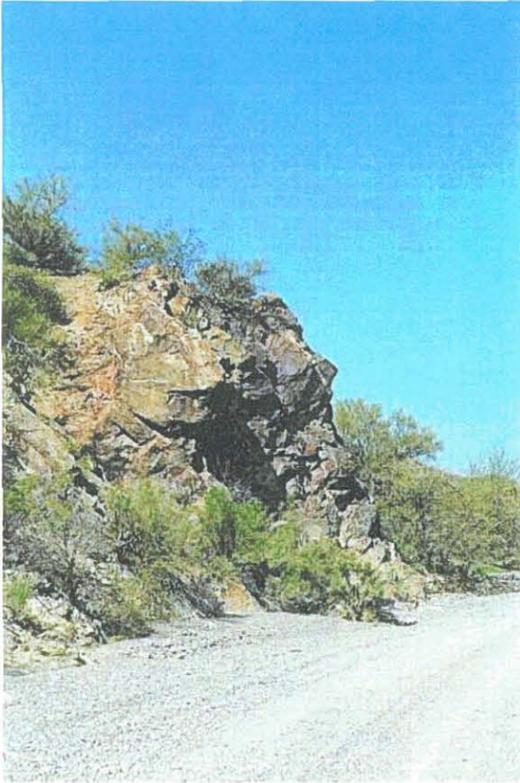
Bureau of Land Management Open Space Management Direction

The land held by the Bureau of Land Management within the Study Area is, in part, Wilderness Area and is governed by the 1988 Wilderness Area Plan for this area. The Wilderness Area is shown on Map 5. The Environmental Impact Statement (EIS) and Management Plan for the Study Area states: "Outstanding opportunities exist for solitude and primitive recreation throughout much of the wilderness because of topographic and vegetative features. Numerous washes, canyons and peaks provide visitors with opportunities for seclusion. The predominantly mountainous terrain offers opportunities for rock climbing, hiking and sightseeing. Known trails totals more than 10 miles and traverse mountain, canyon and bajada environments." "The trail system provides the visitor with spectacular, pristine views of Sonoran Desert canyons and cliffs. Lake Pleasant is visible from trail vistas in the eastern portions of the wilderness. Trails follow former vehicle routes or canyon corridors." "The Sonoran Desert landscape, geological features, wildlife and the Lake Pleasant burro heard (some individuals roam the wilderness) provide quality photographic opportunities."⁸ The Plan makes no recommendations regarding the management of land outside the Study Area. The Lake Pleasant Resource Conservation Area planning area exists within the Wilderness Area and is discussed below.



Saddleback Mountain is a well known feature in the study area.

⁸ U.S. Department of the Interior Bureau of Land Management Arizona State Office. *Hell's Canyon Wilderness Management Plan, Environmental Assessment and Decision Record*. April 1985.



Informal unmarked trail in a wash

The goals for the Wilderness Area stated in the plan are to: (1) Provide for the long-term protection and preservation of the area's wilderness character under a principle of non-degradation, (2) manage the Wilderness Area for the use and enjoyment of visitors that will leave the area unimpaired for future use and enjoyment as a wilderness, (3) to manage the Area using the minimum tool, equipment or structure necessary to successfully, safely and economically accomplish the objective and (4) manage non-conforming but accepted uses permitted by the Wilderness Act and subsequent laws in a manner that will prevent unnecessary or undue degradation of the area's wilderness character.⁹

Lake Pleasant Resource Conservation Area (RCMA) (North Central Portion)

The Bureau of Land Management 1989 Resource Management Plan and Final Environmental Impact Statement identifies a portion of the Study Area north of State Route 74 from 91st Avenue to approximately Reems Road as the Lake Pleasant Resource Conservation Area (RCMA North Central Portion). The Resource Conservation Area is shown on Map 5.

Lake Pleasant RCA Management Goals

Overall, the Bureau of Land Management goals in this area are to consolidate land holdings, limit off road vehicle use to designated roads and trails and create cooperative recreation management plans. Additionally, there are several objectives associated with the Bureau of Land Management Resource Conservation Areas. With regards to flood plain management, the RCMA plan directs federal agencies to "avoid to the extent possible the long and short term adverse impacts associated with the occupancy and modification of flood plains and to avoid direct and indirect support of flood plain development whenever there is a practicable alternative."¹⁰

Parks

Lake Pleasant Cooperative Recreation Management Area (CRMA)

The Bureau of Land Management has designated the Lake Pleasant Cooperative Recreation Management Area (CRMA) within the Lake Pleasant Resource Conservation Area. The CRMA also exists within the Wilderness Area and is shown on Map 5. The Cooperative Recreation Management Area west boundary is generally located west of 43rd Avenue. The north boundary within Maricopa County is approximately the Maricopa County/Yavapai County boundary. The south boundary is irregular and extends as far south as approximately Desert Hills Drive.

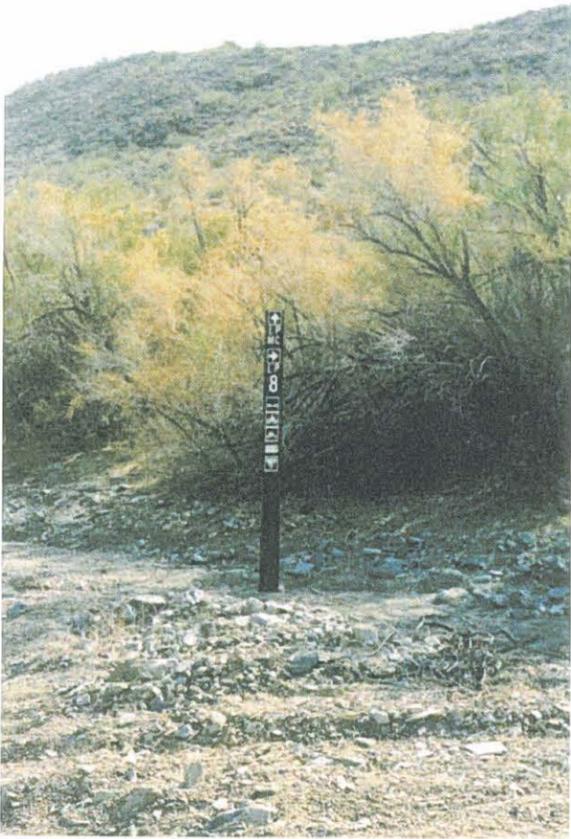
Lake Pleasant CRMA Management Goals

With regards to Cooperative Recreation Management Area designation, the Bureau of Land Management Plan states that for each CRMA, "the Bureau of Land Management and the cooperating government agency would cooperatively develop a cooperative management agreement detailing the role of each in managing recreation activities in the CRMA." For the Lake Pleasant CRMA, the Plan identifies "6,760 acres Bureau of Land Management; 29,840 acres state; 3,200 acres private. The Bureau of Land Management, Bureau of Reclamation (BOR), and Maricopa County would work to acquire up to 29,360 state acres and 2,140 acres of private land."¹¹

⁹ U.S. Department of the Interior Bureau of Land Management Arizona State Office, Hell's Canyon Wilderness Management Plan, Environmental Assessment and Decision Record. April 1985.

¹⁰ Proposed Phoenix Resource Management Plan and Final Environmental Impact Statement. December, 1992. U.S. Department of the Interior Bureau of Land Management Phoenix District, Arizona.

¹¹ Proposed Phoenix Resource Management Plan and Final Environmental Impact Statement, December 1988.



Morgan City Wash is an undesignated route that is an access opportunity for the study area.

Trails/Off Road Recreation

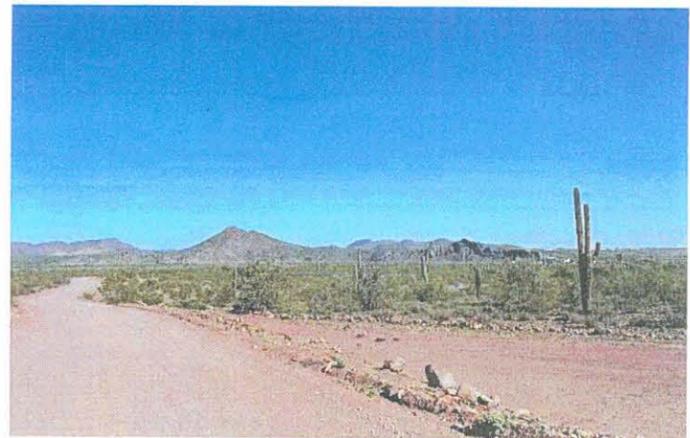
Arizona Access Guide Routes

The Bureau of Land Management has created, for information purposes, the Arizona Access Guide–Lake Pleasant Hieroglyphic Mountains. The Access Guide identifies a variety of access opportunities for the Study Area. These undesignated routes include the Morgan City Wash Road (improved and not regularly maintained) and several miles of motorcycle trails and unimproved roads. The Access Guide does not identify any hiking trails within the Study Area.

Surface Management Status Map Routes and Roads

The Bureau of Land Management 1995 Surface Management Status Maps identifies a spider–web network of unpaved roads throughout the Study Area south of State Route 74. On site observation shows that these roads are used by a variety of recreation enthusiasts. These include the road on the west side of Saddleback Mountain to Twin Buttes, and roads from the Beardsley Canal north to White Peak Mine, White Peak and Prince Mine. The Surface Management Status Map also identifies hiking trails connecting the Morgan City Wash to the area just south of State Route 74 and side routes around a small unnamed peak south of Morgan City Wash. Another trail on the south end of the Study Area starts from a dirt road north of the Beardsley Canal and leads to White Peak.

The Access Guide and Management Status Map do not include any management goals.

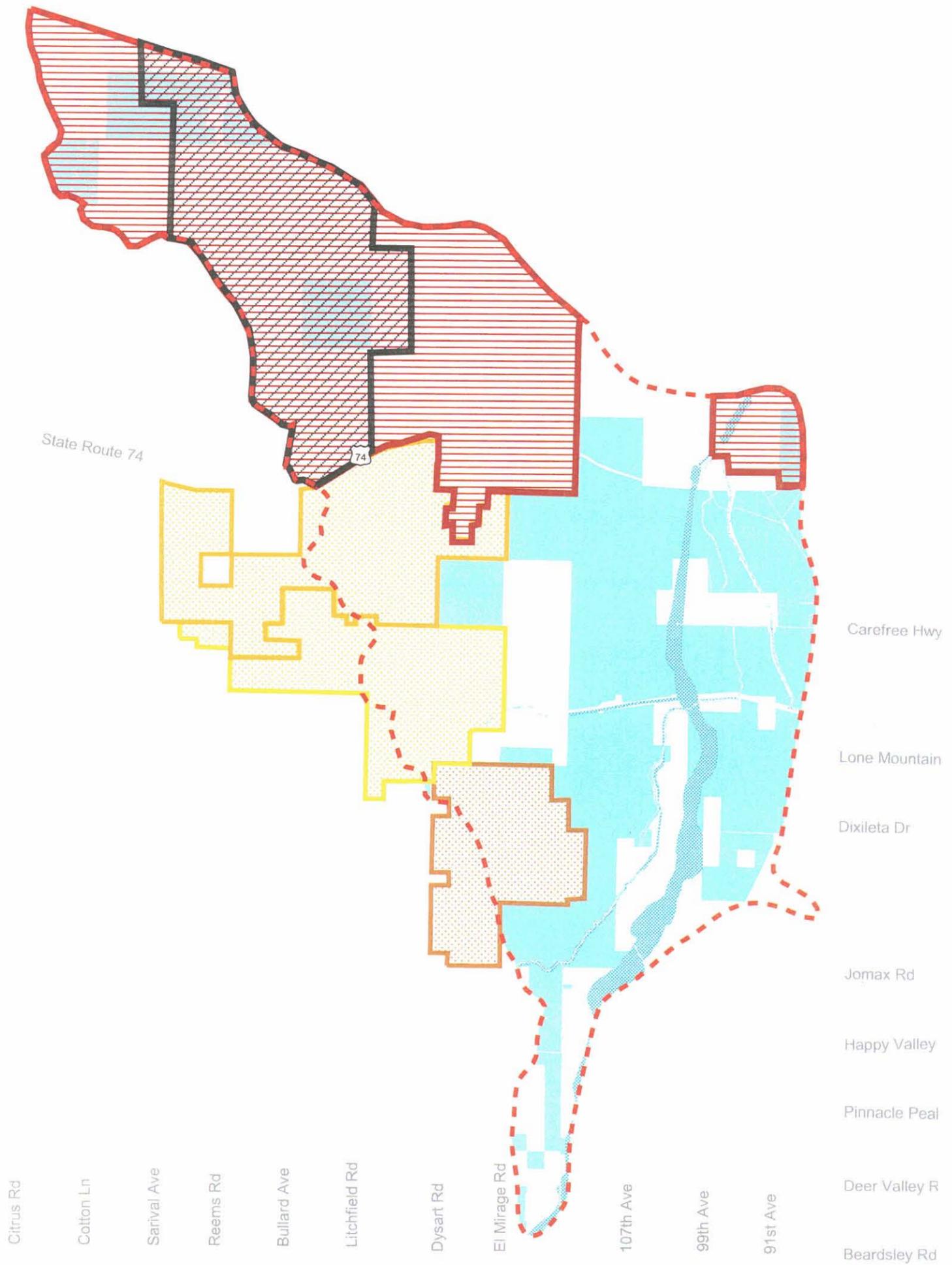


BLM marked route

North Peoria

AREA DRAINAGE MASTER PLAN

and
Opportunities Assessment



1 0 1 2 3 4 Miles



Management Areas

-  Study Area
-  Rivers, Canals and Washes
-  State Trust
-  BLM Cooperative Recreation Management Area
-  BLM Resource Conservation Area
-  Saddleback Heights PCD
-  White Peak Ranch PCD
-  Lakeland Village



4.2.2 CITY OF PEORIA

Urban Greenspace/Open Space

The City of Peoria identifies two types of urban greenspace or open space in its proposed General Plan which are: 1) dedicated open space (areas that are not subject to local zoning and are publicly held) and 2) parks/open space (areas that may be developed according to applicable planning and zoning regulations unless added to the public domain or otherwise protected).

The majority of Peoria's dedicated open space is found in the northern half of the city, south of Lake Pleasant. These areas include over 54,000 acres located north of State Route 74 managed by the Bureau of Land Management.¹² Park/Open Space areas within the Study Area include areas adjacent to the Agua Fria River, adjacent to the New River, and around significant washes and mountains. There is an additional estimated 105 acres of open space provided by the Central Arizona Project (CAP) Canal, which traverses east/west through Peoria crossing the Agua Fria and New Rivers.¹³ At this time the canal is not open to the public, however, conversations with City staff have indicated an interest in using this resource as a trail. Map 4 identifies the parks open space areas identified by the City in its proposed General Plan.

The 1996 City of Peoria Recreation and Open Space Plan recommends two publicly owned areas as regional open space parks, which the City recommends be managed as public open space areas with passive recreational uses including trails, environmental education and wildlife habitat. One of these planned regional open space areas is approximately 3,600 acres of land owned by the Bureau of Land Management. Since the adoption of the plan, this area has been traded by the Bureau of Land Management and is now part of the Saddleback Heights private development. The other planned regional open space park is approximately 2,400 acres in size and is located north of the New River Dam, just east of the Study Area owned by the Bureau of Land Management and the Flood Control District of Maricopa County. This area will be developed as a community park with bond and other funds. The Parks, Recreation and Open Space Master Plan suggests that both of these area could be acquired or managed by the City through an intergovernmental agreement, and Bureau of Land Management lands can be obtained administratively under the provisions of the Recreation and Public Purposes Legislative Act.

Urban Greenspace/Open Space Management Goals

The City of Peoria Updated General Plan establishes an open space standard of ten (10) acres of open space per 1,000 population. The existing and planned inventory includes 430 acres of open space, excluding golf course acreage and portions of Lake Pleasant Regional Park. To meet this open space standard for the projected General Plan population, an additional 2,370 acres is necessary. The Updated General Plan recommends that the environmentally sensitive areas in the northern region of the City, additional landscaped retention areas within Planned Area Developments, water recharge areas, open space buffers adjacent to Lake Pleasant Regional Park, the Agua Fria and New River recreation corridors, and the New River Dam retention area be used to meet it's open space goals.

The General Plan states the following goal pertaining to Open Space:

"Create a balanced, accessible and integrated system of open spaces and recreational opportunities to serve the current and future residents and visitors of the City of Peoria."¹⁴ Policies associated with this goal are:

- Provide a meaningful network of natural and developed open space areas.
- Manage and preserve open space to optimize its use and protection.
- Maintain the natural aesthetic qualities of the areas that are visually prominent or offer unique settings.
- Enhance recreation opportunities through the multi-purpose use open space resources.
- Promote and interconnected open space network that responds to local and regional trends.
- Coordinate open space plans, related improvements and implementation strategies with neighboring jurisdictions, stakeholders and user groups.
- Monitor, evaluate and benchmark open space plans and implementation programs to ensure effective performance.

¹² City of Peoria General Plan, November 2000, Page 9-2

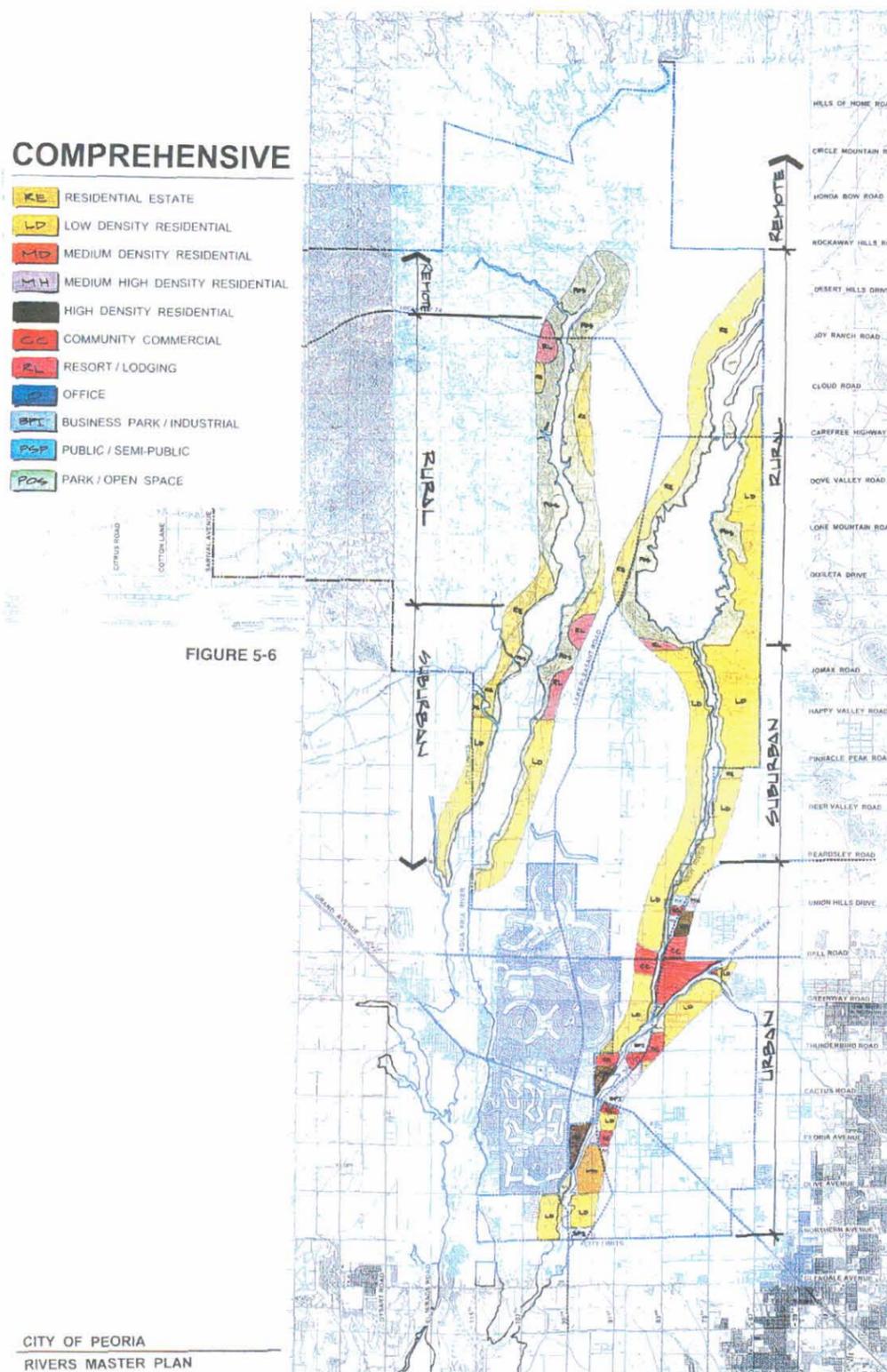
¹³ City of Peoria Parks, Recreation and Open Space Master Plan, February 1996.

¹⁴ City of Peoria General Plan, November 2000, P 9-6 though 9-12.

Rivers

The City of Peoria Rivers Master Plan addresses river conservation and appropriate land uses adjacent to rivers in the City. The River's Master Plan Vision states:

"We envision the use and development within, and adjacent to the Agua Fria River, New River and Skunk Creek as an integrated linear park/open space network connected with the trails system of the City. Our enhanced corridors also link other regional destinations within the northwest Valley of the Sun. The linear network incorporates both recreational and flood control facilities creating continuous north/south, non-vehicular access, mobility and activity. The linear system has been incrementally implemented and maintained utilizing both public and private resources. Other benefits of the linear corridor include providing attractive recreation settings for our existing and new residents and businesses. These settings utilize a range of natural, riparian, suburban and urban improvements."¹⁵



City of Peoria Rivers Master Plan

The Plan identifies three types of development zones along the Agua Fria River within the Study Area; remote, rural and suburban. The remote zone along the Agua Fria River extends from Lone Mountain Road to Lake Pleasant. The rural zone extends from Happy Valley Road to Lone Mountain. Happy Valley Road to the southern boundary of the Study Area is designated for suburban types of uses. None of these zones prohibits development or is exclusively oriented towards open space uses.

¹⁵ City of Peoria Rivers Master Plan. January, 1999. Page 63.

Rivers Management Goals

The City of Peoria Rivers Master Plan recommends that development be outside the 100-year floodplain, and that the floodplain be used as a parks/open space buffer for development. The Rivers Master Plan contains the following Goals:

1. Create an aesthetic and continuous recreation corridor system linked to the Citywide trails system.
2. Create a system of linear activity nodes to enhance the quality of life in the City.
3. Create a coordinated and environmentally sensitive conveyance and bank protection system for groundwater.

Golf Courses

The City of Peoria recognizes that there is a lack of golf courses within the City. There are currently no existing golf courses within the Study Area. Golf courses are planned for the Saddleback Heights, White Peaks Ranch, and Lakeland Village Developments and are discussed below under PRIVATE DEVELOPMENT.

Parks

Currently the entire City of Peoria has 289-acres¹⁶ of community and neighborhood parks. The vast majority of the City's parks are found in the southern half of Peoria with few in the central area, and none in the northern half (which includes part of the Study Area). The ratio of park/open space to existing population is much lower than national and local standards. To meet the standards established by the National Recreation and Parks Association (NRPA) at buildout, the City needs an additional 516 acres of neighborhood and community parks, 992.4 acres of regional park and 1,032.4 acres of open space by the year 2005. The City of Peoria Updated General Plan states that park and open space facilities are lacking citywide.

There are no developed or undeveloped City owned neighborhood parks, community parks, or special recreational facilities within the Study Area. Lake Pleasant Regional Park, owned and operated by Maricopa County is just north of the Study Area. Lake Pleasant Regional Park is described in the Maricopa County portion of this section.

Policy recommendations for eleven new neighborhood parks, three nodal parks and three community parks are based on the needs assessment conducted during the planning process of the 1996 Parks, Recreation and Open Space Master Plan.

Parks Management Goals

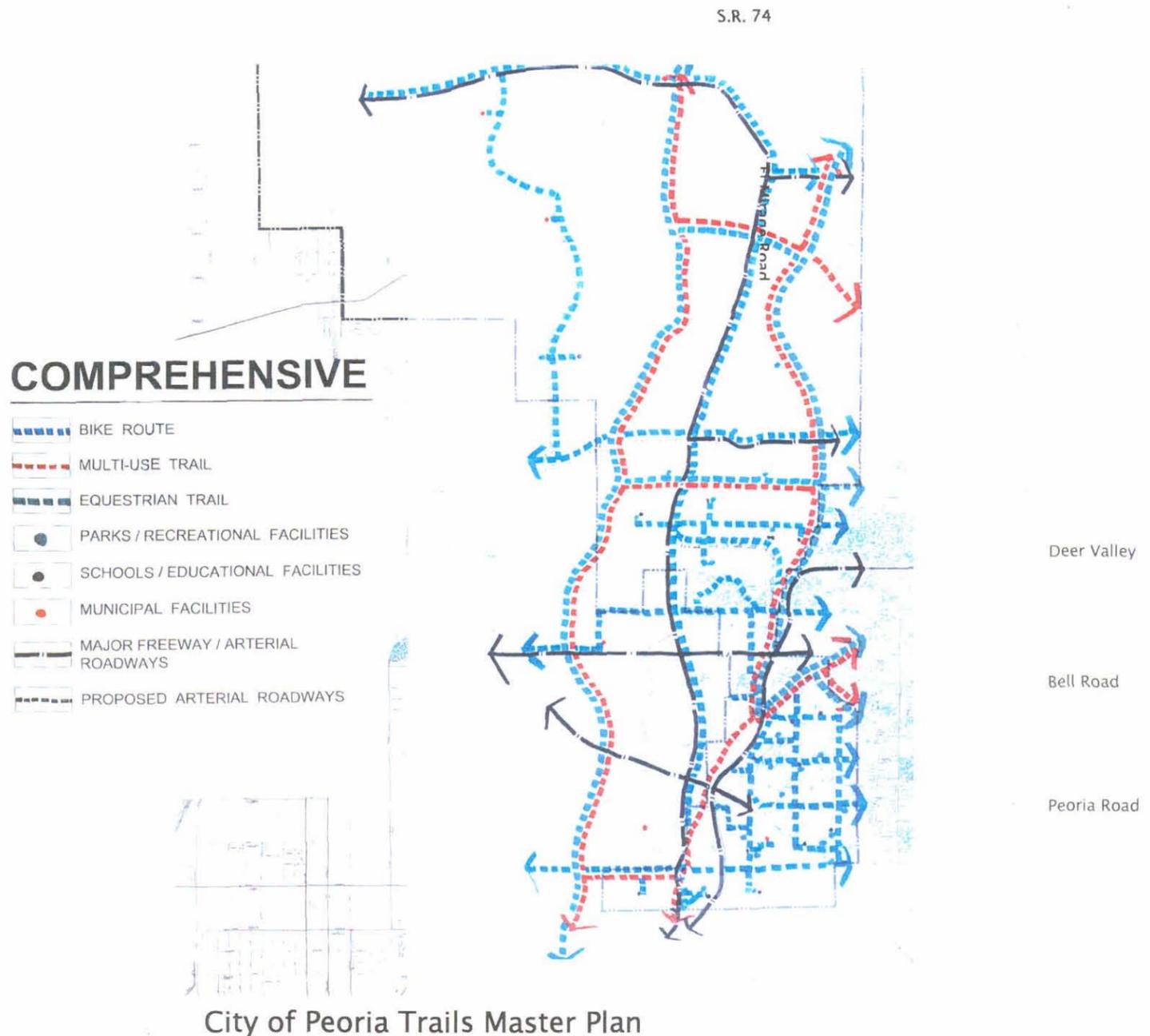
The City of Peoria Updated General Plan contains a goal to "develop a park system, library facilities and recreation program that are proximate, meet user needs and offers a diversity of both learning and physical activities." Objectives associated with this goal include:

- Increase the supply of park land within the city to provide proximate access for residents and visitors.
- Continually evaluate all equipment and facilities to ensure their maximum usefulness to the City.
- Build on the presence of the New River, Agua Fria River and Skunk Creek corridors as focal points for the development of adjacent parks, recreation and open space uses.
- Continually monitor the recreation program activity types, location and frequency to serve the needs of City residents.
- Strive to establish pedestrian connections between open space and parks.

¹⁶ City of Peoria Trails Master Plan includes 181.9 acres of existing parks and 57.1 acres of land acquired for six new neighborhood parks.

Trails

The City of Peoria Trails Master Plan identifies a network of unpaved multiple trails throughout the Study Area. The trails network is shown on Map 4, Regional Context. Additionally, paved trails are suggested along major roadways. The City of Peoria Trails Master Plan Vision states: "We envision a city with an inter-linked trails network from Lake Pleasant to Northern Avenue that includes connections to other trails outside Peoria. The trails network has been developed to transition from the natural environment that exists in the northern region of the City to an urbanized character through the developed city. The network of trails provides a safe, non-motorized pathway system for diverse user groups as well as public safety and emergency personnel. The trails system was implemented through a public private partnership and invites all trail users to enjoy the outdoors and the high quality of life in the City. The system relies on a dedicated group of Peoria private and corporate citizens for assistance with ongoing improvements, surveillance and maintenance."



Trails Management Goals

The Trails Plan includes the following Goals:

1. Create compatible trail system adjacent to existing and proposed land uses.
2. A safe continuous multi-user circulation system.
3. A continuous trail system throughout the City.
4. Create a clean, aesthetic and well-maintained trail system throughout the City.¹⁷

The City of Peoria Trails Plan includes recommended widths and buffers for unpaved multi-use trails as well as a variety of paved trail types. The unpaved sections, most applicable to this project, recommend that these types of trails be used as secondary facilities and be limited to the "natural, geographical, and native habitat of the area they are routed through. Increased trail widths of eight to ten feet may be possible in wide, flat areas with minimal existing vegetation. Narrow trail widths of three (3) feet may be required where steep slopes, thick vegetation, and/or wildlife habitats exist. Trail alignments may take advantage of scenic, cultural, and interpretive resources as well as provide various levels of active recreation."¹⁸

¹⁷ City of Peoria Trails Plan. January 1999. Pages 55-56.

¹⁸ City of Peoria Trails Master Plan. Figure 6-9. January, 1999.

4.2.3 PRIVATE DEVELOPMENT

Two master planned communities, Saddleback Heights, Lakeland Villages and one Planned Community District, White Peak Ranch are within the City of Peoria's jurisdiction and partially in the Study Area and are in various stages of the approval process. These communities are shown on Map 5. A fourth development, Quintero Golf Course Community is planned north of State Route 74. The City of Peoria is working with these projects to ensure that trails, open space and schools are included in the projects. Recreation resources associated with these projects are described below.

Urban Greenspace/Open Space

The Saddleback Heights Master Planned Community is proposing to transfer a minimum of approximately 940 and a maximum of 1,600 acres of mountain areas to the City of Peoria.¹⁹ The White Peaks Ranch Planned Community District proposed transferring approximately a minimum of 900 and a maximum of 1,175 acres of open space to the City of Peoria.²⁰ The Lakeland Village Master Planned Community sets riparian areas aside as open space. Some of these areas are included in the golf course area.²¹ In the White Peaks Ranch and Saddleback Heights areas, the initial provision would focus on the most prominent peaks within the planned community and would be configured and described by defining a particular elevation contour.²² In the Lakeland Village Community, the area within 50 feet of the sandy bottom of the predominant washes will not be disturbed by housing.²³ Open spaces associated with these projects are shown on Map 6.

Open Space Management Goals

Because these areas will be transferred to the City of Peoria, they will be managed according the City of Peoria Open Space Management Policies, described above.

Rivers

The White Peak Ranch Planned Community District identifies vegetated riparian corridors along the White Peak, Twin Buttes, Caterpillar Tank, Garambullo and Padelford Washes. These washes are characterized by sand and silt and cobble generally six to 20 feet in width as well as Palo Verde, Bursage and Chuparosa.²⁴

The Saddleback Heights Planned Community District Master Plan identifies three washes; Saddleback, Padelford and Sandy Wash. These areas are characterized by sand and silt and cobble and are generally up to twenty (20) feet in width. Plant materials along these washes include Palo Verde, Bursage and Chuparosa. The Planned Community District and Master Plan identify opportunities to:

- Preserve natural conditions of drainage ways
- Promote opportunities for mobility through a community wide trails system
- Promote opportunities for interaction with wildlife habitat preserve by the extensive riparian corridors preserved
- Preserve upper slopes and peaks.²⁵

Golf Courses

The Saddleback Heights area includes three private golf courses as part of the development. The golf courses are planned to include lakes, xeriscape and various landscape themes. Another two golf courses will be located in the Lakeland Village Master Planned Community. White Peak Ranch Planned Community District will also have two golf courses with lakes of approximately 225 acres each that are almost half turf. The location of these golf courses are shown on Map 6.

¹⁹ Saddleback Heights Planned Community District. December 8, 2000. Page 45.

²⁰ White Peaks Ranch Planned Community District. September 8, 2000. Page 45.

²¹ Lakeland Village Master Planned Community. Development Master Plan and Zoning. July 12, 2000. Page 25.

²² Saddleback Heights Planned Community District. December 8, 2000. Page 45.

²³ Lakeland Village Master Planned Community. Development Master Plan and Zoning. July 12, 2000. Page 27.

²⁴ White Peaks Ranch Planned Community District. September, 2000. Pages 34-35.

²⁵ Saddleback Heights Planned Community District. December 8, 2000. Page 36.

Golf Course Management Goals

The Saddleback Heights Planned Community District Master Plan open space areas within the golf courses will be designed and contoured to accommodate both off site drainage and to retain stormwater runoff from adjacent neighborhoods and commercial properties. Stormwater runoff within basins and washes will be isolated from on-site irrigation reservoirs. The Lakeland Village golf course will be designed to accommodate both off-site flows (primarily within White Peak and Twin Buttes Washes) and to accept storm water runoff from adjacent neighborhoods and commercial properties.

Park

The Saddleback Heights Planned Community District Master Plan also includes 75 acres for dedication as neighborhood and community park space. The plan states that this area will meet the needs of the projected 14,100 resident population for the area. Lakeland Village Master Planned Community proposed 137 acres set aside for neighborhood and community park space. In addition to two community park areas, the 137 acres includes riparian corridors, golf course areas, trails and common basins as well as informal spaces. The White Peaks Ranch Planned Community District includes 172 acres of community and park space.

Parks Management Goals

The Saddleback Heights and White Peak Ranch Planned Community District Master Plan management policies for neighborhood and community parks states that "the neighborhood park should be improved with basic improvements including improvements such as a baseball diamond, tennis, basketball, playground equipment, restroom, multi-use fields as determined by the Peoria Parks Director. The Community park should be improved with a library, recreational center, and other recreational facilities such as a sporting complex (multiple ball fields for league play with lights), ramadas, community swimming pool and other facilities such as those listed under the neighborhood park as determined by the Peoria Parks Director."²⁶

Trails

The Saddleback Heights Planned Community District Master Plan includes paved trail networks mostly focused around motorized circulation systems and unpaved, natural surface trails that follow ridge lines and connect major steep slope/open space areas. The recommended trails are shown on Map 7. The Lakeland Village Master Plan includes an eight (8') foot wide concrete path on either side of each arterial roadway that is separated from vehicular traffic by a three to five foot wide area. Additionally, a recreational pedestrian path is planned around the circumference of the proposed collector street loops within each neighborhood.²⁷ A recreational path adjacent to arterial streets and within drainage corridors and along some segments of the golf courses is also proposed. The proposed paths will be eight (8) feet wide and meander to maximize access to adjacent land use.

Trails Management Goals

The Saddleback Heights Planned Community District Master Plan states that "trails will be designed to facilitate pedestrian, bicycle and equestrian access between residential neighborhoods and commercial, school, and open space and park uses. The planned trails system recommends separating pedestrian/bicycle facilities with equestrian facilities where appropriate. Generally the equestrian facilities have been planned within the eastern portions of the planned community with intended trail priority being yielded to equestrian use. The areas generally west of the El Mirage Road alignment have been planned with trail facilities that are intended to be prioritized for pedestrian (hiking) and bicycle (mountain bike) use."²⁸

²⁶ Saddleback Heights Planned Community District. Page 45. December 8, 2000.

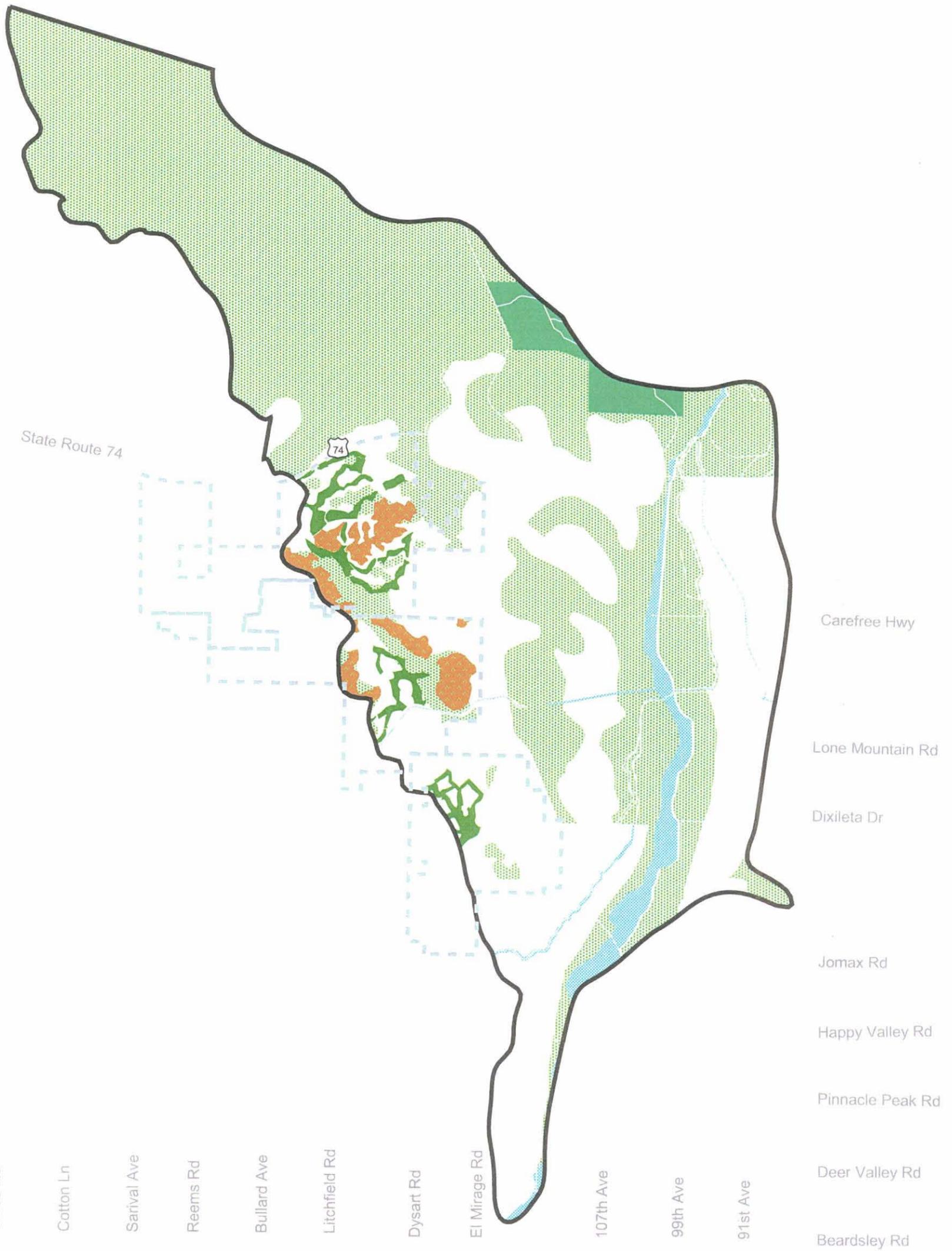
²⁷ Lakeland Village Master Planned Community Development Master Plan, July 12, 2000. Page 28-29.

²⁸ Saddleback Heights Planned Community District. December 8, 2000. Page 45.

North Peoria

AREA DRAINAGE MASTER PLAN

Water Use Opportunities Assessment



Citrus Rd Cotton Ln Sarival Ave Reems Rd Bullard Ave Litchfield Rd Dysart Rd El Mirage Rd 107th Ave 99th Ave 91st Ave

0 1 2 3 4 Miles



Open Space, Parks and Golf Courses Within the Study Area

-
-
-
-
-

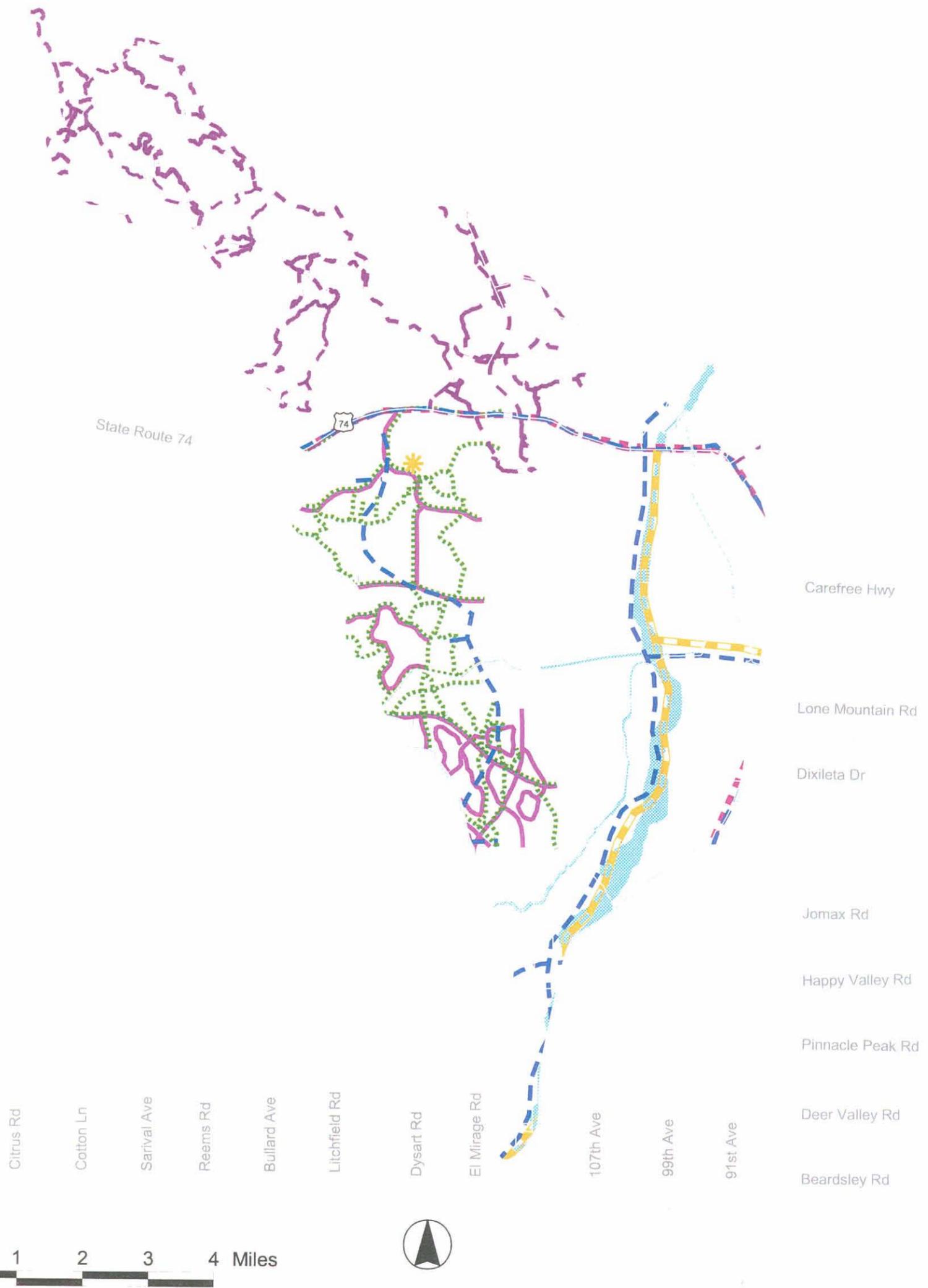
Study Area
 Planned Community District (PCD)
 Rivers, Canals and Washes
 Recreational Open Space
 Mountain Preserve Land
 Planned Park/Open Space
 Planned Golf Course



North Peoria

AREA DRAINAGE MASTER PLAN

PHASE 1: COMMUNITY ASSESSMENT



Trails Within the Study Area

- | | | | |
|---|----------------------------------|---|-------------------------|
|  | Study Area |  | BLM Access Guide Routes |
|  | Rivers, Canals and Washes |  | On-Street Bike Route |
|  | Planned Community District (PCD) |  | Equestrian Trail |
|  | PCD Paved Multi-Use Trail |  | Multi-Use Trail |
|  | PCD Unpaved Multi-Use Trail |  | PCD Planned Trailhead |



5. OPPORTUNITIES FOR PROTECTION OR RESTORATION

Based on the multiple use resources identified herein, the following opportunities for protection, restoration, and enhancement of existing and planned multiple use resources were identified:

- Take advantage of the Beardsley Canal, McMicken Dam Outfall, Sun Circle Trail and State Route 74 as major trail connections and connect the wash-based trail system to them whenever possible.
- Extend the trail systems of White Peaks Ranch, Saddleback Heights, and Lakeland Village to the east through the three major unnamed washes to the Agua Fria River.
- Support adoption of the City of Peoria Rivers Master Plan to reserve the 100-year floodplain for open space and trails.
- Encourage adoption (and, if possible, enhancement) of the Peoria Trails Master Plan minimum trail width recommendations for unpaved trails.
- Take advantage of Big Springs, Saddleback Mountain, Lake Pleasant Park Interpretive Center, the planned regional park along Lake Pleasant Road and Pyramid Peak, and other unique cultural or natural sites identified in this study as destinations for trails.
- Examine confluence areas along the Agua Fria and along side streams to determine if the floodplain is wide enough to provide trail head, staging area, or open space opportunities.
- Work with the City, Maricopa County Department of Transportation (McDOT) and Arizona Department of Transportation (ADOT) to provide multiple-use facilities on bridges and/or roads when they cross washes.
- Work with the City and ADOT to identify any potential right-of-way that could provide trail heads or entry points to the trails system at wash crossings (for example, along State Route 74, Carefree Highway, or planned roads associated with new development).
- Use the planned on street system to provide hard surface trails, and designate wash areas for unpaved multiple-use areas. Link wash-based trails to the hard surface trails system at road crossings.
- Work with the Bureau of Land Management to develop policies and strategies to reserve, in perpetuity, streams and washes as right-of-way for trails.
- Work with the Bureau of Land Management to develop policies for off-road use trails along washes that protect existing stream and washbeds.
- Encourage the inclusion of specific policies related to protection of trails in and adjacent to washes in the Bureau of Land Management Cooperative Resource Management Plan and Cooperative Recreation Area Management Plan.
- Develop minimum standards and setbacks for trails along washes or in wash beds that can be incorporated as stipulations in future re-zonings throughout the project area. Require that the setback be measured from the 100-year flood plain edge.
- Require public access through all golf courses along washes, flood plain areas, and erosion hazard zones.
- Provide directional signing that describes the trail system at major entry points.
- Because many washes are deep and incised, making it difficult to see landmarks from many areas, provide way finding at regular intervals along trails.
- Identify and mark specific public access points along the three unnamed washes at ½ mile intervals.

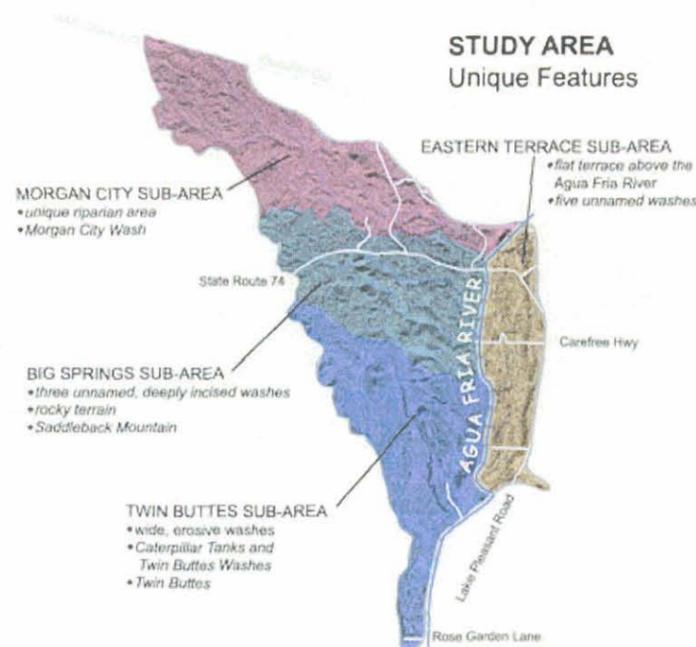
6. APPROPRIATE MULTIPLE-USE OPPORTUNITIES

This portion of the report reviews the multiple-use opportunities identified in Section 5 and discusses the extent to which these opportunities are appropriate to the North Peoria area and could be incorporated into or considered in the implementation of flood control management alternatives.

6.1 Background and Introduction

Multiple-use opportunities are opportunities identified to meet local community needs for recreation, open space, protection and enhancement of natural landscape, and local community character as related to proposed flood control management alternatives. Existing and proposed recreation facilities, management plans, and trail plans are inventoried on a regional and local level so that the extent to which flood control management alternatives could be used to enhance and connect these resources can be identified. Regional passive recreation resources (existing and planned) adjacent to the Study Area include Lake Pleasant, Hells Canyon Wilderness Area, Castle Hot Springs, and linear park/open space networks (City of Peoria's Rivers Plan) that connect with a trail system proposed in the City of Peoria Trails Plan along the Agua Fria River. Map 4 displays the recreational regional context of the area. Existing local recreational resources include the privately owned Canyon Raceway, Pleasant Valley Airport, numerous off-road vehicle trails and non-motorized trails identified in the Bureau of Land Management in its surface management status and other maps, and open space identified on the City of Peoria's General Plan Land Use Map. In addition, the City of Peoria General Plan states that the environmentally sensitive areas in the City's northern region, which includes portions of the North Peoria ADMP Study Area, landscape retention areas within Planned Area Developments, water recharge areas, open space buffers adjacent to Lake Pleasant Regional Park, the Agua Fria and the New River recreation corridors and the New River Dam retention area be used to meet the City's goal of providing 10 acres of open space per 1000 population.

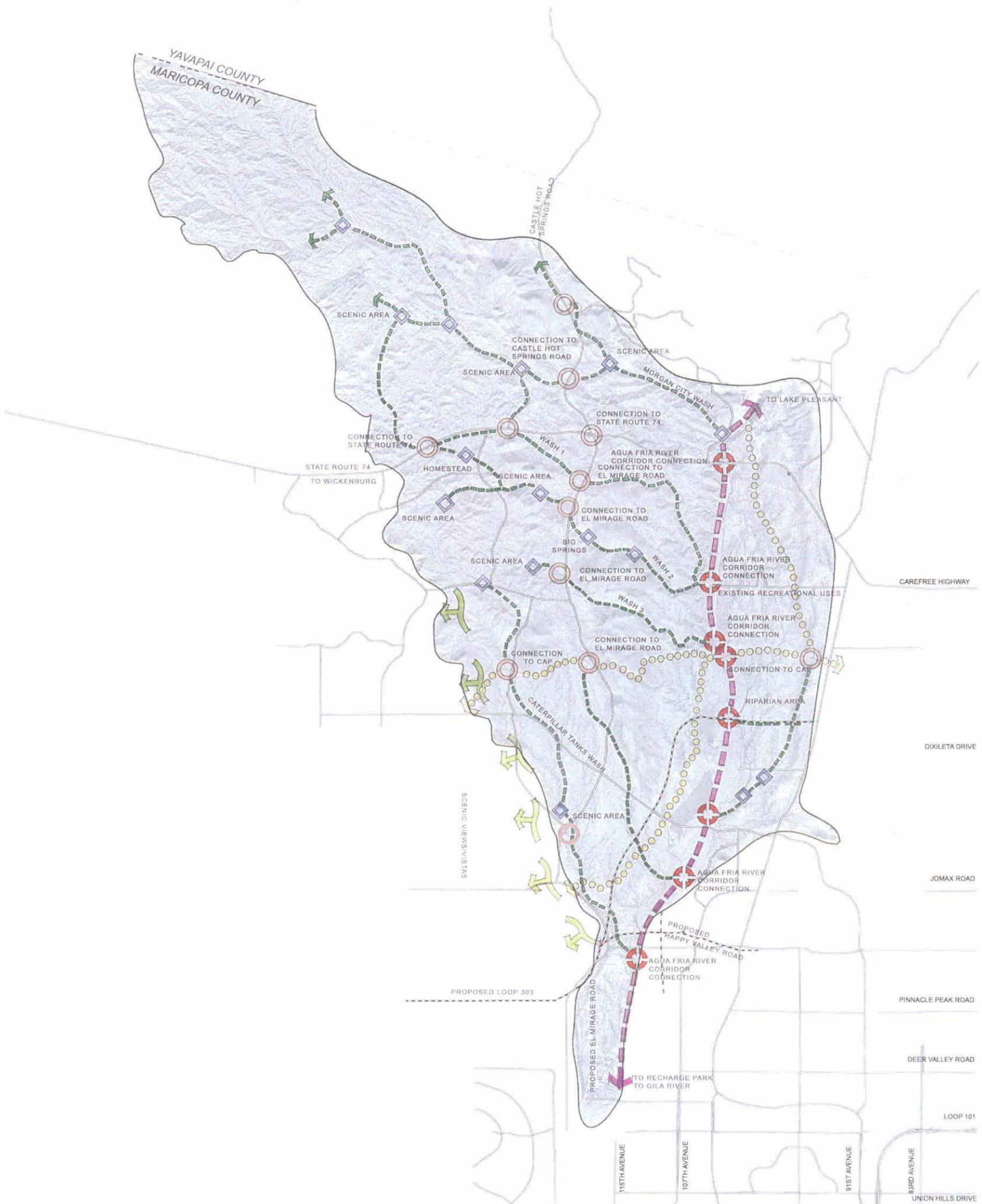
As an element of the North Peoria Area Drainage Master Plan an assessment of opportunities and limitations for integrating multiple-use recreational features into preferred flood control management alternatives was conducted. Opportunities identified are primarily located along Morgan City Wash in the Morgan City Area, Unnamed Wash 1, 2 and 3 in the Big Spring Area and Caterpillar Wash and Twin Buttes Wash in the Twin Buttes Area shown below. The location of multiple-use recreational facilities along these wash corridors are primarily within or adjacent to the 100-year floodplain and/or Erosion Hazard Zone and possible detention/retention facilities, located within a wash, that may be constructed by developers. Map 8 displays potential wash corridor trail systems for the North Peoria ADMP area.



North Peoria

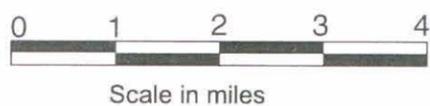
AREA DRAINAGE MASTER PLAN

Multiple Use Opportunities Assessment



Potential Wash Corridor Trail Systems

- POTENTIAL TRAIL
- WASH CORRIDOR TRAIL
- AGUA FRIA CORRIDOR TRAIL
- SCENIC AREA
- CONNECTION TO ROADWAY
- CONNECTION TO AGUA FRIA CORRIDOR
- SCENIC VIEWS/VISTAS
- EXISTING ROADWAY
- PROPOSED ROADWAY



6.2 Opportunities Discussion and Plan Recommendations

This section includes plan recommendations based on a discussion of each of the opportunities identified in section 5 of this report.

OPPORTUNITY:

- Take advantage of the Beardsley Canal, McMicken Dam Outfall, Sun Circle Trail and State Route 74 as major trail connections and connect the potential wash based trail corridors to them whenever possible.

DISCUSSION:

The Maricopa Water District, which owns the Beardsley Canal, does not grant access to this facility. The City of Peoria Trails Master Plan proposes that the Central Arizona Project east of El Mirage Road be designated as a multiple-use and equestrian trail, that State Route 74 be designated as a bicycle route and multiple-use trail, and that the Agua Fria River include multiple-use and equestrian trails. Maricopa County designates State Route 74 as a bicycle route. While the Central Arizona Project (CAP) does not permit access to their facilities at this time it is possible that there will be the opportunity to access this facility in the future. The Sun Circle Trail is a Maricopa County adopted, planned trail within the Agua Fria River. The City of Peoria General Plan identifies portions of the floodplains of unnamed washes 1, 2 and 3 as open space. All of the washes included in the Area Drainage Master Plan terminate in the Agua Fria River. Arizona Game and Fish has expressed concerns regarding the use of these washes as major trail connections. They believe that facilities associated with trails (such as parking areas, signs, paving and/or stabilization) and the human activity encouraged by trails could negatively impact what they believe to be the primary function of the wash as a wildlife corridor.

As development occurs around the washes and with no ongoing enforcement it is likely that the washes will be used on an informal basis for passive recreation activities. These activities could be discouraged through a lack of signing, and design that permits limited access. However, fences and barriers in the wash, or that prevent movement between subdivisions along the wash by humans are also likely to prohibit their function as a wildlife corridor. These informal, undeveloped connections would not interfere with planned flood control approaches, facilities or management techniques and are appropriate for consideration in this plan.

RECOMMENDATION:

The viability of trail connections between State Route 74, the McMicken Dam Outfall, Sun Circle Trail or Central Arizona Project and the washes should be determined.

OPPORTUNITY:

- Extend the trail systems of White Peaks Ranch, Saddleback Heights and Lakeland Village to the east through unnamed washes 1, 2, and 3 to the Agua Fria River.
- Support adoption of the City of Peoria Rivers Master Plan to reserve the 100-year floodplain for open space and trails.
- Because many washes are deep and incised, making it difficult to see landmarks from many areas, provide way finding at regular intervals along trails.
- Work with the Bureau of Land Management in the Morgan City Area to develop policies and strategies to reserve, in perpetuity, streams and washes as right-of-way for trails.
- Investigate the viability of public access through all golf courses along washes, floodplains, and Erosion Hazard Zones.
- Identify and mark specific public access points along the three unnamed washes at ½ mile intervals.
- Work with the City, McDOT, and Arizona Department of Transportation to provide multiple-use facilities on bridges and/or roads when they cross washes.

- Identify any potential right-of-way that could provide trail heads or entry points to the trails system at wash crossings (for example, along State Route 74, Carefree Highway, or planned roads associated with new development).
- Use the planned on-street system to provide hard surface trails, and designate wash areas for unpaved multiple-use areas. Link wash-corridor trails to the hard surface trails system at road crossings.

DISCUSSION:

Private development generally uses areas that can not be developed, such as floodplains, steep slopes and wash bottoms, to provide open space and trail connections. The City of Peoria Trails Master Plan does not identify any trails within wash corridors in the North Peoria Study Area. The City of Peoria Rivers Master Plan proposes that the Agua Fria River floodplain be retained as open space with a wide variety of recreation and tourist related development adjacent to it. This plan additionally proposes trails within the river bottom, shelf and bank. The Bureau of Land Management has identified the Morgan City Wash as a trail. Arizona Game and Fish is concerned that by locating trails, the human activity, and improvements (such as access areas, paving, parking, and signing) generally associated with them the existing vegetation and the effectiveness of the washes as wildlife corridors may be negatively impacted.

This study recognizes the value of the washes to wildlife. It also recommends other areas highly likely to be subject to erosion, called Erosion Hazard Zones, not be developed. In the southern portion of the Study Area, around Twin Buttes and Caterpillar Tanks washes, the Erosion Hazard Zones extend beyond the boundaries of the floodplain and could be good locations for trails. In the northern portion of the Study Area around the three unnamed washes the Erosion Hazard Zones do not extend beyond the limits of the 100-year floodplain.

RECOMMENDATION:

Due to the potential to impact wildlife corridors and the steep terrain, the designation of public access trails within the three unnamed washes and access provided to them at regular intervals, may not be appropriate. However, in the southern areas, it is possible to include trails within the Erosion Hazard Zones of the Caterpillar Tanks and Twin Buttes washes. The Morgan City Wash should be maintained as a multi-use trail. When these trails intersect with El Mirage Road, the proposed Loop 303 and Happy Valley Road, shared use facilities should be incorporated into these roadways to facilitate crossing the wash and the roadways.

OPPORTUNITY:

- Encourage adoption (and, if possible, enhancement) of the Peoria Trails Master Plan minimum trail width recommendations for unpaved trails.
- Develop minimum standards and setbacks for trails along washes or in wash beds that can be incorporated as stipulations in future rezoning throughout the project area. Require that the setback be measured from the 100-year flood plain edge.
- Provide directional signing that describes the trail system at major entry points.

DISCUSSION:

The City of Peoria Trails Master Plan identifies four types of trails: On-Street Bike Routes, Paved Multi-Use Path, Unpaved Multi-Use Trail and Equestrian Trail. The trail types most appropriate to the North Peoria Area Drainage Master Plan Study Area include the Paved Multi-Use Path (in the Twin Buttes Area) and Unpaved Shared-Use Path (in the Morgan City and Big Springs Areas). The Paved Multi-Use Path includes an 8' wide paved path within a 13' to 20' open space right-of-way. This path could be appropriate within the Erosion Hazard Zones around Caterpillar Tanks and Twin Buttes washes in the Twin Buttes area. The Unpaved Multi-Use Trail includes a 5' to 8' undeveloped path at the edge of a property line, and also serves as "unpaved secondary connectors to other trail classifications and to undeveloped, rural and/or remote areas. Standards for this classification of trails may vary according to right-of-way width, geographical and environmental constraints and land uses."²⁹ This path type could be considered along the banks of the unnamed washes in the Big Springs Area and along the Morgan City Wash.

²⁹City of Peoria Trails Master Plan.

RECOMMENDATION:

Adopt the City of Peoria Trails Master Plan minimum trails width recommendations for recommended trails and implement them through rezoning and at other opportunities. Sign these trails at appropriate locations.

OPPORTUNITY:

- Take advantage of Big Springs, Saddleback Mountain, Lake Pleasant Park Interpretive Center, the Planned Regional Park along Lake Pleasant Road and Pyramid Peak, and other unique cultural or natural sites identified in this study as destinations for trails.

DISCUSSION:

Big Springs and Saddleback Mountain are accessed by Unnamed Wash 2. While trail feasibility for Unnamed Wash 1 is not certain due to the potential conflicts between trail users and wildlife identified by Arizona Game and Fish, Big Springs and Saddleback Mountain are designated as open space in the City of Peoria General Plan. Morgan City Wash is identified as a trail in the City of Peoria Trails Plan. Lake Pleasant Park interpretive center is not directly accessed by any of the trails recommended in the Area Drainage Master Plan. Other unique sites, including scenic areas at the termination of Unnamed Washes 2 and 3, a scenic area along Morgan City Wash, and the “homestead” along Unnamed Wash 2, identified in the cultural and visual resources analysis conducted as part of this Master Plan are identified in the City of Peoria Plan as open spaces.

RECOMMENDATION:

Take advantage of the scenic area along the Morgan City Wash as a destination for trails.

OPPORTUNITY:

- Examine confluence areas along the Agua Fria and along side streams to determine if the floodplain is wide enough to provide trail head, staging area, or open space opportunities.

DISCUSSION:

A non-structural approach to flood control will be applied to the washes in the Big Springs Area. The washes within the Twin Buttes area are included in private developments. The floodplains along the washes in the Big Springs Area remain narrow and constricted at the confluence of the Agua Fria River.

RECOMMENDATION:

This opportunity is not feasible, due to the narrow width of the floodplains at the confluence of the Agua Fria River.

OPPORTUNITY:

- Work with the Bureau of Land Management to develop policies for off-road use trails along washes that protect existing stream and wash-beds.
- Encourage the inclusion of specific policies related to protection of trails in and adjacent to washes in the Bureau of Land Management Cooperative Resource Management Plan and Cooperative Recreation Management Area Plan.

DISCUSSION:

The Bureau of Land Management updates the Cooperative Recreation Management Area Plans as funding and need dictate. The Bureau of Land Management also has policies for off-road use trails. These policies are also updated as funding and need dictate. The City will be asked to participate in the next plan update. As a matter of policy, the Bureau of Land Management works closely with other public and private entities during their plan updates.

RECOMMENDATION:

Participate in future updates of Bureau of Land Management plans and policies.

7. POSSIBLE PARTNERS AND FUNDING SOURCES

Introduction

Implementation of the multiple-use opportunities identified in this report may be accomplished through public and/or private partnerships that provide planning, design, construction and maintenance resources. This section provides information that can be used by the City of Peoria, the Flood Control District of Maricopa County, or non-governmental organizations to identify potential partners and funding resources for a specific multiple-use facility.

The information presented here is grouped into four types of partnerships; Federal, State, local and private. Information on each potential partner includes the type of project funded, a primary contact, total funding available and the funding cycle.

PARTNER/RESOURCE	OPPORTUNITY			
	TRAILS	TRAILHEADS	OPEN SPACES	ACTIVE PARKS
Federal Partners/Resources				
Bureau of Land Management (BLM) Easements For Conservation, Access Roads, Trails, and Improvements	Land Acquisition Resource	Land Acquisition Resource	Land Acquisition Resource	Land Acquisition Resource
Congestion Mitigation Air Quality Funds – TCMS In Section 108(F)(1)(A) Of The CAA	Design and Construction/Partner Resource	Design and Construction/Partner Resource		
Land and Water Conservation Fund (LWCF)	Land Acquisition Resource	Land Acquisition Resource	Land Acquisition Resource	Land Acquisition Resource
Transportation Efficiency Act For The 21 st Century (TEA-21) Enhancement Funds	Design and Construction/Partner Resource	Design and Construction/Partner Resource		
U.S. Army Corps Of Engineers			Design and Construction/Partner Resource	
State Partners/Resources				
Arizona Preserve Initiative (API)			Land Acquisition Resource	
Arizona State Parks Heritage Fund – Game and Fish		Land Acquisition Resource	Land Acquisition Resource	
		Design and Construction/Partner Resource	Design and Construction/Partner Resource	
		Maintenance Partner/Resource	Maintenance Partner/Resource	
Arizona State Parks Heritage Fund – Historic Preservation	Land Acquisition Resource			
	Design and Construction/Partner Resource			
	Design and Construction/Partner Resource			
	Maintenance Partner/Resource			
Arizona State Parks Heritage Fund – Trails	Land Acquisition Resource	Land Acquisition Resource		
	Design and Construction/Partner Resource	Design and Construction/Partner Resource		
	Design and Construction/Partner Resource	Design and Construction/Partner Resource		
	Maintenance Partner/Resource	Maintenance Partner/Resource		
Arizona State Parks Heritage Fund – Local, Regional and State Parks (LRSP)				Land Acquisition Resource
				Design and Construction/Partner Resource

LEGEND

Land Acquisition Resource

Design and Construction/Partner Resource

Program Partner/ Resource

Maintenance Partner/Resource



PARTNER/RESOURCE	OPPORTUNITY			
	TRAILS	TRAILHEADS	OPEN SPACES	ACTIVE PARKS
Local Partners/Resources				
Capital Improvement Program (CIP)				
Dedications				
Density Transfer				
General Fund				
Performance Based Zoning				
Revenue Bonds - City Of Peoria				
Transfer Of Development Rights (TDR)				
Private Partners/Resources				
Bikes Belong				
Eastman Kodak American Greenways Awards				
Friends of the West Valley Rivers				
2002 National Trails Endowment				
National Recreational Trails Funding Program				

LEGEND

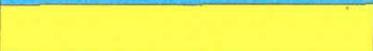
Land Acquisition Resource

Design and Construction/Partner Resource

Program Partner/ Resource

Maintenance Partner/Resource



PARTNER/RESOURCE	OPPORTUNITY			
	TRAILS	TRAILHEADS	OPEN SPACES	ACTIVE PARKS
Local Partners/Resources				
North American Wetlands Conservation Council Small Grants			 	
Recreational Equipment Incorporated (REI)	   	   	   	   

LEGEND

- Land Acquisition Resource
- Design and Construction/Partner Resource
- Program Partner/ Resource
- Maintenance Partner/Resource



Federal Partners/Resources

Bureau of Land Management (BLM) Easements For Conservation, Access Roads, Trails, and Improvements. 33
 Congestion Mitigation Air Quality Funds – TCMS In Section 108(F)(1)(A) Of The CAA..... 34
 Land and Water Conservation Fund (LWCF)..... 35
 Transportation Efficiency Act For The 21st Century (TEA-21) Enhancement Funds 36
 U.S. Army Corps Of Engineers..... 37

State Partners/Resources

Arizona Preserve Initiative (API)..... 38
 Arizona State Parks Heritage Fund – Game and Fish 39
 Arizona State Parks Heritage Fund – Historic Preservation 40
 Arizona State Parks Heritage Fund – Trails 41
 Arizona State Parks Heritage Fund – Local, Regional and State Parks (LRSP). 42

Local Partners/Resources

Capital Improvement Program (CIP)..... 43
 Dedications 44
 Density Transfer 45
 General Fund..... 46
 Performance Based Zoning 47
 Revenue Bonds – City Of Peoria 48
 Transfer Of Development Rights (TDR)..... 49

Private Partners/Resources

Bikes Belong..... 50
 Eastman Kodak American Greenways Awards 51
 2002 National Trails Endowment 52
 National Recreational Trails Funding Program 53
 North American Wetlands Conservation Council Small Grants 54
 Recreational Equipment Incorporated (REI)..... 55
 Friends of the West Valley Rivers..... 56



BUREAU OF LAND MANAGEMENT (BLM) EASEMENTS FOR CONSERVATION, ACCESS ROADS, TRAILS, AND IMPROVEMENTS

FUNDING CYCLE:	Ongoing.
PURPOSE:	The Bureau acquires land when it is in the public interest and consistent with publicly-approved land use plans. The Bureau of Land Management's land acquisition program is designed to: 1) improve management of natural resources through consolidation of Federal, State and private lands; 2) secure key property necessary to protect endangered species, promote biological diversity, increase recreational opportunities, and preserve archaeological and historical resources; and, 3) implement specific acquisitions authorized by Acts of Congress by acquiring minimal non-Federal lands or interest in lands.
APPLICABLE TYPES OF PROJECTS:	Conservation, Access Roads, Trails and Improvements.
GRANT AMOUNTS:	Easements for Conservation, Access Roads, Trails, and Improvements allows the Bureau of Land Management to control rights on private property which usually involve access or development. The lands remain in private ownership with limited rights owned by the Bureau of Land Management. Easements allow landowner to maintain existing land uses but protects the land from incompatible uses through conservation easements; provides access to "landlocked" public lands allowing Bureau of Land Management to construct road improvements for better management and increased public access.
ELIGIBLE APPLICANTS:	Public entities.
CONTACT PERSON:	Bureau of Land Management – Phoenix Field Office 2015 West Deer Valley Road Phoenix, Arizona 85027-2099
TELEPHONE:	623.580.5500
REQUIRED MATCH:	None.

CONGESTION MITIGATION AIR QUALITY FUNDS – TCMS IN SECTION 108(F)(1)(A) OF THE CAAA

FUNDING CYCLE:	Requests must be submitted through the jurisdiction in time for the annual Maricopa Association of Governments' TIP process, which generally begins in August or September of each year.
PURPOSE:	Explore options for market-based Transportation Control Measures (TCMs) including non-motorized transportation, road pricing, congestion pricing, vehicle miles traveled tax, and parking pricing as cost effective ways to reduce vehicle miles traveled and congestion.
APPLICABLE TYPES OF PROJECTS:	New construction and major reconstruction of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest. Programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas: Bicycle parking facilities, Showers and lockers for bicyclists, Bicycling education and marketing programs, Creation of bicycle paths, rights-of-way, to enable and encourage cycling, Provision of security for bicycle paths, rights-of-way, accommodation of bicyclists on transit.
GRANT AMOUNTS:	FY 2001 – 2005 federal CMAQ projects are funded through the Maricopa Association of Governments. MAG has an annual Transportation Improvement Program (TIP), which is incorporated into the State TIP (STIP) and used to guide the allocation of federal funds. There is no limit.
ELIGIBLE APPLICANTS:	Cities, Towns and Counties.
CONTACT:	Eric Anderson Maricopa Association of Governments 302 North 1st Avenue Phoenix, Arizona 85004
TELEPHONE:	602.254.6300
EMAIL:	eanderson@mag.gov
REQUIRED MATCH:	Depends on project.

LAND AND WATER CONSERVATION FUND (LWCF)

FUNDING CYCLE:	None specified.
PURPOSE:	LWCF has two components: A federal (Bureau of Land Management) program and a State matching grants program. Each state prepares and updates its statewide comprehensive outdoor recreation plan (SCORP), which identify needs and new opportunities for recreation. States initiate statewide competition for allocation for award via matching grants through National Park Service. LWCF is a visionary and bipartisan program, established by Congress in 1964 to create parks and open spaces, protect wilderness, wetlands and refuges, preserve wildlife habitat, and enhance recreational opportunities.
APPLICABLE TYPES OF PROJECTS:	Parks, playgrounds, wilderness to wetlands, bicycle paths to hiking trails, LWCF has helped communities acquire nearly seven million acres of park land, water resources, and open space.
GRANT AMOUNTS:	\$900 million per year, however the amount available in the fund for distribution to the States varies from year to year.
ELIGIBLE APPLICANTS:	State, County, and Local Government.
CONTACT PERSON:	Arizona State Parks – Grants and Recreation Programs Section 1300 West Washington Street Phoenix, Arizona 85007
TELEPHONE:	602.542.4174
EMAIL:	grants@pr.state.az.us
REQUIRED MATCH:	None.

TRANSPORTATION EFFICIENCY ACT FOR THE 21ST CENTURY (TEA-21) ENHANCEMENT FUNDS

FUNDING CYCLE:	Annual, applications are generally due to the Maricopa Association of Governments in August or September of each year.
PURPOSE:	<p>The federal highway bill of 1991, the Intermodal Surface Transportation Efficiency Act (ISTEA) broadened the federal government's transportation focus to include Transportation Enhancement Activities (TEA) – from beautification projects to bicycle and pedestrian facilities to the rehabilitation of historic transportation facilities.</p> <p>The funding, as continued under the Transportation Equity Act for the 21st Century (TEA-21), improves the cultural, aesthetic and environmental aspects of the transportation system. It also promotes diverse modes of transportation, increases benefits to communities and encourages citizen involvement in transportation decisions. With enhancement funding, communities can partner with the state to create and preserve treasures that can be enjoyed for generations.</p>
APPLICABLE TYPES OF PROJECTS:	There are ten eligible project categories: Facilities for bicycles and pedestrians; acquisition of scenic easements and/or scenic or historic sites; scenic or historic highway programs; landscaping and other scenic beautification; historic preservation; rehabilitation and operation of historic transportation buildings, structures, or facilities; preservation of abandoned railway corridors (rails to trails); control and removal of outdoor advertising; archeological planning and research; and mitigation of water pollution due to highway runoff.
GRANT AMOUNTS:	Up to \$500,000
ELIGIBLE APPLICANTS:	Cities, Towns, and Counties.
CONTACT PERSON:	Dawn Coomer Maricopa Association of Governments 302 North 1st Avenue, Suite 300 Phoenix, Arizona 85004
TELEPHONE:	602.254.6300
EMAIL:	dcoomer@mag.maricopa.gov
REQUIRED MATCH:	None.

U.S. ARMY CORPS OF ENGINEERS

FUNDING CYCLE:	There is no funding cycle for this program. After initial headquarters approval to initiate a study, the division usually approves projects.
PURPOSE:	The Corps' role as a funding source for a project should be characterized as the project becoming a federal project meeting federal objectives. The Corps identifies problems and opportunities, defines objectives and formulates solutions that meet those objectives.
APPLICABLE TYPES OF PROJECTS:	Improvements to Environment –Section 1135 of the Water Resources Development Act of 1986, as amended, authorizes a program of modifications to water resources projects constructed by the Corps for the improvement of the environment. Projects that address degradation of the quality of the environment caused by a Corps project may also be undertaken.
GRANT AMOUNTS:	Non-Federal sponsors are responsible for 25% of the project cost and usually 100% of the operation, maintenance, replacement and rehabilitation. Up to 80% of the non-Federal share may be provided as work-in-kind. Non-governmental entities may serve as the non-Federal sponsor. The Federal per project limit is \$5 million and the annual appropriation limit is \$25 million. Aquatic Ecosystem Restoration– Section 206 of the Water Resources Development Act of 1996 authorizes the Secretary to carry out aquatic ecosystem restoration projects that will improve the quality of the environment, are in the public interest, and are cost-effective. Individual projects are limited to \$5 million in Federal cost. Non-Federal interests must contribute 35% of the cost of construction and 100% the cost of operation, maintenance, replacement and rehabilitation. The program has an annual program limit of \$25 million. This program received initial funding of \$6 million in FY 1998.
ELIGIBLE APPLICANTS:	Cities, Towns, and Counties.
CONTACT PERSON:	John Drake US Army Corps of Engineers South Pacific Division 3636 N. Central, Suite 740 Phoenix, Arizona 85012-1936
TELEPHONE:	602.640.2003
EMAIL:	http://www.usace.army Jdrake@spl.usace.army.mil
REQUIRED MATCH:	See Grants Amount, above.

ARIZONA PRESERVE INITIATIVE (API)

- FUNDING CYCLE:** March 30, 2001 and every year for 11 years, beginning in State fiscal year 2001.
- PURPOSE:** To encourage the preservation of select parcels of State Trust Lands in and around urban areas for open space to benefit future generations. State Trust Lands can also be leased for up to 50 years or sold for the long-term benefit of the land, the beneficiaries, lessees, the public, and unique resources such as open space, scenic beauty, protected plants, wildlife, archaeology, and multiple-use values.
- APPLICABLE TYPES OF PROJECTS:** A state or local government, business, state land lessee or a group of citizens may petition the State Land Commissioner to have certain Trust land nominated and reclassified for conservation purposes. After all appropriate notifications, public hearings, consideration of physical and economic impacts to lessees and the Trust, the Commissioner may reclassify the subject land as suitable for conservation purposes. The Commissioner must consider recommendations from five-member Conservation Advisory Board that was established by law, as well as consult with local and regional planning authorities.
- GRANT AMOUNTS:** \$20 million per year for 11 years to award grants for the acquisition of State Trust Lands, leasing of up to 50 years, purchases of a parcel's development rights, or fee simple purchase of a parcel. Grants may be made by ASP Board for up to 50% of the appraised value of a land parcel.
- ELIGIBLE APPLICANTS:** Cities, Towns, Counties, and Not For Profit Conservation Entities.
- CONTACT PERSON:** State Land Commissioner
Land Department
1616 West Adams
Phoenix, Arizona 85007
- TELEPHONE:** 602.542.4621
- EMAIL:** <http://www.land.state.az.us>
- REQUIRED MATCH:** 50%.

ARIZONA STATE PARKS HERITAGE FUND – GAME AND FISH

FUNDING CYCLE: Application Deadline – No later than 5:00 p.m. on the last official workday of November each year.

PURPOSE: To support Game and Fish Management Conservation in Arizona.

APPLICABLE TYPES OF PROJECTS: Environmental education; schoolyard grants; Identification, Inventory, Acquisition, Protection, and Management of Sensitive Species and Habitats (IIPAM); Urban Wildlife and Urban Wildlife Habitat; Public Access.

GRANT AMOUNTS: Environmental education (\$27,000); School yard grants (\$41,300); Identification, Inventory, Acquisition, Protection, and Management of Sensitive Species and Habitats (IIPAM) (\$270,000); Urban Wildlife and Urban Wildlife Habitat (\$169,000); Public Access (\$100,000).

ELIGIBLE APPLICANTS: Federal government or any federal department or agency, Indian tribes, State of Arizona, all departments, agencies, boards, and commissions of State of Arizona, counties, school districts, cities, towns, all municipal corporations and any other political subdivisions of State of Arizona.

CONTACT PERSON: Robyn Beck, Heritage Grants Coordinator
Funds/Planning Section
Arizona Game and Fish Department
221 West Greenway Road
Phoenix, Arizona 85023-4312

TELEPHONE: 602.789.3530

EMAIL: [http://www.rbeck@gf.state.az.us](mailto:www.rbeck@gf.state.az.us)

REQUIRED MATCH: None specified.



ARIZONA STATE PARKS HERITAGE FUND- HISTORIC PRESERVATION

FUNDING CYCLE:	Annual grant cycle with applications due to the ASP Grants Application Review Program Section on the last working day of March. Application manuals are available annually in the winter and informational workshops are held prior to the application due date.
PURPOSE:	To support historic preservation efforts, including acquisition, stabilization and rehabilitation of historic properties and preservation education.
APPLICABLE TYPES OF PROJECTS:	Historic preservation activities eligible for funding include, but not limited to: stabilization, rehabilitation, restoration, reconstruction, education and preservation program development, interpretive development and acquisition. To qualify for grant assistance, projects must directly involve resources either listed on the Arizona or National Register of Historic Places or determined eligible by the State Historic Preservation Officer (SHPO) to be listed on the Arizona Register.
GRANT AMOUNTS:	ASP receives up to \$1.7 million each year from the Arizona Lottery Fund. Grants are awarded on a matching basis, where the applicant must provide at least 40% of the total project cost and the grant provides the remainder. For awarded grants, grantees are reimbursed for costs incurred during the approved project period. Matching funds can be in the form of cash or in-kind contributions.
ELIGIBLE APPLICANTS:	Incorporated municipalities, counties, state agencies, tribal governments and public educational institutions. Private non-profit organizations must meet certain conditions in order to apply for funding.
CONTACT PERSON:	Arizona State Parks Board Grants and Recreation Programs (GARP) Section 1300 West Washington Phoenix, Arizona 85007
TELEPHONE:	602.542.7131
EMAIL:	www.pr.state.az.us
REQUIRED MATCH:	See grant amounts above.

ARIZONA STATE PARKS HERITAGE FUND – TRAILS

FUNDING CYCLE: Application Deadline – No later than 5:00 p.m. on the last official workday of February.

PURPOSE: To support non-motorized trail acquisition, construction and improvements throughout Arizona.

APPLICABLE TYPES OF PROJECTS: Land acquisition, construction, and improvements for trails.

GRANT AMOUNTS: Up to \$500,000 annually from the Arizona State Parks Board Heritage Fund.

ELIGIBLE APPLICANTS: Incorporated municipalities, counties, state agencies, federal agencies and Indian Tribes.

CONTACT PERSON: Arizona State Parks
1300 West Washington
Phoenix, Arizona 85007

TELEPHONE: 602.542.4174

EMAIL: <http://www.pr.state.az.us>

REQUIRED MATCH: None.

ARIZONA STATE PARKS HERITAGE FUND – LOCAL, REGIONAL AND STATE PARKS (LRSP)

FUNDING CYCLE: Application Deadline – No later than 5:00 p.m. on the last official workday of February.

PURPOSE: To support land acquisition and development of facilities for outdoor recreation throughout Arizona.

APPLICABLE TYPES OF PROJECTS: Acquisition and construction of parks, trails and trailheads and interpretive facilities.

GRANT AMOUNTS: Budget – Up to \$3.5 million annually from the Arizona State Parks Board Heritage Fund.

ELIGIBLE APPLICANTS: Incorporated municipalities, counties, state agencies, and Indian Tribes.

CONTACT PERSON: Arizona State Parks Board
Grants and Recreation Programs (GARP) Section
1300 West Washington
Phoenix, Arizona 85007

TELEPHONE: 602.542.4174

EMAIL: <http://www.pr.state.az.us>

REQUIRED MATCH: None.

CAPITAL IMPROVEMENT PROGRAM (CIP)

FUNDING CYCLE:	The CIP is the jurisdiction's two to five year plan for the priority, timing, and financing of projects. It is re-evaluated annually to incorporate any changes to priorities and to incorporate new projects.
PURPOSE:	The CIP budgets for major public improvements to build or expand roads, bridges, parks and recreational facilities, water, stormwater, wastewater, and public safety facilities.
APPLICABLE TYPES OF PROJECTS:	Capital improvement projects include all construction projects. They can include trails, trailheads, parks, All Terrain Cycles (ATCs) and specialty parks.
GRANT AMOUNTS:	There is no minimum or maximum amount. Funding based on budget. This is not a grant program.
ELIGIBLE APPLICANTS:	This funding source applies to capital projects with the specific entity which adopts the CIP.
CONTACT PERSON:	City, town or county Budget Officer
REQUIRED MATCH:	None.

DEDICATIONS

FUNDING CYCLE:	Usually associated with rezonings or other actions associate with land development.
PURPOSE:	Generally, private land developers will dedicate land and/or improvements to provide public open space, parks or roads to the public. These dedications may be made to enable public maintenance and insurance of these areas or they may be a requirement of rezoning.
APPLICABLE TYPES OF PROJECTS:	Generally associated with rezoning, variance or special use permit applications submitted to the city of county or through development agreements. Applicable to all projects within the Study Area , including any of the proposed trail alignments.
GRANT AMOUNTS:	This is not a grant program.
ELIGIBLE APPLICANTS:	Public and private entities may receive dedications.
CONTACT PERSON:	Usually, the planning department or development services department of the jurisdiction implements this option.
REQUIRED MATCH:	This is not a grant program.

DENSITY TRANSFER

FUNDING CYCLE:	This is not a grant program, and has no cycle.
PURPOSE:	The On-Site Density Transfer is to provide an incentive to property owners for encouraging the protection, preservation and enhancement of significant sensitive lands and cultural resources. Sensitive resource areas may be set aside from development, while allowing a portion of the density, otherwise allowed upon the sensitive or cultural area, to be transferred to the developable (non-sensitive) portion of the site.
APPLICABLE TYPES OF PROJECTS:	Development projects.
GRANT AMOUNTS:	The specific areas to be protected and the amounts of density that can be transferred (can be 1:1 or more or less than 1:1) are determined by the implementing jurisdiction.
ELIGIBLE APPLICANTS:	Private landowners, cities, towns, and counties may benefit from Density Transfers.
CONTACT PERSON:	City or county planning department.
REQUIRED MATCH:	This is not a grant program.

GENERAL FUND

FUNDING CYCLE:	Fiscal Year for respective municipality.
PURPOSE:	The General Fund is used to provide all or part of the operating expenses for City services, including, but not limited to Police, Fire, Parks and Recreation, and Administration. General Funds may also be used for the purchase of land and equipment and the construction of public facilities. The General Fund includes revenues from sales tax, state shared revenues, grants and other non-dedicated sources.
APPLICABLE TYPES OF PROJECTS:	Maintenance and operation of parks and trails, construction of parks and trails and related facilities not addressed through bond funds or other sources.
GRANT AMOUNTS:	The specific amounts are determined through the City's operating budget or Capital Improvement Program.
ELIGIBLE APPLICANTS:	The entity, or its designee, that owns the General Fund benefits from it.
CONTACT PERSON:	City or county budget office.
REQUIRED MATCH:	This is not a grant program.

PERFORMANCE BASED ZONING

FUNDING CYCLE:	Associated with land development.
PURPOSE:	Under performance zoning, land development and use are regulated by a series of performance standards relating to specific impacts of a proposed development. Performance standards can, for example, limit the intensity of development, control the impacts of development on nearby land uses, limit the effects of development on public infrastructure, and protect the natural environment.
APPLICABLE TYPES OF PROJECTS:	Any development or redevelopment project.
GRANT AMOUNTS:	This is not a grant program.
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	Usually, the planning department or development services department of the jurisdiction administers zoning. The elected body of the jurisdiction approves zoning.
REQUIRED MATCH:	This is not a grant-based program.

REVENUE BONDS

FUNDING CYCLE:	As needed.
PURPOSE:	Revenue bonds are issued by the county or municipality and backed by a dedicated revenue stream. The advantage to utilizing revenue bonds is that people using the facilities pay for the facilities via park entrance fees or other charges.
APPLICABLE TYPES OF PROJECTS:	Recreation facilities including swimming pools, parks, playgrounds, municipal golf course, ball parks, and open space.
GRANT AMOUNTS:	Determined by the bonding capacity of the county or municipality. Specific project amounts determined by the jurisdiction.
ELIGIBLE APPLICANTS:	Entity that issues the bond.
CONTACT PERSON:	Jurisdiction Budget Officer.
REQUIRED MATCH:	This is not a grant program.

TRANSFER OF DEVELOPMENT RIGHTS (TDR)

FUNDING CYCLE:	This is not a grant program, but is implemented through rezoning or development agreements.
PURPOSE:	City authorized Transfer of Development Rights Programs transfer development rights from one property or development parcel to another. These programs use market forces to simultaneously promote conservation in high value natural, agricultural and open space areas while encouraging smart growth in developing sections of a community. In a TDR program, a community identifies an area within its boundaries which it would like to see protected from development (the sending zone) and another areas where it would like to encourage development (the receiving zone). Landowners in the sending zone are allotted a number of development credits that can be sold or applied to another parcel. As a result of the transfer, the 'receiving' parcel may be developed at densities higher than permitted by the General Plan.
APPLICABLE TYPES OF PROJECTS:	Residential and commercial development projects that include areas within floodplains or/and floodways.
GRANT AMOUNTS:	This is not a grant program.
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	Usually, the planning department or development services department of the jurisdiction implements this option.
REQUIRED MATCH:	This is not a grant program.

BIKES BELONG

FUNDING CYCLE:	Rolling.
PURPOSE:	Members of the American Bicycle Industry sponsor Bikes Belong Coalition. Our goal is putting more people on bikes more often. We seek to assist local organizations, agencies and citizens in developing bicycle facilities projects that will be funded by TEA-21, the Transportation Equity Act for the 21st Century.
APPLICABLE TYPES OF PROJECTS:	The coalition seeks to assist local organizations, agencies and citizens in developing bicycle facilities projects that will be funded by TEA-21.
GRANT AMOUNTS:	Up to \$10,000, successor grants for continuing projects will be considered.
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	Bikes Belong 368 Beacon Street, Suite 102 Brookline, MA 02446-2800
TELEPHONE:	617.734.2800
EMAIL:	Mail@Bikesbelong.org
REQUIRED MATCH:	None.

EASTMAN KODAK AMERICAN GREENWAYS AWARDS

FUNDING CYCLE:	March 1 to June 1 each year.
PURPOSE:	This is a partnership project of Kodak, The Conservation Fund and the National Geographic Society instituted in response to the President's Commission on Americans Outdoors recommendation to establish a national network of greenways. The Goals of the program are to develop new, action-oriented greenway projects; assist grassroots organizations, leverage additional money for conservation and greenway development, and recognize and encourage greenway proponents and organizations.
APPLICABLE TYPES OF PROJECTS:	Activities such as mapping, ecological assessments, surveying, conferences and design activities; developing brochures, interpretative displays, audio-visual productions or public opinion surveys; hiring consultants, incorporating land trusts; building a foot bridge, planning a bike path. In general, grants can be used for all appropriate expenses needed to complete a greenway project including planning, technical assistance, legal, and other costs.
GRANT AMOUNTS:	Up to \$2,500 most grants range from \$500 to \$1,000.
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	American Greenways The Conservation Fund 1800 North Kent Street, Suite 1120 Arlington, VA 22209
TELEPHONE:	703.525.6300
EMAIL:	www.conservationfund.org
REQUIRED MATCH:	None.

2002 NATIONAL TRAILS ENDOWMENT

FUNDING CYCLE:	Applications must be postmarked by November 30, 2001.
PURPOSE:	Millions of people enjoy trails annually, yet many of our favorite trails are in a major state of disrepair due to an enormous federal backlog of badly-needed trail maintenance. By awarding much-needed grants to trail clubs across that nation, the National Trails Endowment program helps clubs secure volunteers, tools and materials to protect our cherished trails.
APPLICABLE TYPES OF PROJECTS:	Securing trail lands, including acquisition of trails and trail corridors and the costs associated with acquiring conservation easements, building and maintaining trails which will result in visible and substantial ease of access, improved hiker safety, and/or avoidance of environmental damage. Constituency building surrounding specific trail projects - including volunteer recruitment and support.
GRANT AMOUNTS:	Usually between \$2,500 and \$5,000, with a maximum of \$10,000.
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	Liz Dooley Alliance Programs Manager American Hiking Society Attn: National Trails Endowment 1422 Fenwick Lane Silver Spring, MD 20910
TELEPHONE:	301.565.6704
EMAIL:	Ldooley@americanhiking.org
REQUIRED MATCH:	None.

NATIONAL RECREATIONAL TRAILS FUNDING PROGRAM

FUNDING CYCLE:	Annual, following Federal fiscal year.
PURPOSE:	Maintenance of recreational trails and trail facilities.
APPLICABLE TYPES OF PROJECTS:	50% of funds provided for Off Highway Vehicles, the balance is allocated for non-motorized trails, including equestrian. The program focus changes annually as well.
GRANT AMOUNTS:	The total amount available and the total amount available per project changes annually and dependent on total fund income. Fund income is derived from State gas tax receipts and the total amount of the fund changes annually.
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	Annie McVay, Recreational Trails Coordinator Partnership Division Arizona State Parks 1300 W. Washington Street Phoenix, Arizona 85007-2932
TELEPHONE:	602.542.7116 or 602.254.6300
EMAIL:	amcvaay@pr.state.az.us
REQUIRED MATCH:	20% match.

NORTH AMERICAN WETLANDS CONSERVATION COUNCIL SMALL GRANTS

FUNDING CYCLE:	Annual, applications are generally due to the Maricopa Association of Governments in August or September of each year.
PURPOSE:	The purpose of the 1989 North American Wetlands Conservation Act (NAWCA), as amended, is to promote long-term conservation of North American wetland ecosystems, and the waterfowl and other migratory birds, fish and wildlife that depend upon such habitat.
APPLICABLE TYPES OF PROJECTS:	Principal conservation actions supported by NAWCA are acquisition, creation, enhancement and restoration of wetlands and wetland-associated uplands. Funding priority will be given to projects from new grant applicants (individuals or organizations who have never received a NAWCA grant) with new partners, where the project ensures long-term conservation benefits. This does not preclude former NAWCA grant recipients from receiving Small Grants funding; ultimately, project resource value is the critical factor in deciding which projects are funded by the Council. At this time, the Small Grants program is open only to projects proposed for the U.S.; it is not open to projects in Canada or Mexico.
GRANT AMOUNTS:	To be considered for funding in 2002, proposals must have a grant request no greater than \$50,000. Proposals requesting more than \$50,000 are ineligible for Small Grants program funding. All wetland conservation proposals that meet the requirements of the Act will be accepted.
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	North American Waterfowl and Wetlands Office, U.S. Fish and Wildlife Service 4401 North Fairfax Drive, Suite 110 Arlington, VA 22203 Attn: Small Grants Coordinator
TELEPHONE:	708.358.1784
REQUIRED MATCH:	None.

RECREATIONAL EQUIPMENT INCORPORATED (REI)

FUNDING CYCLE:	Rolling.
PURPOSE:	Outdoor Recreation Grants support projects that increase access to outdoor activities, encourage involvement in muscle-powered recreation, promote safe participation in outdoor muscle-powered recreation and proper care for outdoor resources. Conservation Grants support projects that mobilize and build constituencies, or influencing public policy to protect lands and waterways, make these resources accessible to more people who enjoy the outdoors better utilize and preserve our natural resources for recreation.
APPLICABLE TYPES OF PROJECTS:	Trails, greenways, trail maintenance and a wide range of conservation projects.
GRANT AMOUNTS:	\$200 to \$2,000
ELIGIBLE APPLICANTS:	Public and private entities.
CONTACT PERSON:	Local REI store.
TELEPHONE:	Varies.
EMAIL:	www.rei.com
REQUIRED MATCH:	None.

FREINDS OF THE WEST VALLEY RIVERS

FUNDING CYCLE:	None. This is a an entity under the auspices of Valley Forward Association and WestMarc.
PURPOSE:	To support the conservation of the West Valley Rivers as multi-modal open space corridors.
APPLICABLE TYPES OF PROJECTS:	Recreation, open space, non-motorized transportation, trail and other projects that will result in the conservation of the Agua Fria and New Rivers.
GRANT AMOUNTS:	None.
ELIGIBLE APPLICANTS:	None.
CONTACT PERSON:	Dianne Brossart, Executive Director Valley Forward Association 3800 North Central Avenue Phoenix, Arizona 85012
TELEPHONE:	602.240.2408
EMAIL:	www.valleyforward.org
REQUIRED MATCH:	Not applicable.

8. TRAIL DESIGN GUIDELINES

8.1 INTRODUCTION

The purpose of this section is to present a workable set of Off Street Trail/ Path Design Guidelines to complement the trails and paths recommended in this report. This document is intended to provide guidance that will result in the creation of a series of connected, consistently designed trails, paths and trailheads in the North Peoria Area Drainage Master Plan Study Area. The design guidelines address four areas that are integral to trail design: placement, trail design, access and conservation.

8.2 TRAILS AND TRAILHEADS

PLACEMENT

General Guidelines:

The Placement of trails throughout the Study Area should implement the goals, objectives and policies of the North Peoria Area Drainage Master Plan. The following guidelines should be considered in the placement of trails throughout the Study Area:

- Permitted uses should not exceed the ambient noise levels of the surrounding areas.
- Whenever possible, trails should be continuous with existing or planned trails.
- Hard surface trails should be placed outside the floodplain.
- Permit the use of floodplains and floodways for informal, unmarked and unimproved trails.
- Place trails between natural, environmentally sensitive, or wildlife corridor areas and development when possible and practical.
- Place parking areas, trailheads and signing outside the floodplain and floodways.

DESIGN

General Guidelines:

Generally, the North Peoria Area Drainage Master Plan recommends a non-motorized paved, shared use trail along Twin Buttes and Caterpillar Tanks Washes in the Twin Buttes portion of the Study Area and a marked, unpaved shared use trail along the Morgan City Wash in the Morgan City Area.

Width:

- Require a minimum tract/ easement width of no less than 25 feet.
- Require a 10 foot wide minimum (12 foot minimum preferred) paved surface width.

Surface:

- Require surface = 3" (minimum) 3,000 psi concrete or hot mix asphalt (saturate and compact native soil sub-base to 95% compaction, minimum 12" depth).
- Require use of a non-selective herbicide to prevent vegetative growth under the trail.

Gradients:

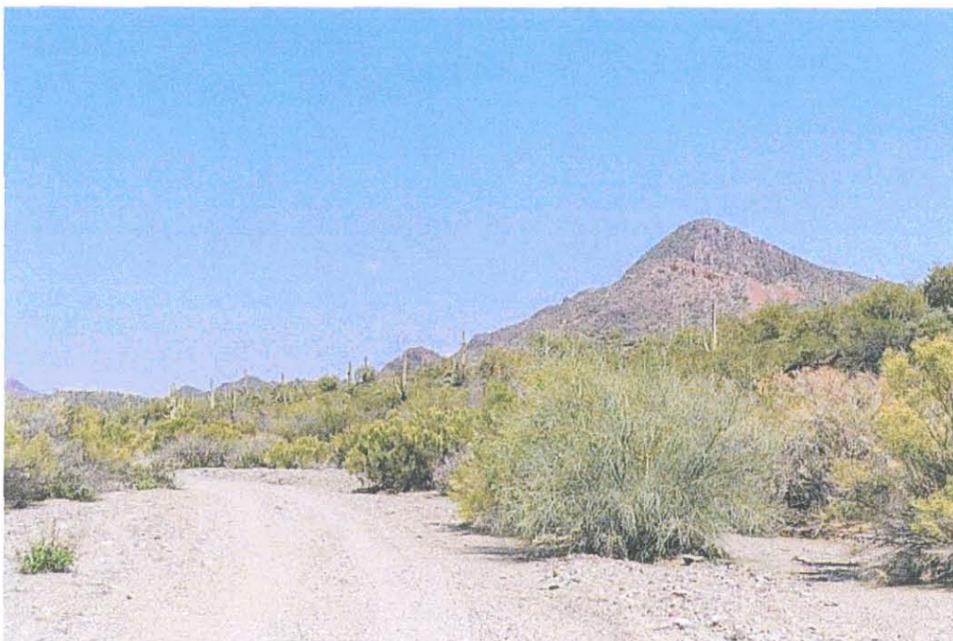
- Require maximum horizontal grade = 5%.
- Require minimum cross slope of 2% per AASHTO to allow for proper drainage.
- Shared Use Trail intersections and approaches should be on relatively flat gradients (5% maximum). Stopping distances at intersections should be checked and adequate warning/ signage should be given to permit bicyclists to stop before reaching the intersection.

Clearance/Markings:

- Require white paint striping to delineate two-way travel. Striping shall occur at the edge and at centerline of the shared use trail.
- Require an 8.5' vertical clearance (minimum).
- Require a 2' horizontal clearance (minimum) to obstructions/ vegetation at edge of trail.
- Removable bollards are only to be used at nodal areas if non-approved motorized encroachment is occurring on a regular basis.

Safety:

- Require all facilities meet the A.D.A. Accessibility Guidelines for Building and Facilities, 1998.
- Require all stopping sight distances, horizontal and vertical curve radii and grades to meet AASHTO guidelines.
- Prohibit motorized use of on all Shared Use Trails, with the exception of authorized repair/ maintenance/ emergency vehicles.
- Emergency or public telephones should be installed at all major nodes, trailheads and all areas where the public's safety is in question.
- When crossing an arterial street trail crossing, the crossing should occur either at the pedestrian crossing, where motorists expect such interaction or at a location completely out of the influence of any intersection. This will permit users to see vehicles and other conflicts. When there is a mid-block crossing, devices such as yield signs or stop signs should delineate rights of way, or traffic signals, which can be activated by the trail users. In some cases, bike-crossing signs or a flashing yellow light should be placed in advance of the crossing to alert motorists.
- Detectable warnings and push button actuated controls with locator tones must be placed at curb ramps and cut-throughs to identify the street edge for visually impaired users.
- Speed bumps or surface obstructions (domes) should not be used to delineate bike lanes.



Maintain views and open vistas

ACCESS

- Access for ingress and egress to the trail system from streets, adjacent crossings and other trails shall be at grade. Any ramps and crossings should match the width of the adjoining trail system.
- Public access to trails shall be required through all private and public parks, open spaces golf courses, floodplains and erosion hazard zones.
- Connections to trails within $\frac{1}{4}$ mile of all public and private parks and open spaces shall be established.

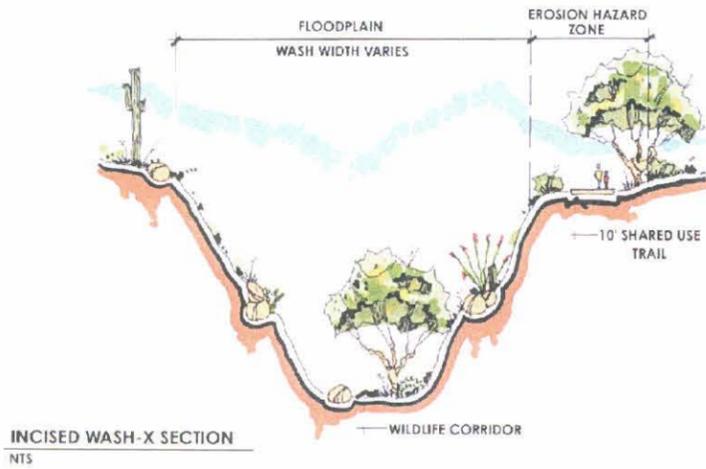
IDENTIFICATION

- Directional signs describing the trail system at major entry points shall be provided in the Twin Buttes and Morgan City Areas when possible and practical.
- Identification of natural areas, cultural resources and trail connections shall be provided on all trails within the Twin Buttes and Morgan City Areas when practical and possible.
- Markings indicating street crossings, or interaction with motorized traffic shall be provided when possible and practical along all trails.

DESIGN CROSS-SECTIONS

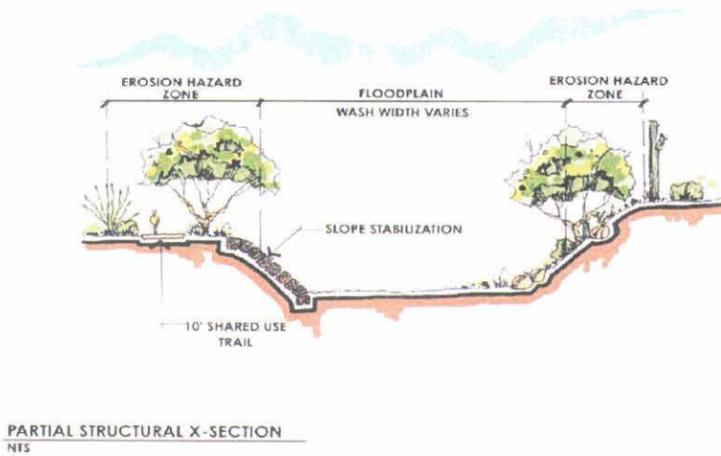
Examples of potential trail designs for washes within the Morgan City, Twin Buttes and Saddleback Mountain areas are provided below.

Typical Cross-Section for Unnamed Washes 1,2, and 3 within the Big Springs Area

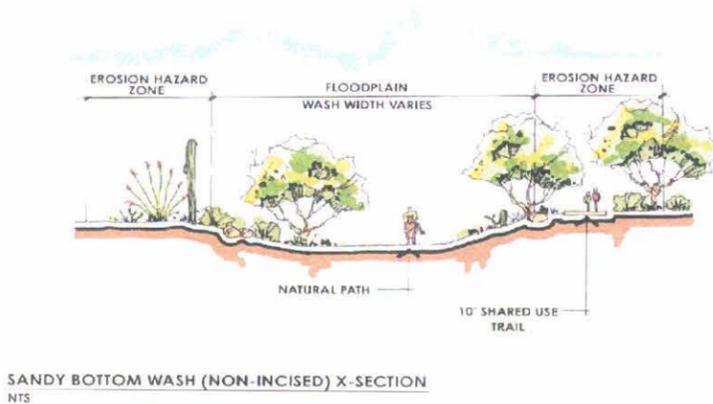


A 10' (minimum) shared use trail located outside the floodplain of a wash in the Big Springs area.

Typical Cross-Section for Caterpillar Tanks and Twin Buttes Washes within the Twin Buttes Area



A typical cross-section for a trail within along a partially structured wash within the Twin Buttes Area, showing a 10' wide trail within the Erosion Hazard Zone. No improvement occur within the channel.



A typical cross-section for a trail within the Twin Buttes Area, showing a 10' wide trail and an, unmarked path within the channel.

8.3 VEGETATION AND VIEWS CONSERVATION

This section provides guidance regarding conserving natural resources and views within trail corridors identified in the Area Drainage Master Plan. The Study Area natural environment will change with the development of trails along and/or within the Study Area. The following guidelines will assist in minimizing the impact of manmade modifications.

VIEWS

Landscapes and vistas are viewed to varying degrees from different areas of the trail system. The position of the viewer or user will determine whether the view is framed and if the elements that are viewed are in a close proximity or at a considerable distance. Undesirable views may also be screened so that the user experience is enhanced.

- Require a maximum height of six feet for solid walls within 15' of trails and paths.
- Whenever possible and practical, provide landscaping that frames or permits views of natural features.

VEGETATION

The majority of landscape plant materials selected were chosen for their suitability in meeting the following criteria:

- Low maintenance
- Disease and insect resistance
- Adaptability to arid environments
- Soil adaptability
- Fruitless
- Non-allergenic
- Seasonal color/flowering characteristics
- Texture
- Size
- Growth Rate
- Non-poisonous (Equestrian Path or Natural Path)

All plant material shall meet the minimum size as specified in the Unified Land Development Code (Article X) and be irrigated with an automated irrigation system.

The following sections describe recommended plant materials for The City of Peoria Trail Design Standards.

RECOMMENDED PLANT LIST

(* Denotes plant not to be planted within 5' (shrub/ accent) 10' (tree) of the Equestrian Path or Natural Path.

TREES

<u>Botanical Name</u>	<u>Common Name</u>
(*Acacia sp.	Acacia
Carnegiea gigantea	Saguaro
(*Cercidium sp.	Palo Verde
Chamaerops humilis	Mediterranean Fan Palm
Chilopsis linearis	Desert Willow
Geijera parviflora	Australian Willow
Lysiloma sp.	Desert Fern
(*Olneya tesota	Ironwood
(*Pithecellobium sp.	Ebony
Prosopis sp.	Native Mesquite
Quercus sp.	Oak
Sophora secundiflora	Texas Mountain Laurel

SHRUBS

<u>Botanical Name</u>	<u>Common Name</u>
Acacia sp.	Acacia/Wattle
Ambrosia deltoidea	Triangleleaf Bursage
Baccharis hybrid 'centennial'	Centennial Desert Broom
(*Bougainvillea sp.	Bougainvillea
Caesalpinia sp.	Red Bird of Paradise
Calliandra species	Fairy Duster
Cassia sp.	Cassia
Convolvulus cneorum	Bush Morning Glory
Dalea sp.	Dalea
Encelia farinosa	Brittlebush
Hyptis emoryi	Desert Lavender
Justicia spicigera	Mexican Honeysuckle
Lantana sp.	Lantana
Leucophyllum sp.	Texas Ranger
Ruellia sp.	Ruellia
Salvia sp. (shrub only)	Sage
Simmondsia chinensis	Jojoba
(*Sophora secundiflora	Mescal Bean
Tecoma stans	Yellow Bells

GROUNDCOVERS/ HERBACEOUS PLANTS

Botanical Name

Acacia redolens 'Desert Carpet'
Asparagus densiflorus cv. sprengeri
Baccharis hybrid 'centennial'
Centaurea cineraria
Convolvulus mauritanicus
Dalea sp.
Gazania sp.
Lantana montevidensis
Oenothera berlandieri
Oenothera drummondii
Salvia farinacea
Santolina chamaecyparissus
Sphaeralcea sp.
Verbena sp.

Common Name

Desert Carpet Acacia
Sprenger Asparagus
Centennial Desert Broom
Dusty Miller
Ground Morning Glory
Dalea
Ganzania
Trailing Lantana
Mexican Evening Primrose
Baja Primrose
Mealy Cup Sage
Lavender Cotton
Globe-Mallow
Verbena

ANNUALS/ PERENNIALS

Botanical Name

Baileya multiradiata
Eschscholzia californica
Eschscholzia mexicana
Melampodium leucanthum
Penstemon sp.
Zauschneria californica

Common Name

Desert Marigold
California Poppy
Mexican Gold Poppy
Blackfoot Daisy
Penstemon
Hummingbird Flower

SUCCULENTS

Botanical Name

(*)Agave sp.
(*)Aloe sp.
(*)Cacti (all)
(*)Dasylirion sp.
(*)Hesperaloe sp.
(*)Fouquieria splendens
(*)Nolina sp.
(*)Yucca sp.

Common Name

Agave
Aloe
Cactus
Desert Spoon
Red Yucca
Ocotillo
Bear Grass
Yucca

GRASSES

Botanical Name

Aristida purpurea
Bouteloua sp.
Muhlenbergia sp.

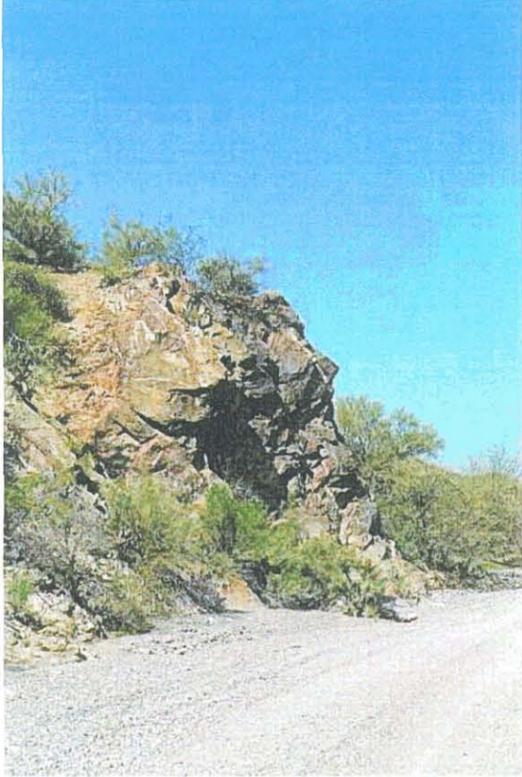
Common Name

Purple Three Awn
Grama
Deer Grass

NATURAL FEATURES/OPEN SPACE

The following guidelines are suggested to encourage the conservation of open space and natural features.

- Avoid signing, paving or other trail development activities within open space areas when possible and practical.
- Maintain the natural aesthetic qualities of the areas that are visually prominent or offer unique settings.



Informal unmarked trail in a wash

NORTH PEORIA AREA DRAINAGE MASTER PLAN



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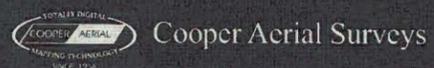
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