

AGUA FRIA

WATERCOURSE MASTER PLAN

Recreation Corridor Report

Prepared for



A109.216

October 2001



CORNOYER-HEDRICK



Kimley-Horn
and Associates, Inc.

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Acknowledgements

This watercourse master plan was prepared by a group of Maricopa County and Consulting professionals dedicated to improving the way we protect people and property from flood damages while meeting the multiple use needs of a growing population. The commitment to this ideal was demonstrated throughout this project by the Maricopa County Board of Supervisors and by leaders of the Flood Control District of Maricopa County. Finally, the plan for the West Valley Recreation Corridor captures the vision of John F. Long — a man who has spent his entire life trying to improve and promote quality of life for families in the West Valley.

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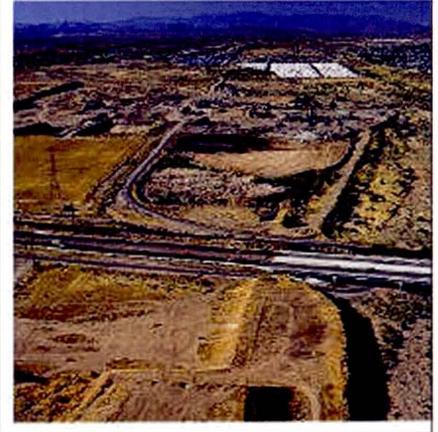
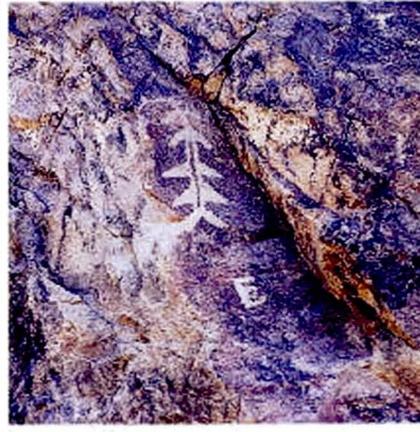
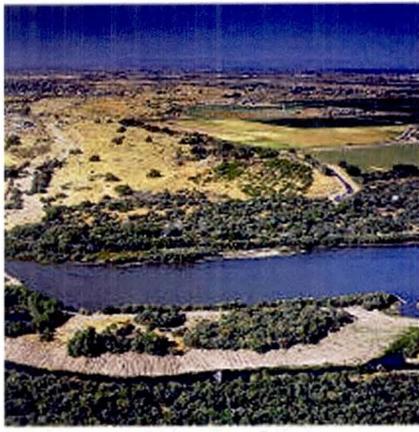
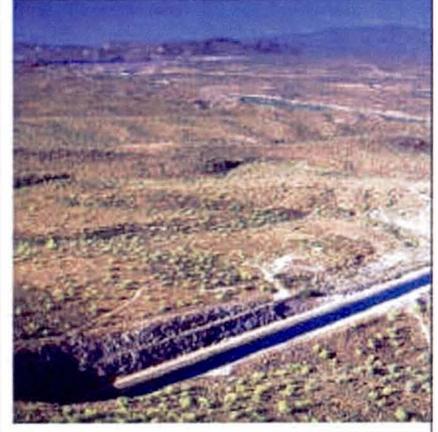
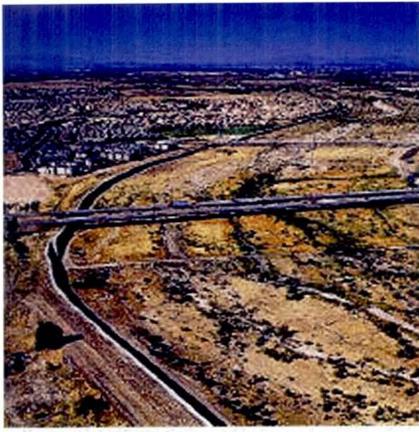
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Recreation Corridor Report

Executive Summary

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and Associates, Inc.

1. INTRODUCTION

1.1 *PURPOSE:*

Multiple use flood control techniques and structures increase the value of flood control to the community by providing public investments that are used during non-flood time and flood events. These facilities and techniques can retain their primary function of protecting the health and safety of Maricopa County residents from the hazards of flooding without compromising the potential for multiple uses in and along the Agua Fria River. This report recommends open spaces, trails, and recreation facilities that could be integrated into the flood control techniques and facilities proposed in the Agua Fria Watercourse Master Plan. It also identifies open space, trail, and recreation opportunities that should be considered in the implementation of flood control techniques and the design and construction of flood control facilities along and within the Agua Fria River.

1.2 *PLAN CONTEXT:*

The Agua Fria River is located in Western Maricopa County, Arizona. The River originates north of the Prescott Valley in Yavapai County and terminates at the Gila River in Maricopa County. North of Rock Springs, the River is an intermittent source of water fed by a series of tributaries until its termination at the New Waddell Dam. Below the New Waddell Dam, the River is dry with the exception of small areas fed by runoff, seepage from the Dam, Morgan City Wash, and other sources.

The River passes through seven jurisdictions and unincorporated Maricopa County. The majority of the River lies within the corporate limits of Maricopa County and the City of Avondale Planning Area. The vast majority of land within and along the River is privately owned. The State Land Trust is the second largest landowner, followed by Federal Agencies and the County.

1.3 *RIVER REACHES*

The three reaches (sections) and fourteen sub-reaches (subsections) of the River referred to in this report are consistent with other reports included in the Watercourse Master Plan.

2. DEMOGRAPHICS

Population within one mile of the Agua Fria River is projected to increase 104% between 2000 and 2020. The largest percentage increases are projected as areas in north Peoria and west Glendale develop. Increases in retail, service and industrial employment are also projected within one mile of the River. The largest increases in employment are projected in Peoria. These increases reflect the undeveloped nature of the northern areas of the River.

2.1 ADJACENT LAND USE INVENTORY

Residential development is located or planned along a vast majority of the Agua Fria River. Some newer residential developments include open spaces and trails adjacent to the River and provide opportunities to connect to it. New residential land uses will continue to provide opportunities to connect to the River and a population base which will benefit from open spaces, trails and other recreation facilities that could be developed along the Agua Fria River as a part of multiple use flood control facilities and techniques. Other land uses use, in particular existing and planned mining operations generally located between the confluence of the Agua Fria River with the New River and Jomax Road, have created large areas adjacent to and within the River that are generally incompatible with many types of multiple use recreation activities. As these uses retire, they provide opportunities for development or open space that may be more compatible with the multiple uses that could be incorporated into flood control facilities or techniques. Prior flood control improvements including levees and drop structures are mostly located between Buckeye and Camelback Roads. These single use facilities were designed to protect residential and commercial areas from flooding before the Agua Fria River was viewed as a resource for recreation, open spaces and trails. They provide some opportunities for trails and access to the river and exist where there is current demand for these elements.

3. INVENTORY OF PLANNED AND EXISTING RECREATION FEATURES, RELEVANT PLANS, AND INVENTORY OF OTHER INFLUENCES ON RECREATION, RECREATION NEEDS ANALYSIS

Six parks are either planned or under development within one mile of the Agua Fria River. Planned parks within one mile of the floodplain are located in the Cities of Avondale, Surprise, and Peoria. Public and private open spaces are dispersed along the River, and with the exception of the River corridor, are not continuous. These open spaces include slopes, golf courses, and buffer areas. Several existing and planned trails intersect with the River. These include bicycle lanes and routes and shared use facilities. The most significant trail is the Sun Circle Trail, which is planned to be within the Agua Fria River corridor. The New River, which intersects with the Agua Fria River at Camelback Road, is also designated a shared use multi-modal transportation corridor. The planned and existing parks, trails and open spaces along the Agua Fria River are identified in at least 15 plans and reports adopted, prepared or accepted by the regulatory entities along the River.

Influences on recreation include flooding and erosion, existing and planned recharge facilities, mining activities, pre-historic cultural, historic cultural, and ecological resources. Some of these influences provide opportunities for activities such as interpretation, wildlife viewing, or passive recreation while others may pose challenges to access, connectivity, and conservation of the River's resources.

Based on the inventory of planned and existing parks and recreation facilities, the recreation and open space demand of the population within one mile of the study area should generally meet National Recreation and Parks Association standards for parks, open spaces and trails.

4. OPPORTUNITIES, PLANNING ISSUES AND PLANNING MANAGEMENT AREAS

Maintenance Road and In-River Trail

To accomplish the goal of linking recreation resources, interpretive, cultural, and natural areas along the watercourse, a river-based all weather access maintenance road that permits non-motorized recreational use is proposed to connect the Gila River with Lake Pleasant. Along the levee Reach of the River, the maintenance road trail could be continued on the sides of the levee as an along both sides of the River. This trail could be directly accessible to residents along the River and offer amenities that would not be possible within the floodplain, such as lighting, benches, and rest areas.

Opportunities also exist within the River to place a continuous stabilized surface trail from the Avondale mitigation site to Camelback Road. Mining makes passage within the River difficult north of Camelback Road to approximately Bell Road. The in-river trail could continue along the New River to Olive Avenue or agreements with mining operators could provide access within the Agua Fria River that bypasses their operations. North of Olive Avenue, the in-river trail could generally be continued State Route 74 (there are some existing mines that would have to be avoided or bypassed), where on-street access would be necessary to enter Lake Pleasant Park.

Trailheads

Several trailheads are proposed to connect to existing trails that intersect with the River and provide access to it. Depending on available land and adjacent land use, opportunities for two general types of trailheads exist. A major trailhead would include horse trailer parking, other equestrian facilities, restrooms, shade areas, and water. These areas would be located with parks whenever possible. A minor trailhead could be developed closer to residential areas and provide parking areas, directional signs and limited amenities.

Natural Areas and Passive Open Spaces

Opportunities for open space, interpretive, and passive recreation facilities exist at the northern and southern ends of the river in Avondale at the confluence with the Gila River and in Peoria to approximately State Route 74. At the junction of I-10 and the River an opportunity exists to integrate the proposed mitigation site into an open space interpretive area with in-channel trails. Other natural open spaces are proposed at Rose Garden Lane and between Patton Road and Dixletta Drive.

Parks

Developed Parks

Parks could be developed to serve residential areas between Union Hills and Joy Ranch roads. These include parks in El Mirage at the Peoria Avenue alignment, and a second at the McMicken Dam Outfall Channel.

Interpretive Areas

Tremendous opportunity for interpretation exists along the River. These areas could reinforce the history of the River as a resource for mining, agriculture, and water. Interpretive areas are could also be associated with recharge facilities sited within the River floodplain.

Archaeological Areas

Several archaeological areas from the Hohokam period were identified. Several resources including Calderwood Butte, Casa de Piedras (north of Calderwood Butte) and pit houses throughout the northern reach, exist for interpretive parks and signing.

4.1 RECREATION PLANNING ISSUES

A variety of issues were taken into account in the development of the recommendations included in this report. These considerations included recreation, recharge, archaeological, cultural, flooding, erosion and environmental considerations.

4.2 PLANNING MANAGEMENT AREAS

Three planning management areas, used to provide guidance regarding the types of open spaces, trails and recreation facilities most appropriate to the River at any given location, were identified. Urban, suburban, and rural management areas were identified based on resources and features within the River and adjacent land uses.

5. RECOMMENDATIONS

To guide the development of recommendations included in the report, a vision and supporting goals, objectives and policies were developed based on comments from public meetings and stakeholders. The report vision is to “understand the potential to complement the flood control functions of the Agua Fria River by creating a dynamic open space and recreation corridor that remembers landscapes of the River, the people who lived along and within it, and provides recreation opportunities for current and future residents.” The goals are summarized as follows:

- Create activity within the Agua Fria River while minimizing the impact of recreation on the landscape.
- Use the River as a bridge to connect to the cultural history of the West Valley.
- Connect the open space recreation resources along the river to each other, adjacent neighborhoods, and other recreation and open space resources in the West Valley, the Region, and the State.
- Provide access to the River.
- Provide interpretation through signs, literature, websites and events to introduce residents to the natural and cultural history of the River.
- Integrate ecological values with recreation concepts.
- Integrate recreation functions into flood control facilities.

5.1 PLAN OVERVIEW

A variety of open space, trail and recreation facilities are recommended in this report. They are listed below, from the south to north and documented on the map on the following page.

SOUTHERN REACH: Gila River to confluence of New River

- A park, major trailhead, and the initiation and terminus of a stabilized surface trail along the eastern edge of the River at Avondale Mitigation Site **(36)**.
- Restore riparian area at the confluence of the Gila River as a habitat and interpretive area.
- Interpretive signs at the Avondale Mitigation Site park and the Gila River confluence.
- An equestrian trailhead **(35)** at Lower Buckeye Road on the east side of the River.
- A primary, paved surface trail **(15)** along the levee to its end at the New River confluence.
- Stabilized surface in-river trail **(13)** that provides equestrian use, and marked by bollards in the river channel.
- Interpretive facility associated with the Santa Fe and Southern Pacific Railroad.
- Mixed-use river oriented node **(33)** at Lower Buckeye Road.
- Continuation of in-river trails north of Olive Avenue.
- Trailhead at Coldwater Park to provide access to the on-bank and in-river trails.
- Connections from the private park associated with the Rancho Santa Fe master planned community to the west levee trail are recommended **(31)**.
- Habitat area at I-10.
- A park associated with the reclaimed mine located south of the Roosevelt Irrigation District Canal **(30)**.
- Connection from the primary and secondary trails to the Roosevelt Irrigation District canal **(29)**.
- River access to residents of Villa De Paz, on the east side of the River at Indian School Road **(28)**.
- Equestrian access at Camelback Ranch Park **(27)**.

CENTER REACH: Bell Road to confluence of New River (Camelback Road)

- Alternative trail access along the New River **(26)** to Olive Avenue.
- Trailhead at Olive Avenue **(10)**.
- A park associated with the existing vegetation at Peoria Road in El Mirage **(11)**.
- Connections to the Youngtown Maricopa Lake Park, constructed as part of bank stabilization on the east side of the River **(25)**.
- Trails merge and continue on-street to Bell Road **(24)**.
- Trailhead at the northwest corner of Bell Road and the Agua Fria River **(23)**.
- Park proposed for the McMicken Dam Outfall Channel **(5)**.

NORTHERN REACH: New Waddell Dam to Bell Road

- Trail continues from the McMicken Dam Outfall Channel park through an elevated creosote flat **(6)**.
- Trailhead on the west side of the River associated with State Route 101 or Beardsley Road.
- A connection to Twin Buttes Wash **(22)**.
- Riparian area is recommended in association with planned recharge basins **(21)**.
- Interpretive areas at Calderwood Butte, Casa de Piedras, the Central Arizona Project and Beardsley Canals **(4)**.
- An open space area is recommended north of Casa de Piedras **(20)**.
- Connections to the three major washes on the west side of the river **(18)**.
- Trailhead in conjunction with the proposed City of Peoria Regional Park **(19)**.
- Trailhead and connections to the planned Maricopa County on-street bicycle route along State Route 74 and to the Lake Pleasant Park at the State Route 74 Bridge **(17)**. George's pond area conserved as a habitat area.

6. IMPLEMENTATION

This is discussed in a separate report included in the Watercourse Master Plan.

PROPOSED RECREATION CORRIDOR PLAN

Figure 9

This map shows the proposed recreation features, in addition to existing and planned recreation facilities in the vicinity of the Agua Fria River.

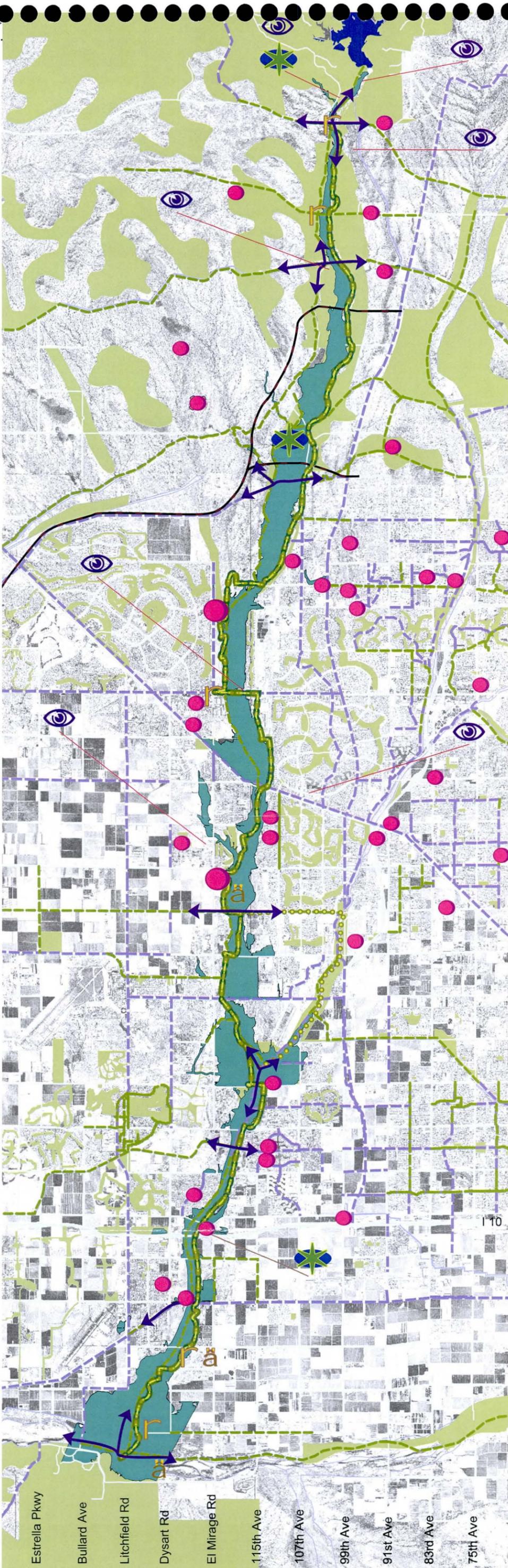
Legend

-  Floodplain
-  Upland/Open Space
-  Proposed Corridor Park
-  Planned and Existing Community/Neighborhood Park
-  Trailhead/Staging Area
-  Equestrian Facility
-  Interpretive/Cultural Point
-  Riparian Area
-  Connections
-  Planned and Existing Multi-Use Trails
-  Planned and Existing Bike Lanes
-  Proposed Route 303 and Happy Valley

Sources: Maricopa Association of Governments (1995), Flood Control District of Maricopa County (2000), Arizona Land Resource Information System, and Jurisdictional Plans.



 Kimley-Horn and Associates, Inc.



WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

PROPOSED ILLUSTRATIVE RECREATION CORRIDOR PLAN

Figure 10

LEGEND

- Floodplain
- Multiple Use Maintenance Road
- Alternative Trail



- Desert Hills Dr
- Joy Ranch Rd
- Cloud Rd
- Carefree Hwy
- Dove Valley Rd
- Lone Mountain Rd
- Dixileta Dr
- Dynamite Blvd
- Jomax Rd
- Happy Valley Rd
- Pinnacle Peak Rd
- Deer Valley Rd
- Beardsley Rd
- Union Hills Dr
- Bell Rd
- Greenway Rd
- Thunderbird Rd
- Cactus Rd
- Peoria Ave
- Olive Ave
- Northern Ave
- Glendale Ave
- Bethany Home Rd
- Camelback Rd
- Indian School Rd
- Thomas Rd
- McDowell Rd
- I 10
- Van Buren St
- Buckeye Rd
- Lower Buckeye Rd
- Broadway Rd
- Southern Ave
- Baseline Rd

 Kimley-Horn and Associates, Inc.

 CORDON MEDRICK

 Flood Control District of Maricopa County

Tuthill Rd 195th Ave Perryville Rd Citrus Rd Cotton Ln Sarival Ave Estrella Pkwy Bullard Ave Litchfield Rd Dysart Rd El Mirage Rd 115th Ave 107th Ave 99th Ave 91st Ave 83rd Ave 75th Ave 67th Ave

1 0 1 2 3 Miles



WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

RECREATION CORRIDOR MASTER PLAN



CORNOYER-HEDRICK

September 30, 2001

1. INTRODUCTION

Multiple use flood control techniques and structures increase the value of flood control to the community by providing public investments that are used during non-flood time and flood events. These facilities and techniques can retain their primary function of protecting the health and safety of Maricopa County residents from the hazards of flooding without compromising the potential for multiple uses in and along the Agua Fria River. This report recommends open spaces, trails, and recreation facilities that could be integrated into the flood control techniques and facilities proposed in the Agua Fria Watercourse Master Plan. It also identifies open space, trail, and recreation opportunities that should be considered in the implementation of flood control techniques and the design and construction of flood control facilities along and within the Agua Fria River.

1.1 PLAN CONTEXT

Location:

The Agua Fria River is located in Western Maricopa County, Arizona. The Agua Fria River originates north of the Prescott Valley in Yavapai County and terminates at the Gila River in Maricopa County. North of Rock Springs, the River is an intermittent source of water fed by a series of tributaries until it's termination at Lake Pleasant. Lake Pleasant is formed by the New Waddell Dam. The New Waddell Dam is located north of State Route 74. South of the Dam, the River is dry, with the exception of small areas fed by runoff, seepage from the New Waddell Dam and/or Morgan City Wash, and other sources. The Agua Fria Watercourse Masterplan study area extends from the New Wadell Dam to the Gila River at approximately Litchfield Road (139th Avenue) and Southern Avenue.

Jurisdictional Boundaries

South of the New Waddell Dam the Agua Fria River connects Lake Pleasant to the Gila River. The Lake Pleasant to Gila River connection joins the cities of Avondale, Glendale, Peoria, Phoenix, and Surprise and the towns of El Mirage and Youngtown. The unincorporated communities of Sun City and Sun City West are also near the River. Figure 1 shows the jurisdictions adjacent to the River.

The Metropolitan Planning Areas (MPA) of the cities of Peoria and Avondale account for over 27% and 29% of the River. El Mirage, Glendale, Goodyear, and Phoenix MPAs each account

for approximately seven percent of the River. Maricopa County and the City of Surprise MPAs each account for 6% of the River. The Youngtown MPA include one percent of the River.

Conversely, the actual jurisdictional boundaries of each of the entities through which the River passes shows that Maricopa County has jurisdiction over approximately 60% of the Agua Fria River. Avondale has jurisdiction over 17% of the River. The rest of the entities through which the River passes each have jurisdiction over no more than seven percent of the River, with the majority having jurisdiction over less than two percent of the River. There is already substantial cooperation between the entities along the river with regards to flood control and other issues. The difference between the area within Metropolitan Planning Areas and under jurisdictional control indicates the importance of ongoing cooperation between entities in the implementation of the Watercourse Master Plan and the opportunities identified within this report. Table 1 compares the Metropolitan Planning Area boundaries to jurisdictional boundaries.

TABLE 1 – FLOODPLAIN AREA WITHIN JURISDICTION AND METROPOLITAN PLANNING AREA

Jurisdiction/Entity	Area Within MPA		Area Within Jurisdictional Boundary	
	Acres in 100 Year Floodplain	Percent of 100 Year Floodplain	Acres in 100 Year Floodplain	Percent of 100 Year Floodplain
Avondale	1,798	28.9%	1,057	17.0%
El Mirage	603	9.7%	381	6.1%
Glendale	454	7.3%	103	1.7%
Goodyear	437	7.0%	320	5.1%
Maricopa County	368	5.9%	3,697	59.3%
Peoria	1,674	26.9%	372	6.0%
Phoenix	469	7.5%	119	1.9%
Surprise	354	5.7%	80	1.3%
Youngtown	75	1.2%	102	1.6%

Land Ownership

The vast majority of land along and within the Agua Fria River is privately owned. The State Land Department is the second largest landowner, followed by the Federal Government (Bureau of Land Management and Bureau of Reclamation) and Maricopa County. Table 2 shows land ownership along the River.

TABLE 2 - LAND OWNERSHIP WITHIN FLOODPLAIN		
ENTITY	ACRES	PERCENT OF TOTAL ACRES
Bureau of Reclamation	50	.8%
Bureau of Land Management	492	7.9%
Maricopa County Parks and Recreation	194	3.1%
Private	4,470	71.7%
State Land Trust	1,026	16.5%
TOTAL	6,232	100%

Source: Maricopa Association of Governments, Arizona Land Resource Information System, Flood Control District of Maricopa County

WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

JURISDICTIONS

Figure 1

The Agua Fria Watercourse Master Plan is a collaborative partnership among regional agencies and West Valley Communities. The continued support of these project partners is vital to achieving the long-term vision of the Agua Fria Corridor and the West Valley Recreation Corridor:

Flood Control District of Maricopa County

Maricopa Association of Governments

City of Avondale

City of El Mirage

City of Glendale

City of Goodyear

City of Litchfield Park

City of Peoria

City of Phoenix

City of Surprise

Town of Youngtown

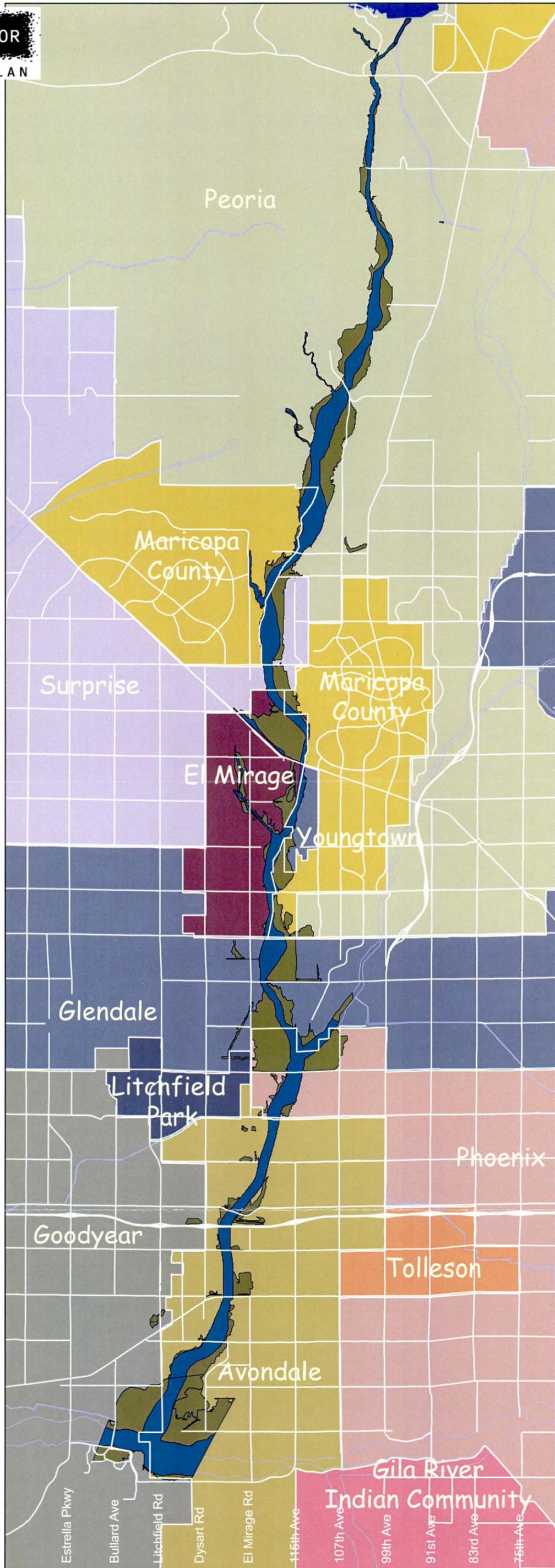
Communities of Sun City and Sun City West

Westmarc

Valley Forward

Arizona Trails Association

Sources: Arizona Land Resource Information System,
Maricopa Association of Governments,
Flood Control District of Maricopa County (2000)



- Desert Hills Dr
- Joy Ranch Rd
- Cloud Rd
- Camelback Hwy
- Dove Valley Rd
- Lone Mountain Rd
- Dinetta Dr
- Dynamite Blvd
- Jomix Rd
- Happy Valley Rd
- Pinnacle Peak Rd
- Deer Valley Rd
- Bearusley Rd
- Union Hills Dr
- Bell Rd
- Greenway Rd
- Thunderbird Rd
- Cactus Rd
- Peoria Ave
- Olive Ave
- Northern Ave
- Glendale Ave
- Bethany Home Rd
- Camelback Rd
- Indian School Rd
- Thomas Rd
- McDowell Rd
- I-10
- Van Buren St
- Buckeye Rd
- Lower Buckeye Rd
- Broadway Rd
- Southern Ave
- Baseline Rd

WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

LAND OWNERSHIP

Figure 2

This map shows the land ownership in the vicinity of the Agua Fria River.

-  Bureau Of Reclamation
-  Bureau of Land Management
-  County Land
-  Game & Fish
-  Gila River Indian Reservation
-  Luke Air Force Base
-  Parks & Recreation
-  Private
-  State Trust
-  Floodway and Floodplain

Sources: Arizona Land Resource Information System, Flood Control District of Maricopa County (2000), Maricopa Association of Governments



1 0 1 2 3 Miles



- Desert Hills Dr
- Joy Ranch Rd
- Cloud Rd
- Carefree Hwy
- Dove Valley Rd
- Lone Mountain Rd
- Dixileta Dr
- Dynamite Blvd
- Jomax Rd
- Happy Valley Rd
- Pinnacle Peak Rd
- Deer Valley Rd
- Beardsley Rd
- Union Hills Dr
- Bell Rd
- Greenway Rd
- Thunderbird Rd
- Cactus Rd
- Peoria Ave
- Olive Ave
- Northern Ave
- Glendale Ave
- Bethany Home Rd
- Camelback Rd
- Indian School Rd
- Thomas Rd
- McDowell Rd
- I-10
- Van Buren St
- Buckeye Rd
- Lower Buckeye Rd
- Broadway Rd
- Southern Ave
- Baseline Rd

Estrella Pkwy
 Bullard Ave
 Litchfield Rd
 Dysart Rd
 El Mirage Rd
 116th Ave
 107th Ave
 99th Ave
 91st Ave
 83rd Ave
 75th Ave

1.2 RIVER REACHES

This report corresponds to the River reaches and sub-reaches listed below and identified on Figure 3. These reaches and sub-reaches are consistent with other reports included in the Master Plan:

South Reach: Confluence of Gila River to confluence of New River

- Subreach 1: Confluence of Gila River to Broadway Road
- Subreach 2: Broadway Road to Maricopa County (MC) 85
- Subreach 3: Maricopa County 85 to I-10
- Subreach 4: I-10 Indian School Road
- Subreach 5: Indian School Road to confluence of New River

Center Reach: Confluence of New River to Bell Road

- Subreach 6: Confluence of New River to Olive Avenue
- Subreach 7: Olive Avenue to Cactus Road
- Subreach 8: Cactus Road to Bell Road

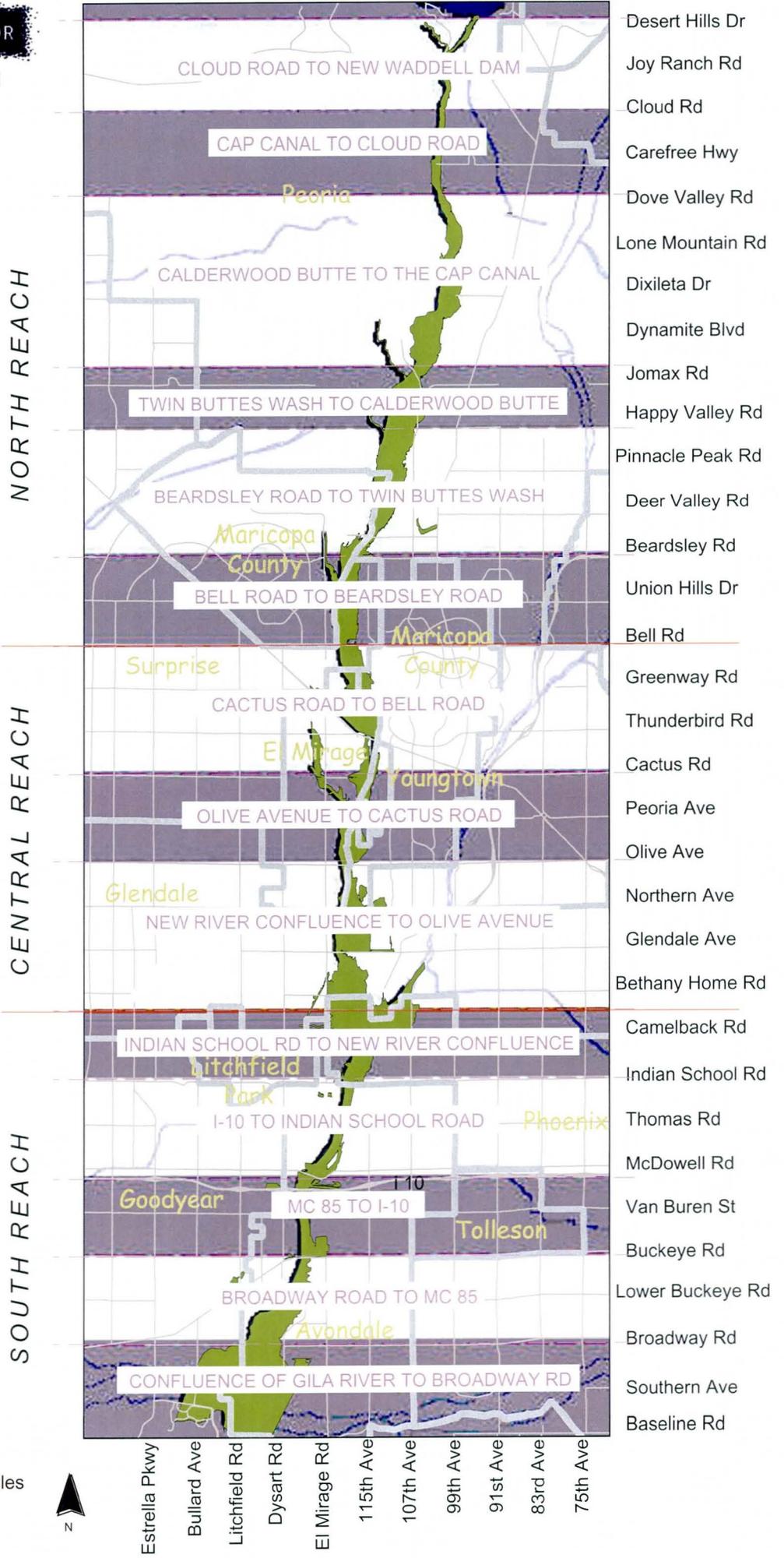
North Reach: Bell Road to the New Waddell Dam

- Subreach 9: Bell Road to Beardsley Road
- Subreach 10: Beardsley Road to Twin Buttes Wash
- Subreach 11: Twin Buttes Wash to Calderwood Butte
- Subreach 12: Calderwood Butte to the CAP Canal
- Subreach 13: Central Arizona Project to Cloud Road
- Subreach 14: Cloud Road to the New Waddell Dam

REACHES and SUB-REACHES

Figure 3

This map shows the locations of the reaches and subreaches discussed in the Recreation element of the report.



2. DEMOGRAPHICS

2.1 INTRODUCTION

In order to understand the potential current and future demand for trails, open spaces and other recreation amenities along the river, an analysis of current and future population and employment within one mile of the River was conducted.

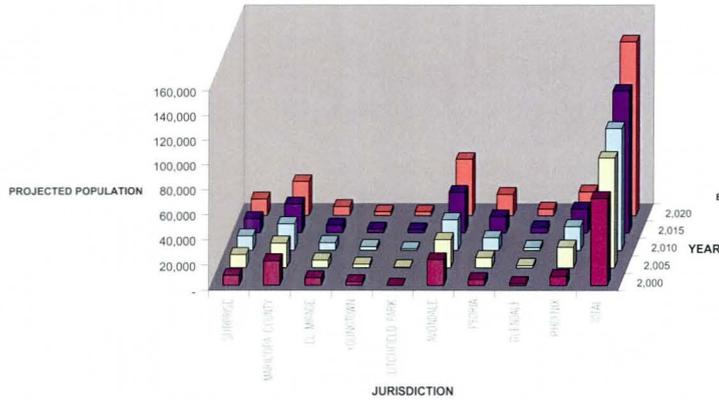
2.2 CURRENT AND PROJECTED POPULATION

Population within one mile of the Agua Fria River is projected to increase 104% between 2000 and 2020. The largest percentage increases are anticipated as areas in north Peoria and west Glendale develop. Other substantial population increases are projected for Phoenix, Glendale and Avondale. These increases demonstrate a growing constituency for recreation resources along the River. Table 3 summarizes projected population by jurisdiction within one mile of the River. Chart 1 compares population growth, by year, by jurisdiction for the area within one mile of the River.

JURISDICTION	2000	2005	2010	2015	2020	% Increase 2000-2020
SURPRISE	7,724	10,300	11,264	11,291	13,215	71%
MARICOPA COUNTY	19,333	19,538	20,985	22,885	27,187	41%
EL MIRAGE	5,837	5,905	5,918	6,069	7,210	24%
YOUNGTOWN	2,739	2,799	2,875	2,957	3,032	11%
LITCHFIELD PARK	0	605	1,284	2,529	2,913	na
AVONDALE	20,140	22,201	24,258	32,355	45,269	125%
PEORIA	4,594	8,097	10,015	12,972	17,101	272%
GLENDALE	1,513	1,809	2,354	4,233	5,333	253%
PHOENIX	7,063	16,467	19,017	19,109	19,110	171%
TOTAL	68,953	87,721	97,970	114,400	140,369	104%
Incremental % Increase		27%	12%	17%	23%	

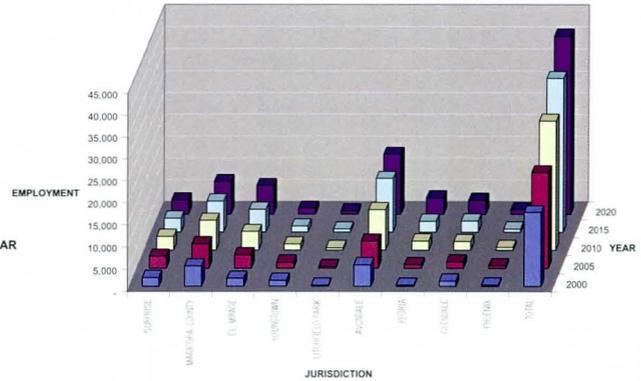
Source: Maricopa Association of Governments. 2000 Census tract level was not available at the time of this report.

**CHART 1
POPULATION BY YEAR BY JURISDICTION**



Source: Maricopa Association of Governments

**CHART 2
EMPLOYMENT BY YEAR BY JURISDICTION**



Source: Maricopa Association of Governments

In addition to increases in population, increases in retail, service and industrial employment are also projected within one mile of the River. These employment increases are shown on Table 4. As employment continues to increase near the River, the potential demand for access retail and other destinations will increase. The River could be used as a resource to provide these linkages as well as provide open space that could enhance adjacent commercial land uses. Additionally, integrating open space and non-motorized connections provided along the River into adjacent commercial uses could contribute to more thoroughly integrating them into the community. Chart 2 compares employment growth by year by jurisdiction for the Agua Fria River Watercourse Master Plan study area.

TABLE 4 PROJECTED EMPLOYMENT WITHIN ONE MILE OF THE AGUA FRIA RIVER						
JURISDICTION	2000	2005	2010	2015	2020	% Increase 2000-2020
SURPRISE	1,968	2,648	3,058	3,118	3,202	63%
MARICOPA COUNTY	4,549	5,436	6,677	7,018	7,368	62%
EL MIRAGE	1,828	2,988	4,162	5,126	6,450	253%
YOUNGTOWN	1,336	1,336	1,336	1,337	1,341	0%
LITCHFIELD PARK	236	371	524	702	716	203%
AVONDALE	4,830	6,068	9,101	12,186	13,668	183%
PEORIA	309	794	2,045	2,466	3,764	1120%
GLENDALE	1,203	1,437	1,913	2,548	3,180	164%
PHOENIX	335	568	642	723	1,029	207%
TOTAL	16,594	21,647	29,457	35,224	40,719	
% Incremental Increase		30%	36%	20%	16%	

Source: Maricopa Association of Governments

2.3 ADJACENT LAND USE INVENTORY

Introduction

The adjacent land use inventory provides information about the types of current activities within the River. The inventory is based on a review of aerial photographs taken in 2000 and land use GIS (Geographic Information System) data supplied by the Maricopa Association of Governments. Figures 4a, 4b, and 4c identify the current general land uses along the River.

Summary of Adjacent Land Uses Along and Within the Agua Fria River

Residential development is located or planned along a vast majority of the Agua Fria River. Some newer residential developments include open spaces and trails adjacent to the River and provide opportunities to connect to the Agua Fria River. Residential land uses will continue to provide opportunities to connect to the River and a population base which will benefit from open spaces, trails and other recreation facilities that could be developed along the Agua Fria as a part of multiple use flood control facilities and techniques. Other land uses, in particular existing and planned mining operations generally located between the confluence of the Agua Fria River with the New River and Jomax Road, have created large areas adjacent to and within the River that are generally incompatible with many types of multiple use recreation activities. As these uses retire, they provide opportunities for development or open space that may be more compatible with the multiple uses that could be incorporated into flood control facilities or techniques. Prior flood control improvements including levees and drop structures are mostly located between Buckeye and Camelback Roads. These single use facilities were designed to protect residential and commercial areas from flooding before the Agua Fria River was viewed as a resource for recreation, open spaces and trails. They provide some opportunities for trails and access to the river and exist where there is current demand for these elements.

Reach by Reach Analysis of Land Uses adjacent to and within the Agua Fria River

South Reach: Confluence of Gila River to confluence of New River

This reach of the River is the location of a broad range of land uses: agricultural, single family residential, recreation, and, to a small extent, industrial (mining). As one moves from the southern end of this reach to the north, the adjacent areas become increasingly more urban and then industrial. Substantial population exists along this reach to support multiple use recreation facilities. This reach is anchored by the relatively undisturbed Gila River confluence on the south and the leveed, highly industrial character of the New River confluence on the north.

Confluence of Gila River to Broadway

This area is within the jurisdiction of the Cities of Avondale and Goodyear, and unincorporated Maricopa County. The floodplain is very wide here, and agricultural land uses predominate within it. Substantial informal and unauthorized recreation occurs within this portion of the River, partly due to its natural appearance, width, and expansive views of the Estrella Mountains.

Broadway Road to MC 85

This area is within the City of Avondale and unincorporated Maricopa County. Industrial land uses are located on the eastern side of the River. Large and small lot rural residential uses line the River to the west. The City of Avondale also maintains offices on the northwest side of the River and Lower Buckeye Road, but these will be relocated to a City/County facility within the near future. There is a community retail center adjacent to and southeast of Buckeye Road that is approximately 15% developed.

MC 85 to I-10

Coldwater Park is located at the northwest corner of the intersection of Buckeye Road and the Agua Fria River. Undeveloped land zoned for a community retail center is located on the west side of the River north of Coldwater Park. The Santa Fe Southern Pacific Railroad also crosses the River within this reach. The east side of the River is undeveloped, but includes land zoned for a warehouse distribution center near I-10.

I-10 Indian School Road

A developed community retail center is located adjacent to I-10 on the west side of the Agua Fria River. North of I-10 on the east side of the River is planned public open space that will house a competition soccer facility connected to a regional park. North of the regional park are planned City of Avondale recharge areas and private residential uses. Continuing north along the River's edge a small lot residential housing development is located on the east bank and high and medium density residential uses exist on the west bank. Mining predominates on both sides of the River closer to Indian School Road.

Indian School Road to confluence of New River

This area is within the City of Phoenix north of Indian School Road. South of Indian School Road, this reach lies within the City of Avondale, and unincorporated Maricopa County. The Villa de Paz residential development is located on the east bank of the River between Indian School and Camelback Roads. A City of Phoenix park is located at the northeast intersection of the Agua Fria River and Camelback Road. Open space, provided as a buffer between the planned Camelback Ranch residential development and Glendale Airpark exists on the east side of the Agua Fria river to the New River. On the west side of the Agua Fria River there are several gravel mines south and north of Camelback Road. This reach marks the transition of land uses adjacent to the Agua Fria from primarily residential to primarily heavy industry.

Center Reach: Confluence of New River to Bell Road

This reach is intensely developed with divergent land uses. Mining operations and closed landfills are located next to residential subdivisions, intense commercial uses (such as storage) are mixed with residential and retail. While the overall character of the River within this reach is industrial and commercial, the existing residential uses seem stable and could provide a substantial population to support multiple purpose recreation uses within and adjacent to it. This reach is anchored on both ends by intense industrial and commercial uses.

Confluence of New River to Olive Avenue

Phoenix city boundaries extend from Indian School to Glendale Roads. The Glendale city boundary is from Glendale Road to Northern Avenue. Within this reach, the west side of the River is marginally developed with low density residential uses. The east side includes the Glendale Wastewater Treatment Plant, Glendale Airport, and Glendale Airport Industrial area and private mining operation.

Olive Avenue to Cactus Road

From south to north, this portion of the River is Maricopa County El Mirage (west side), and Youngtown (east side). Within El Mirage, from south to north, land uses include older residential development, a City owned wastewater treatment plant, and a private residential and golf course community. The Maricopa Lake Park and residential uses are located in Youngtown on east bank of the River.

Cactus Road to Bell Road

With the exception of the area surrounding Grand Avenue, this reach of the Agua Fria predominantly includes multi-family and single family residential uses. The east side of this reach is within the jurisdictions of Youngtown and Maricopa County. The west side of the River is within the jurisdiction of El Mirage. Moving from south to north within El Mirage are newly developed homes and the closed El Mirage Landfill immediately south of Grand Avenue. An apartment development located on the west side of the River on the south side of Bell Road includes private open space oriented to the River. On the east side of the River from south to north is residential and commercial uses. North of Grand Avenue mining predominates within the River and on its west side. Sun City is located on the east side of the River north of Grand Avenue.

North Reach: Bell Road to the New Waddell Dam

The northern portion of this reach of the River is within the planning areas for the Cities of Peoria and Surprise. At the present time, these planning areas include unincorporated Maricopa County. It is largely undeveloped and includes dramatic views, archaeology, and substantial vegetation (see landscape analysis for more information). This reach includes some unincorporated subdivisions, residential development and mining. Both Cities' future land use plans for this reach include medium to low density residential development on both sides of the River.

Bell Road to Beardsley Road

Although both sides of the River are within the City of Surprise planning area immediately north of Bell Road, they are currently within Maricopa County jurisdiction. Just north of Bell Road on the west bank of the River is Sun City West. Coyote Lakes residential golf course community is on the east bank. Moving north and west of Coyote Lakes is a gravel mine.

North of Union Hills Road new residential development predominates on the east bank. On the west bank a mining operation terminates at an unincorporated subdivision. North of this area, land uses adjacent to the River are largely undeveloped.

Beardsley Road to Twin Buttes Wash

Gravel mines predominate within this reach which is located in Maricopa County and in the City of Peoria.

Twin Buttes Wash to Calderwood Butte

This area is generally undeveloped. A highly disturbed rock outcropping is located on the east bank of the River at Jomax Road. The rock outcropping is used as a target practice area.

Calderwood Butte to the CAP Canal

This area is characterized by open space, mining and interim agricultural uses.

Central Arizona Project to Cloud Road

Three significant unnamed washes intersect the Agua Fria River here. Land adjacent to the River is primarily undeveloped. The Carefree Highway (extended) continues to the River as a dirt road. An explosive company has leased a portion of State land adjacent to the River within this reach and will be developing a portion of this site for manufacturing.

Cloud Road to the New Waddell Dam

The only major improvement in this area is the State Road 74 bridge. North of the New Waddell Dam is Lake Pleasant and the Maricopa County Lake Pleasant Park and Interpretive Center.

WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

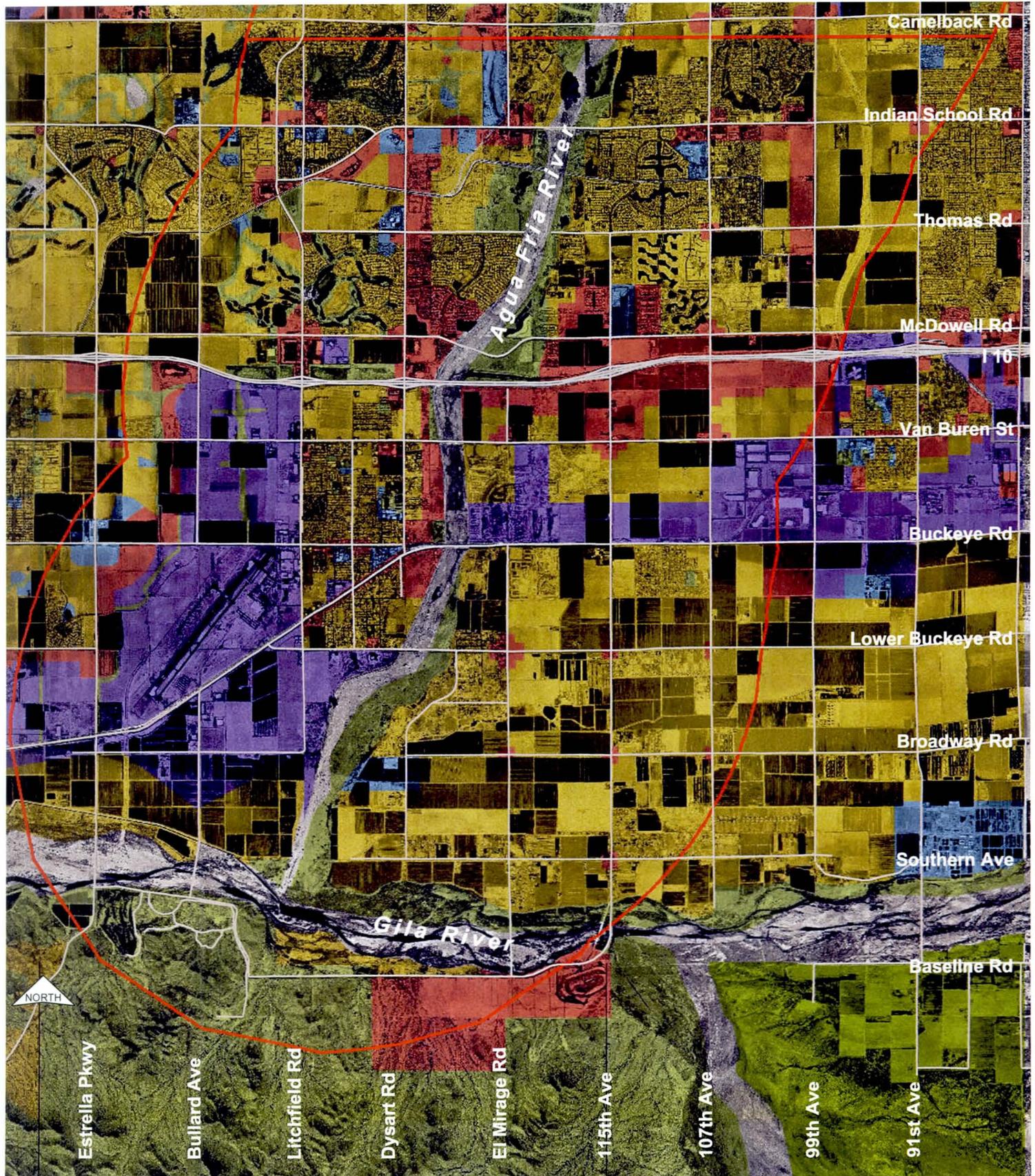
LAND USE Southern Reach

Figure 4a

Land Use Legend



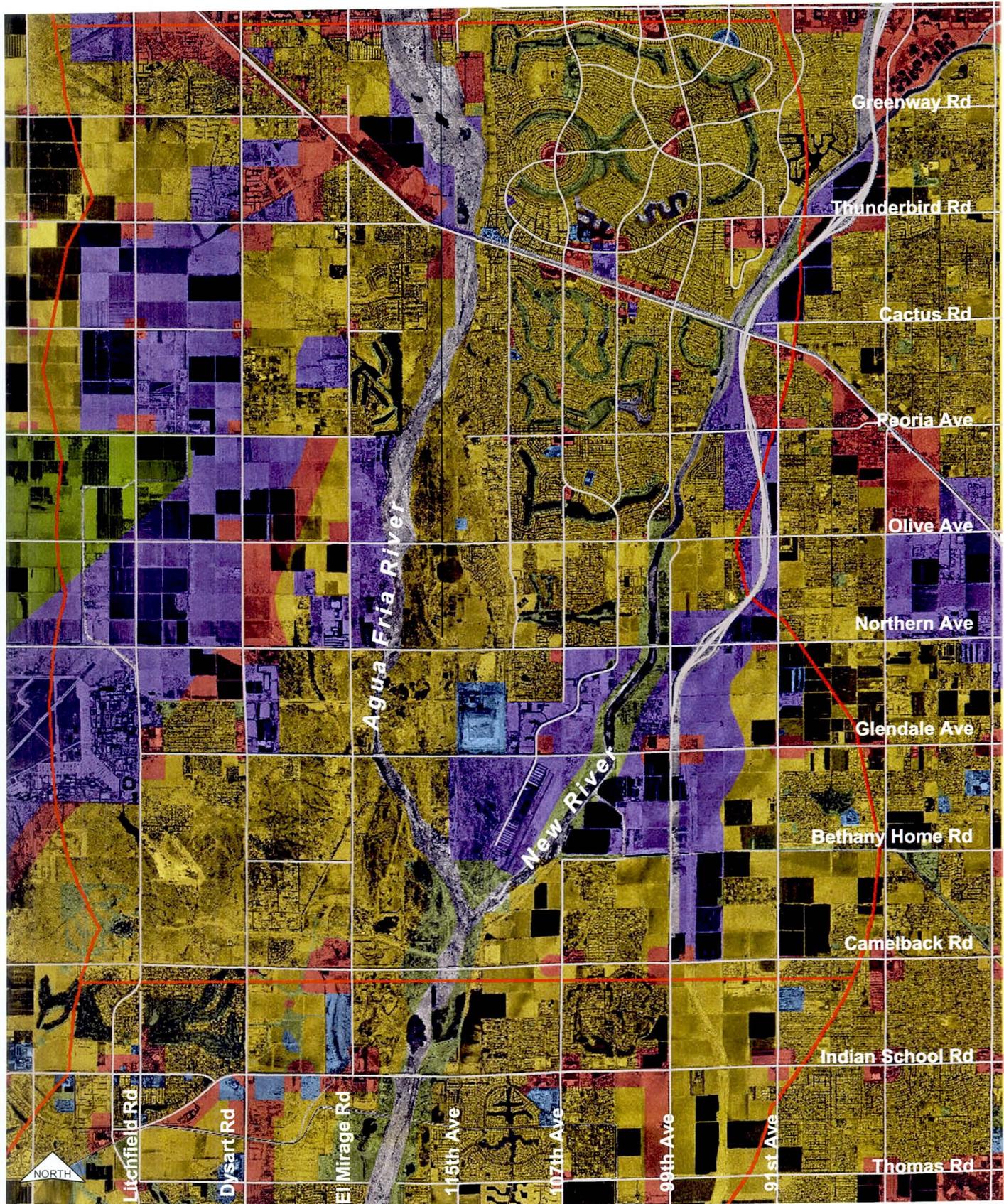
Source: Maricopa Association of Governments General Plan Land Use Map



Land Use Legend



Source: Maricopa Association of Governments General Plan Land Use Map



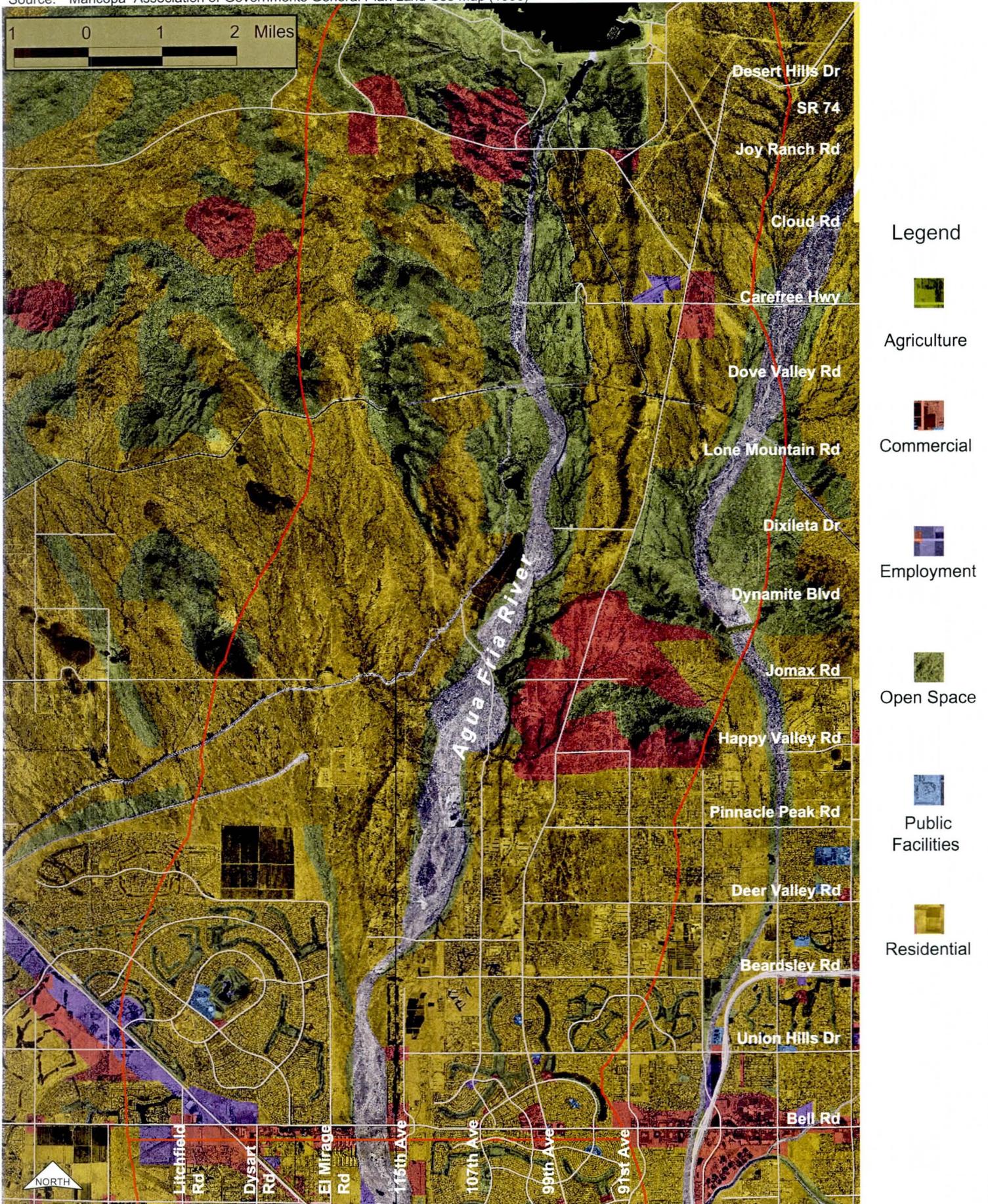
WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

Source: Maricopa Association of Governments General Plan Land Use Map (1995)

LAND USE Northern Reach

Figure 4c



3. INVENTORY OF PLANNED AND EXISTING RECREATION FEATURES, RELEVANT PLANS, AND INVENTORY OF OTHER INFLUENCES ON RECREATION AND RECREATION NEEDS ANALYSIS

3.1 PLANNED AND EXISTING RECREATION FEATURES

Introduction

This portion of the report documents existing and planned open space, trails and recreation features within the study area and other influences and identifies the potential need for trails, open space and recreation facilities along the Agua Fria River. Combined with the land use inventory the information in this section of the report provides the basis for identifying opportunities for multiple use flood control facilities and techniques. The resources included in this inventory include open space, natural areas, interpretive opportunities, active play areas, and trails. Table 5 lists the existing recreation features located within the Agua Fria River study area. Figure 5 identifies these resources. Table 6 summarizes these resources by Reach.

The literary search conducted to support this inventory consisted of data collection and research of several reports that have been prepared along the Agua Fria River. In addition, many facilities were field checked.

Inventory of planned and existing recreation features and relevant plans

Parks

There are a number of improved neighborhoods, community, and large urban district or regional parks within each of the municipalities located within one mile of the Agua Fria River. These parks serve the community and regional needs of populations along the River.

Parks that are currently being developed include Avondale's Regional Park II north at McDowell Road on the east bank of the Agua Fria and the City of Phoenix Camelback Ranch Park. Regional Park II will include sports fields, a soccer facility, picnic areas, gardens, restrooms and ramadas. The City of Phoenix Camelback Ranch Park is a community park and will include an equestrian trail and trailhead, sports fields, restrooms, picnic areas and a ramada. A planned community park is located at Deer Valley Road on the east side of the river.

Developed parks include Coldwater community park on the west bank of the Agua Fria on the north side of Buckeye Road in Avondale; the Maricopa Lake community park on the east bank of the Agua Fria River in Youngtown, and the Rancho Santa Fe private community park, located on the west bank of the River just north of McDowell Road.

Several existing and planned parks located outside the study area serve residents within one mile of the Agua Fria River. These include the City of Surprise planned and funded Cactus League facility and regional park that will be developed in conjunction with the City's new town core; the City of Peoria planned Sunshine Mountain community park south of Jomax Road; the Las Legas community Park in Avondale, and several unnamed community parks identified in the City of Peoria General Plan.

WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

PLANNED AND EXISTING RECREATION FEATURES

Figure 5

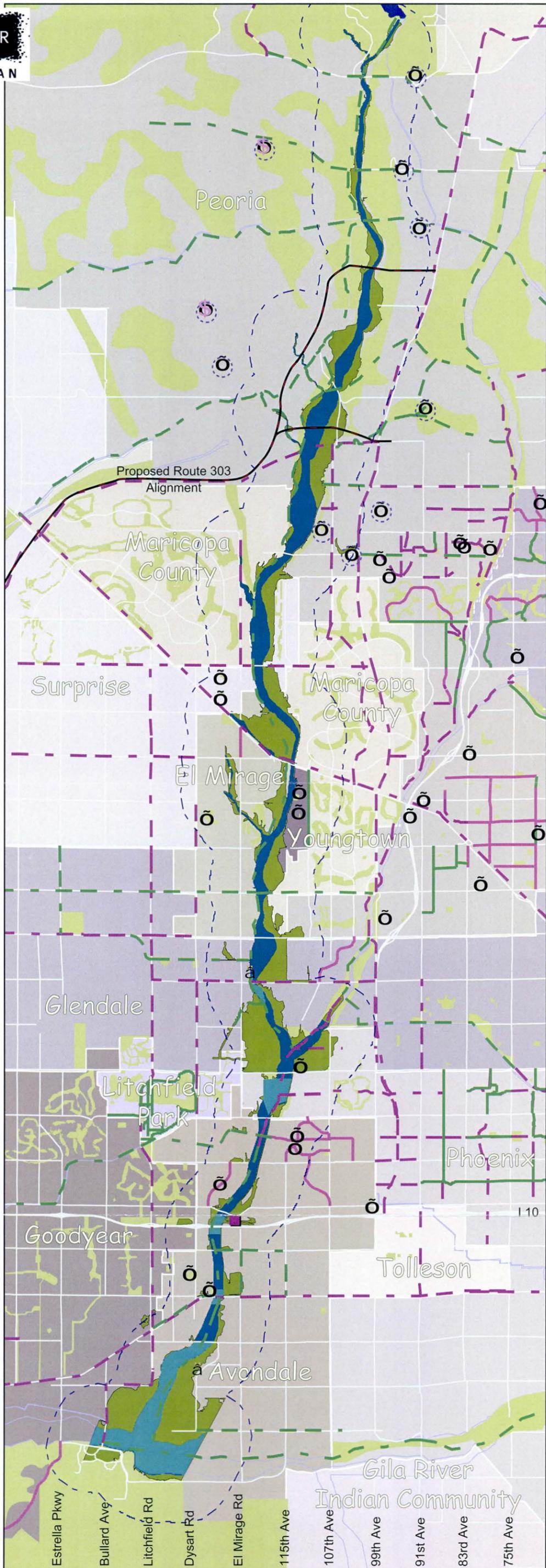
This map shows the existing and planned recreational facilities in the vicinity of the Agua Fria River.

The one mile buffer shows the area inventoried for the recreation element of this report.

Legend

-  One Mile Buffer of Agua Fria Floodway
-  Floodway Xeric
-  Floodway Hydric
-  Floodplain
-  Upland/Open Space
-  Regional Park
-  Community/Neighborhood Park Within One Mile Analysis Area
-  Community/Neighborhood Park Outside One Mile Analysis Area
-  Planned Park
-  Equestrian Facilities
-  Multi-Use Trails
-  Planned Multi-Use Trails
-  Bike Lanes
-  Planned Bike Lanes
-  Proposed Route 303 and Happy Valley

Sources: Maricopa Association of Governments (1995), Flood Control District of Maricopa County (2000), Arizona Land Resource Information System, and Jurisdictional Plans.



Open Space

A variety of public and private open space resources are located near or adjacent to the Agua Fria River. While these open spaces are dispersed all along the corridor, they are not continuous and with the exception of the River corridor and its tributary washes and the Central Arizona Project (CAP) and Beardsley Canals, are not connected by any existing direct on or off street trails or routes.

Substantial designated open space exists along the Agua Fria Corridor. In the southern areas of the River, the City of Avondale has designated the Agua Fria and Gila Rivers as open space and plans trails and parks adjacent to them that they believe will be an opportunity to promote ecotourism. While the City is currently revising its General Plan, it is likely that the commitment to conserving this area will remain. In the northern reach of the River, the City of Peoria has identified both sides of the Agua Fria River as an open space buffer. In addition, slopes over 14% and most major washes in Peoria have been designated open space. Finally all the jurisdictions along the river recognize the Agua Fria Floodway as open space.

In the more urban areas (between I-10 and Bell Road), several golf courses provide private open spaces. These include the Coyote Lakes golf course in the Town of Surprise and the Pueblo El Mirage golf course located adjacent to the Agua Fria River in El Mirage. Both Sun City and Sun City West provide golf courses for their residents. The Coldwater Springs golf course is also located within Avondale.

Trails

Several existing and planned trails intersect with or terminate at the River. These trails include bicycle lanes and routes and shared use paths. Figure 5 also illustrates existing and planned shared use paths, bicycle lanes and routes.

While the City of Avondale has no adopted trails plan, several trails, constructed through parts of private developments, cross or are adjacent to, the River. The City of Phoenix designates all arterial streets for bicycle lanes and bicycle lanes are planned for Camelback and Indian School Roads. The City of Glendale similarly designates arterial routes for bicycle lanes. The New River is also a planned shared use corridor. Maricopa County is currently working at designating a Countywide shared use trail that would include the Agua Fria River corridor. While east-west routes provide a variety of connections from the river to other destinations, the Sun Circle Trail is the only designated north south connection identified along the River.

Table 5
Agua Fria River Watercourse Master Plan Recreation Report
Existing Recreation Features

City/Recreation Feature	Amenities	Status	Location	River Reach
Avondale				
Coldwater Park	Baseball Fields, Ramadas, Picnic Facilities, Parking.	Developed.	West of Agua Fria & Buckeye Road	South Reach
Regional Park II	Japanese Garden, sports fields, soccer facilities, restrooms, picnic areas, and ramadas.	Under construction.	East of Agua Fria & McDowell Road	South Reach
City of Avondale Trails	Shared use trail	Partially completed,		South Reach
Estrella Mountain Park	Rodeo and equestrian facilities, parking, picnic areas, hiking trails, restrooms	Master plan to be updated in 2001-2002.	South of Gila River Confluence area	South Reach
Agua Fria Union High School	Sports fields	Complete.	West of Agua Fria at Dysart & Riley Drive	South Reach
Rancho Santa Fe Park	Tot lot, open grass play area, barbecue area, on street parking	Complete	North of McDowell Road	South Reach
El Mirage				
Existing Bike lanes	Street bicycle lane	Complete, additional lanes planned	El Mirage Road Between Thunderbird Road and Canal	Center Reach
Pueblo El Mirage golf course	Golf course, clubhouse, private residential lots.	Golf course complete, residential lots available.	West of Agua Fria River between Peoria & Cactus Roads.	Center Reach

Table 5
Agua Fria River Watercourse Master Plan
Existing Recreational Features

City/Recreation Feature	Amenities	Status	Location	River Reach
Dysart High School	Sports Fields	Complete.	Dysart Road	
Glendale				
Luke AFB Horse Stables	Stables	Complete.	West side of Agua Fria River, north of Glendale Road.	Center Reach
Phoenix				
Camelback Ranch Park and Equestrian Access	Sports fields, grass areas, ramadas, restrooms, parking, equestrian facilities.	Planned and in design.	East side of Agua Fria River just north of Camelback Road	Center Reach
Garden Lake Parks (2)	Tot lots, picnic areas.	Complete	East side of Agua Fria river at Thomas & 115 th Avenue.	Center Reach
Peoria				
Country Meadow Golf Course	Private golf course, clubhouse.	Complete	West of Agua Fria/ North of SR 60.	North Reach
Conceptual Neighborhood Park		Identified in City of Peoria General Plan	Joy Ranch Road and Agua Fria River	North Reach
Conceptual Neighborhood Park		Identified in City of Peoria General Plan	Cloud Road and Agua Fria River.	North Reach
Conceptual Neighborhood Park		Identified in City of Peoria General Plan	Between Joy Ranch & Cloud Roads at Agua Fria	North Reach

Table 5
Agua Fria River Watercourse Master Plan
Existing Recreational Features

City/Recreation Feature	Amenities	Status	Location	River Reach
			River.	
Conceptual Neighborhood Park		Identified in City of Peoria General Plan	Deer Valley Road & Agua Fria River.	North Reach
Conceptual Community Park		Identified in City of Peoria General Plan	Beardsley Road and Agua Fria River.	North Reach
Conceptual Neighborhood Park		Identified in City of Peoria General Plan	Union Hills Road and Agua Fria River.	North Reach
<i>Sun City East</i>				
Sun City Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria/ South of SR 60	Center Reach
North Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria/ South of SR 60	Center Reach
Willow Creek Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria/ North of SR 60	Center Reach
Lakes West Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria / North of SR 60	Center Reach
South Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria / North of SR 60	Center Reach
<i>Sun City West</i>				
Bicentennial Park	Ramadas, picnic areas.	Complete	East of Agua Fria & north of SR 60	Center Reach
Gaines Park	Ramadas, picnic areas.	Complete	East of Agua Fria & north of SR 60	Center Reach
Pebblebrook Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria & north of SR 60	Center Reach
Star Dust Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria & north of SR 60	Center Reach
Briarwood Golf Course	Golf Course and Clubhouse.	Complete.	East of Agua Fria & north of SR 60	Center Reach
<i>Youngtown</i>				

Table 5
Agua Fria River Watercourse Master Plan
Existing Recreational Features

City/Recreation Feature	Amenities	Status	Location	River Reach
Maricopa Lake Park	Lake, picnic areas.	Complete.	East side of Agua Fria River at Lakeshore Drive.	Center Reach
<i>Surprise</i>				
Coyote Lakes Golf Course	Golf Course	Complete.	East of Agua Fria & north of Bell Road	

3.2 RELEVANT PLANS

The Federal Government, The Central Arizona Project and the Maricopa Water District all have jurisdiction over land that they manage or own along the River corridor. It is important to understand and support the plans of these entities in the recommendations for open spaces, trails and recreation facilities that could be incorporated into multiple use flood control techniques and structures.

Introduction

General Plans, Master Plans, Area Drainage Master Plans and private development plans all impact the types of open spaces, trails and recreation facilities that could be provided as a part of flood control. While individual development plans are changing and often unknown until rezoning or other requests are filed with regulatory entities, the big picture and overall river management approaches desired by regulatory agencies are included in these plans and are identified below.

El Rio and Rio West Plans

The Agua Fria and Gila River confluence is at the division of the *El Rio and Rio West* planning areas. While no plans have been completed for either area, they are envisioned as natural open space and riparian corridors along the Gila River and Gila River floodplain. The Maricopa County Trail planning process has also included the Agua Fria Corridor in its planning area, identifying it as a vital link from the south part of the metropolitan area to Lake Pleasant.

The Maricopa County Trail Program Plan and the Sun Circle Hiking and Riding Trail Plan

The *Maricopa County Trail Program Plan* incorporates the *Sun Circle Hiking and Riding Trail Plan*. The Maricopa County Trail Program Plan envisions a connection between the Sun Circle Trail and the Central Arizona Project. The Sun Circle Trail is planned along the Agua Fria and New Rivers. As the Trail Program Plan is updated, an additional river trail is anticipated along the Hassayampa River.

City of Peoria Trails Master Plan

This plan recommends shared-use trails along the Agua Fria River and east-west trail crossings at the Central Arizona Project canal within the City of Peoria.

General Plan Elements for the cities of Peoria, Surprise, Avondale, Glendale, Phoenix and Maricopa County Comprehensive Plan

The General Development Plan elements for the cities of Peoria, Surprise, Avondale, Glendale, Phoenix were researched. Each of these plans include recommendations for shared use trails and open spaces along the Agua Fria River as well as designate the River as open space.

City of Peoria Parks, Recreation and Open Space Master Plan

The City of Peoria *Parks, Recreation and Open Space Master Plan* incorporates community and neighborhood parks, linear parks, open space and trails along the Agua Fria corridor and proposes a shared-use trail connection at the Agua Fria River and Central Arizona Project canal.

Glendale Parks and Recreation Master Plan

The Glendale Parks and Recreation Master Plan includes recreation features that are located outside of the one-mile study area used for this river corridor.

MAG Regional Off-Street System Plan, MAG Pedestrian Area Policies and Design Guidelines

These plans include shared use facilities and design guidelines for shared use, non-motorized multiple mode transportation corridors.

The Northwest Valley Area Transportation Study

The Northwest Valley Area Transportation Study by MAG and the *Lake Pleasant Parkway Corridor Specific Area Plan* provides information on the recently planned areas for transportation and land uses in the northern portion of the River corridor.

Historical Cultural Resources along the Agua Fria River between the Gila River and Waddell Dam.

This document includes an inventory of interpretive sites along the River.

The Agua Fria: A Working River for the West Valley Themes and Historic Sites.

This report identifies interpretive sites and historic themes that bring meaning and identity to the River.

3.3 INFLUENCES ON RECREATION

Influences on recreation along the River include planned recharge facilities, mining, cultural resources and interpretive areas. These influences are discussed in detail in other reports developed as a part of this study and are summarized below.

Introduction

The presence of planned groundwater recharge activities along the River could begin to return it to a more vegetated state and may support the development of new riparian and wildlife habitats. Although current mining activities limit recreational opportunities in certain areas, there may be the potential to reclaim these pits as a recreation amenity once their resources are spent. The rich culture and history of the West Valley, including the Agua Fria River, also influences the future use of the river through development of interpretative areas in significant historical and pre-historical areas.

Existing and Planned Recharge Facilities

Several recharge facilities are planned along the Agua Fria. Within Avondale these include the planned Northern Arizona University and Salt River Project (NAUSRP) recharge facility south of Camelback Road and the planned Salt River Project recharge facility north of Avondale Regional Park II. While the planned SRP project north of Regional Park II is adjacent to the River and behind a levee, it could be developed as a complementary wetland to the I-10 revegetation project and provide an educational site along the potential levee trail.

The Sub Regional Operating Group (SROG) is evaluating in-channel linear recharge from Bell Road south to Indian School Road. This project would discharge water into the Agua Fria River and allow it to percolate into the water table.

Avondale operates an existing recharge project behind the levee north of McDowell Road. The City plans to expand their recharge efforts in this general location in two additional phases. The final phase will use treated sewage effluent and will be located between McDowell Road and the I-10 outfall.

The Central Arizona Project (CAP) has initiated a recharge project that combines streambed recharge and infiltration basins. This project is located at the CAP canal at the Agua Fria and extends to approximately Jomax Road.

Mining Activities

Sand and gravel mining occurs within the floodplain on private lands or on lands leased from the State of Arizona. Some of the mines span the entire width of the River creating impediments to continuous trail access north to south. Mining roads can provide access into the River and are used, perhaps illegally, by recreational users. Additionally, the sand and gravel industry has experienced lawsuits and other actions due to trespassers being injured or killed by driving ATV's

into an open pit or through other actions. In the interim, avoidance of these hazards is considered prudent. However, once mining is complete it would be beneficial to attempt to bring recreational users back into the river providing that issues of safety are properly addressed.

Pre-Historic Cultural Resources

Over 122 separate studies have been conducted in the Agua Fria River corridor. These studies have found 122 pre-historic, mostly Hohokam sites. The earliest sites are in the southern part of the river and later sites are found as one moves north. Some sites from 950 to 1000 AD are visible and generally intact. The densest location of sites is at and near Calderwood Butte. Overall the sites represent a variety of habitations and let people know, at many places, that the Agua Fria was a river connecting to points beyond Lake Pleasant and the Gila River.

The sites include four general categories of resource:

- Habitation – includes permanent or temporary living areas, rock houses, field houses, and villages. Within this category there are nine villages, four compounds, and four hamlets.
- Resource Exploitation – includes fields and artifacts.
- Rock Art – includes two sites. One site is located at Calderwood Butte (Jomax Road east side of the river). The second site is south of the Gila River outside of the Agua Fria floodplain. One site may have religious association.
- Prehistoric Trails – one identified west of Calderwood Butte.

Historic Cultural Resources

These sites date from between 1600 AD to the present. They tell the cultural history of the River as a place where the groups that settled along it used it for their own purposes and best advantage. An important component of this history are the canals. The canals and the water they provide are a physical manifestation of the historic role of agriculture in the west valley and opened the door for another stage of the Valley's development typified by John F. Long and his vision of production housing and new communities. Some of the intact and visible canals and other physical manifestations of the role of agriculture include the Beardsley, Marionette and Buckeye Canals, construction sites related to the Waddell Dam, historic roads and development including ranching, agriculture, and senior communities.

Ecological Resources

Ecological resources are most significant at the northern end of the corridor, near and at George's Pond. Opportunities to enhance ecological resources exist at the confluence of the Gila River. Perhaps the most significant opportunity for new enhancements is near the I-10 outfall channel. Currently, the US Army Corps of Engineers, the City of Avondale, and the Flood Control District are jointly sponsoring a Federally funded Restoration project at this outlet. This project provides an opportunity to enhance the vegetative composition improving recreational experiences. There have also been some discussions about the idea of mitigation banking in and around the Agua Fria River. While there are inherent challenges associated with mitigation banking, if successful, this technique may further enhance recreational experiences.

Flooding and Erosion

The Flood Control District of Maricopa County initiated the Agua Fria Watercourse Master Plan to examine flood control along the Agua Fria River and identify opportunities to make investments in flood control more cost effective through lowering maintenance and incorporating multiple-use facilities that benefit the community. Although one of the primary goals of the Watercourse Master Plan is to protect the residents residing along the Agua Fria from the hazards of flooding, public non-vehicular access to flood control levees and maintenance roads will increase the value of these investments by making them useful during non-flood times. Multiple use flood control can also enhance the role of the river by providing recreation experiences and interpretive uses. Erosion in various reaches of the river also is a concern of this study.

3.4 RECREATION NEEDS ASSESSMENT

The recreation needs assessment includes a comprehensive inventory of existing and planned open spaces, parks and trails along the Agua Fria River. Park types and service area radius recommended by the National Recreation and Parks Association (NRPA) are then summarized as a prelude to establishing criteria for a recreation needs analysis for the study area. The nationally recognized NRPA standard is used for this analysis because park service area standards differ between jurisdictions along the River. Using the NRPA standards, the extent to which planned and existing parks meet the demand for these facilities within the service area is determined.

Introduction

Neighborhood parks range in size from 5 to 10 acres. They generally serve an area of one-half mile radius not constrained by physical barriers. Neighborhood parks include children's playgrounds, picnic areas, volleyball and basketball courts, open play turf area, parking, and restroom facilities.

Community parks range from 30 to 50 acres and generally have a service area radius of three miles. Community parks serve organized sports and leagues for lighted basketball, volleyball, soccer, softball, playgrounds, picnic areas with ramadas, pools, lighted tennis courts, parking and restroom facilities.

Urban and regional parks are typically 50 to 75 acres and serve an area within a 20-minute drive time. Urban and regional parks include playgrounds and picnic areas, lighted volleyball and basketball courts, lighted racquetball and tennis courts, lighted softball and soccer fields, lighted tennis courts, picnic areas with ramadas, parking and restroom facilities.

Analysis

To determine the extent to which existing and planned facilities meet current and future need, an analysis of existing and planned park facilities based on population and service area was conducted. The analysis (Figure 6) shows that the existing populations along the river are generally well served by either community or neighborhood parks, and that park development has generally followed residential development. Some gaps in park service exist on the east side of the river between Olive Avenue and Thunderbird Road as well as north of Bell Road on the east side of the River. However, these areas are either not generally residential in character (as with the Olive to Thunderbird Areas), or are served by open space and golf courses (as with the Sun City West area north of Bell Road) appropriate to surrounding demographic patterns. Finally the analysis demonstrates no recreation facility services are currently provided for the largely undeveloped area in Peoria north of Pinnacle Peak Road. There are identified, planned facilities for this area included in the City of Peoria General Plan. In addition, the City of Peoria has identified the area on both sides of the river as open space (discussed below) and generally requires developed parks as a part of private development. Consequently, as this area develops, its' recreation service needs will most likely be met.

WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

RECREATIONAL NEEDS ANALYSIS

Figure 6

This map shows the existing and planned parks in the vicinity of the Agua Fria River.

The one mile radius buffer overlay illustrates an average service area coverage for these facilities.

Legend

-  One Mile Buffer of Agua Fria Floodway
-  Floodplain
-  Recreational Open Space
-  Community/Neighborhood Park
-  One Mile Buffer of Park (Planned and existing)
-  Multi-Use Trails
-  Planned Multi-Use Trails
-  Bike Lanes
-  Planned Bike Lanes
-  Proposed Route 303 and Happy Valley

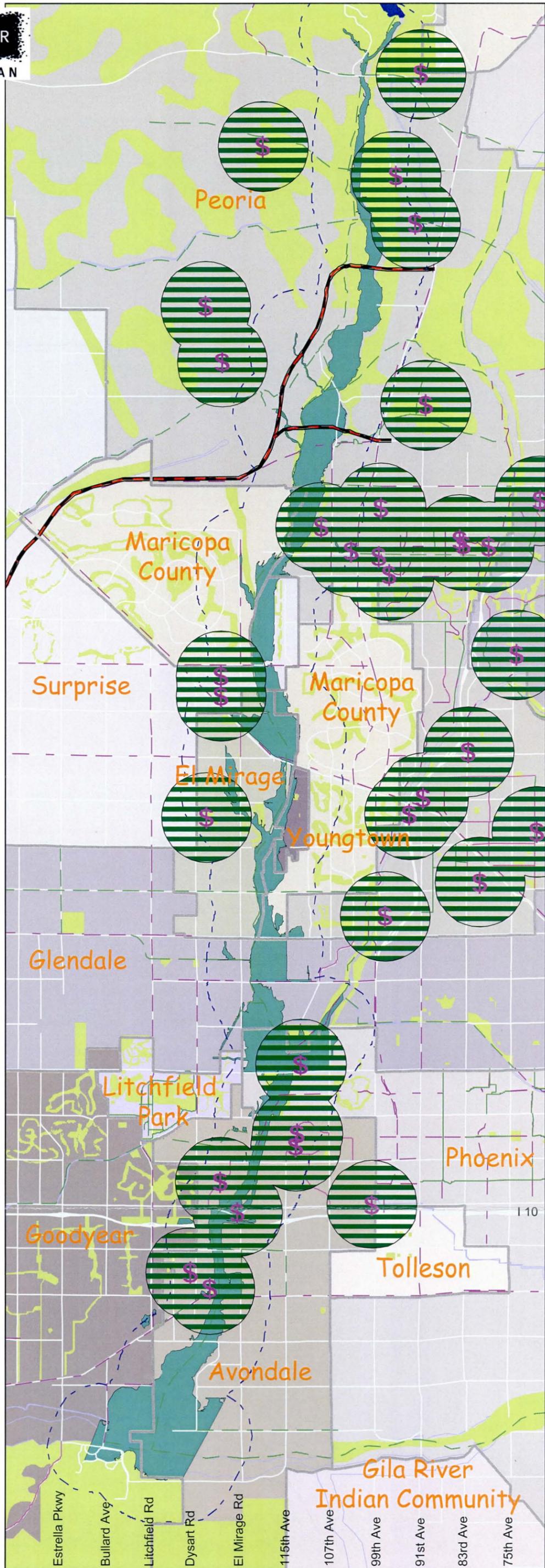
Sources: Maricopa Association of Governments (1995),
Flood Control District of Maricopa County (2000),
Arizona Land Resource Information System

1 0 1 2 3 Miles



 Kimley-Horn
and Associates, Inc.

 CORNVOYER-NEBRICK



4. OPPORTUNITIES, PLANNING ISSUES AND PLANNING MANAGEMENT AREAS

A variety of opportunities, as shown on Figure 7, to provide open spaces, interpretive areas, shared use facilities and developed recreation facilities exist within and along the Agua Fria River. In this section, these opportunities are first summarized by type of opportunity and then by river Reach. Table 6 summarizes these opportunities by jurisdiction.

4.1 SUMMARY OF OPEN SPACE, TRAILS AND RECREATION FACILITIES OPPORTUNITIES

Maintenance Road and In-River Trail

To accomplish the goal of linking recreation resources, interpretive, cultural, and natural areas along the watercourse, a river-based all weather access maintenance road that permits non-motorized recreational use is proposed to connect the Gila River with Lake Pleasant. Along the levee Reach of the River, the maintenance road trail could be continued on the sides of the levee along both sides of the River. This trail could be directly accessible to residents along the River and offer amenities that would not be possible within the floodplain, such as lighting, benches, and rest areas.

Opportunities also exist within the River to place a continuous stabilized surface trail from the Avondale mitigation site to Camelback Road. Mining makes passage within the River difficult north of Camelback Road to approximately Bell Road. The in-river trail could continue along the New River to Olive Avenue or agreements with mining operators could provide access within the Agua Fria River that bypass their operations. North of Olive Avenue, the in-river trail could be continued State Route 74, (bypassing the Vulcan mine on street and the Walker mine on the west side of the River), where on-street access would be necessary to enter Lake Pleasant Park.

Trailheads

Several trailheads are proposed to connect to existing trails that intersect with the River and provide access to it. Depending on available land and adjacent land use, opportunities for two general types of trailheads exist. A major trailhead would include horse trailer parking, other equestrian facilities, restrooms, shade areas, and water. These areas would be located with parks whenever possible. A minor trailhead could be developed closer to residential areas and provide parking areas, directional signs and limited amenities.

Natural Areas and Passive Open Spaces

Opportunities for open space, interpretive, and passive recreation facilities exist at the northern and southern ends of the river in Avondale at the confluence with the Gila River and in Peoria south of and around State Route 74. At the junction of I-10 and the River an opportunity exists to integrate the proposed mitigation site into an open space interpretive area with in-channel trails. Other natural open spaces are proposed south of Rose Garden Lane at the McMicken Dam Outfall Channel and the adjacent cresote flat and between Patton Road and Dixletta Drive.

Parks

Developed Parks

Parks could be developed to serve residential areas between Union Hills and Joy Ranch roads. These include parks in El Mirage at the Peoria Road alignment, and a second at the McMicken Dam Outfall Channel.

Interpretive Areas

Tremendous opportunity for interpretation exists along the River. These areas could reinforce the history of the River as a resource for mining, agriculture, and water. Interpretive areas are could also be associated with recharge facilities sited within the River floodplain.

Archaeological Areas

Several archaeological areas from the Ho Ho Kam period were identified. Several resources including Calderwood Butte, Casa de Piedras, north of Calderwood Butte and pit houses throughout the northern reach, exist for interpretive parks and signing.

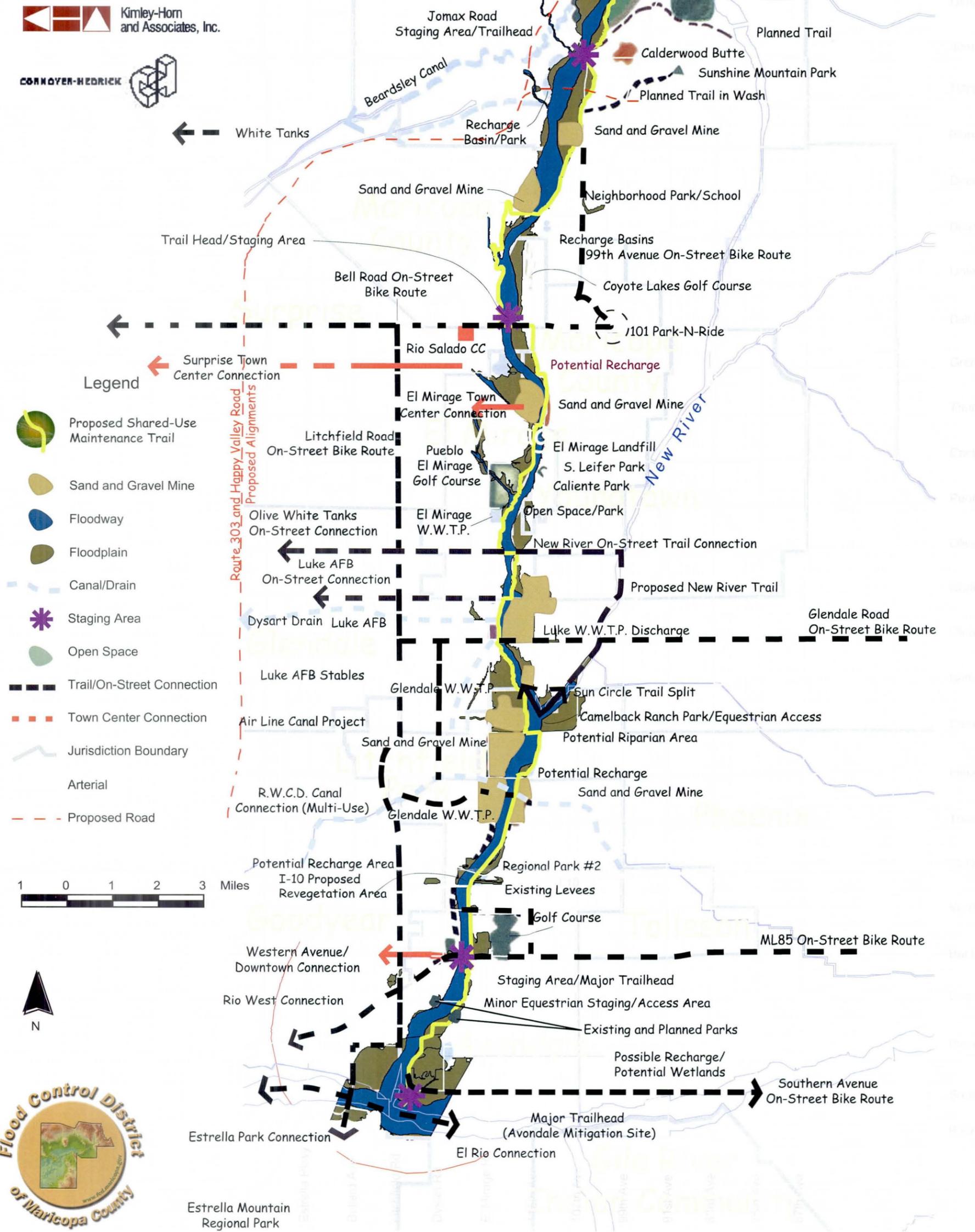
WEST VALLEY RECREATION CORRIDOR

AGUA FRIA WATERCOURSE MASTER PLAN

PLANNING INFLUENCES

Figure 7

This map shows the factors that may influence recreation uses along the Agua Fria River.



4.2 OPEN SPACE, TRAILS AND RECREATION FACILITIES OPPORTUNITIES BY REACH AND SUB-REACH

South Reach: Confluence of Gila River to confluence of New River

Overview

Within the City of Avondale, opportunities exist for a range of open space, interpretive, and passive recreation facilities. The confluence of the Gila River with the Agua Fria, wide floodplains and predominantly agricultural uses have protected the relatively undeveloped natural area in this vicinity. There is a substantial opportunity to conserve this area as a natural open space with passive trails.

The Avondale mitigation site, maintained by the Flood Control District of Maricopa County, is located within the floodplain of the Gila River on the east side of the Agua Fria. This site offers opportunities to provide interpretation and trailhead access to the Agua Fria and Gila Rivers.

The north side of the intersection of lower Buckeye Road and the east side of the Agua Fria River includes a public right of way that could be developed as an equestrian trailhead. This location could be directly linked to the proposed in-river trail.

Within the levee area of this reach, a secondary, all-weather trail could be provided along both sides of the levees. The West Valley Recreation Corridor Multi-Modal Transportation Plan has already proposed several trails and activity centers for this area. The City of Avondale enhancement fund application for an underpass to connect Coldwater Park to Regional Park II also provides an all-weather river connection to these resources.

Detail Reach Opportunities and Constraints

Confluence of Gila River to Broadway

This portion of the River offers tremendous opportunities for developed recreation, trailheads, and natural open space areas. Opportunities in this section include restoring the Avondale mitigation site at the confluence of the Gila and Agua Fria Rivers and using this site as a trailhead and interpretive area and park for access to the Agua Fria and Gila Rivers. Within this reach the riparian area within the River could be restored and conserved as an interpretive habitat area.



Potential open space area at the confluence of the Gila River.

Broadway Road to MC 85

The City of Avondale Water Treatment Plant is located between Broadway and Southern Avenues. The City owns the land to the east and a riparian area could be developed in conjunction with this facility. An equestrian staging area could be constructed on the east side of the River north side of lower Buckeye Road. This facility would serve the rural residential areas that are located on the east side of the River. The in-river trail could continue north through this reach. The levees extend into this area and trails could be developed adjacent to them. Finally, the opportunity exists for a mixed-use river-oriented center to be developed adjacent to the river at Lower Buckeye Road when the City of Avondale offices are combined into one facility at a new location.



Natural Areas within the floodway, such as this one south of lower Buckeye Road, provide ample opportunities for passive recreation.



An opportunity to create an interpretive area associated with the railroad crossing north of Buckeye Road exists within this reach.

MC 85 to I-10

Trails adjacent to the levees could continue through this reach. Underused and undeveloped land along the levees provide opportunities to offer rest areas, ramadas, and interpretive signs at locations along this potential route. Connections to these trails from public and private parks within this reach are also possible. The City, through a public/private partnership could develop a river-oriented mixed-use center between Dysart Road and the Agua Fria that incorporates Coldwater Park. The in-river trail could continue through this reach. Interpretive areas, associated with Coldwater Station and the railroad crossing north of Buckeye Road are also opportunities within this reach.

I-10 to Indian School Road

This reach includes an existing mining operation at Indian School Road that has an on-file restoration plan to convert it to a park. Links between existing private parks and the levee trails are proposed here. The City of Avondale received funding for an underpass at McDowell Road to connect residents on the west side of the river to Regional Park II. An interpretive habitat restoration area north of I-10 could be developed to take advantage of stormwater runoff from the I-10 drainage facility. Opportunities to create additional riparian areas associated with planned recharge are also planned. It is possible to continue the proposed in-river through this reach.



Water from the stormwater facility associated with I-10 provides opportunity to create a riparian habitat north of I-10.



Opportunities exist to allow non-motorized recreation use on or adjacent to the levees.

Indian School Road to Confluence of New River

The City of Phoenix Camelback Ranch Park includes equestrian access to the Agua Fria and New Rivers at Camelback Road. The levees end here, as does the opportunity to provide trails adjacent to them. However, the in-river trail could continue along the New River and avoid existing mining operations in the Agua Fria River.

Central Reach: Confluence of New River to Bell Road

Overview

The urban and industrial nature of this reach suggests that, in the near term, the proposed New River trail corridor could provide open space, trail, and other recreation opportunities for residents living along the Agua Fria River. In the long term, opportunities exist to re-use mining operations for open spaces and parks, as well as to work with existing landowners to identify right of ways for trails and open spaces.

Detail Reach Opportunities and Constraints

Confluence of New River to Olive Avenue

Mining predominates within this reach. The opportunity exists to work with these existing operations to provide access through this portion of the River. In the interim, there is the opportunity to provide access along the proposed New River Trail to Olive Avenue and re-connect to the Agua Fria River via the planned Olive Avenue on-street bicycle route. Because it is on-street, the Olive Avenue route would provide non-equestrian access only. Another opportunity to bypass existing mining operations could be to develop a shared used trail along the Airline Canal as a bypass. Within this reach there is an opportunity to provide equestrian access and facilities to the River through the existing Luke Air Force Base stables. A shared use and equestrian trail connection to Luke Air Force Base could be provided along the Dysart Drain.



Mining Operations limit opportunities for recreational use in this reach of the River..



This private park, located in Avondale, provides an example of open spaces that could be located in association with vegetation at Peoria Road in El Mirage.

Olive Avenue to Cactus Road

This reach is within the jurisdictions of El Mirage and Youngtown. Vegetation associated with the El Mirage Wastewater Treatment Plan provides an opportunity to combine a park and interpretive facility in the wide areas of the Agua Fria floodplain. This park would also complement the existing golf course and residential community adjacent to the river and serve new residential development occurring in El Mirage along the River just south of Grand Avenue.



This picture, taken north of Greenway Road, is an example of how on street trails and sidewalks provide an opportunity to provide a continuous trail connection between Cactus and Bell Roads.

Cactus Road to Bell Road

Substantial mining activities exist within this Reach and an opportunity exists to use on street sidewalks and trails to create a connection outside the River to Bell Road.

Bell Road to Beardsley Road

This reach offers an opportunity to create a park with open spaces and active play areas within the McMicken Dam outfall channel. The on street paved surface shared use trail could continue here by crossing over the Bell Road bridge from the east and entering the River on the west side, adjacent to the west edge of the floodplain. The maintenance road could provide shared use, paved trail access by continuing above the River along the west bank. The in-river trail could continue north of Bell road along the west edge of the floodplain. There is an opportunity to provide a trailhead at the northwest intersection of Bell Road and the Agua Fria River. The in-river and on bank trails could merge as they continue north through the proposed McMicken Dam Park.



Lush washes that traverse the mouth of the McMicken Dam Outfall Channel offer substantial opportunities for recreation.

North Reach: Beardsley Road to the New Waddell Dam

Overview

This Reach represents the most undeveloped part of the River. Opportunities for parks, open spaces, habitat conservation, and cultural and archaeological interpretive areas exist throughout this reach, although some (such as Casa de Piedras, Calderwood Butte and agriculture) may be eliminated due to private development and mining. Because the River is mostly undeveloped (especially in the northern portion of this reach) there is an opportunity to provide an in-river trail and an on-bank maintenance road which provides paved, shared use, trail access along the riverbank.

Detail Reach Opportunities and Constraints

Beardsley Road to Twin Buttes Wash

North of Beardsley Road an opportunity exists for a maintenance road which provides paved, shared use, trail access to continue along an existing, informal road through a creosote flat on the western bank of the river bordering the McMicken Dam Outfall Channel. The trail could cross the river at Rose Garden Lane and split into two trails (in- river and paved, shared use maintenance road) to the north.



A creosote flat north of the McMicken Dam Outfall Channel provides views of the river and offers an opportunity for a trail.



The east side of the river in this area provides an opportunity for a trail in existing right of way or closer to the River edge.

Twin Buttes Wash to Calderwood Butte

This largely undeveloped portion of the River provides opportunities to connect residential development and open spaces planned in north Peoria to the Agua Fria River via the Twin Buttes Wash. This wash is proposed as a trail in the Flood Control District of Maricopa County underway North Peoria Area Drainage Master Plan. The planned Sunshine Mountain trail could also provide access from the planned City of Peoria Sunshine Mountain park to the River. The in-river trail could continue on the east side of the River through this reach. The trail on the bank could continue along the Marionette Canal to Happy Valley Road. An opportunity for a trailhead exists on the west side of the River just west of its intersection with Happy Valley Road.

Calderwood Butte to the CAP Canal

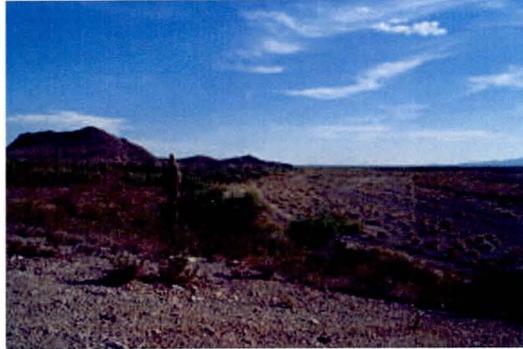
Substantial opportunities exist to create an interpretive site at Calderwood Butte. Additional interpretive opportunities to provide pre-historic interpretation on the east side of the River at Casa de Piedras, located north of Calderwood Butte. The in-river and paved, shared use maintenance roads could continue within this reach. The bank trail could follow the uppermost terrace on the east side of the River while the in-river trail could continue north from Calderwood Butte through a mesquite bosque to the Central Arizona Project Canal. Agricultural areas on the west side of the River are currently being converted to mining sites. There is an opportunity to create a trail westward connection along the Beardsley Canal that could provide access to the White Tank Regional Park. In addition, the private Cowtown Development could be redeveloped as a recreation area and park.



The Beardsley Canal offers an opportunity to provide interpretation about the role of water in the development of the West Valley and a connection to the White Tank Mountains.

Central Arizona Project to Cloud Road

Opportunities to create trail connections to the City of Peoria planned open space areas and planned new development exists along the three major washes that intersect with the Agua Fria River. These washes are also identified as trail corridors in the Flood Control District of Maricopa County North Peoria Area Drainage Master Plan. Because the River is relatively undisturbed within this area, the opportunity exists to create an open space corridor accessed by an in-river trail through this reach. The bank trail could continue on the east terrace above the River. The opportunity to provide a trailhead in conjunction with the proposed City of Peoria Regional Park exists at Lake Pleasant Road south, of the Carefree Highway.



The paved trail could continue on the eastern upper terrace.



Opportunities for interpretation regarding stormwater management exist at the State Route 74 Bridge.

Cloud Road to the New Waddell Dam

The only major improvement in this area is the State Road 74 bridge. The water markings on the bridge provide an opportunity for interpretation about flooding and flood management. North of the New Waddell Dam is Lake Pleasant and Maricopa County Lake Pleasant Park and Interpretive Center. An opportunity exists to create an open space habitat and interpretive immediately south and north of the bridge. Additional interpretation associated with George's Pond could be provided at the Lake Pleasant Interpretive Center. Opportunities to connect to the planned Maricopa County on-street bicycle route along State Route 74 and the Lake Pleasant Park and Interpretive Center also present themselves within this reach.

Table 6

**Agua Fria River Watercourse Master Plan
Recreation and Open Space Opportunities**

City	Location	River Reach
Avondale		
Riparian Area	Avondale Water Treatment Plan, Confluence of Gila River	South Reach
Constructed Wetlands	Agua Fria Channel at I-10 and McDowell Road, Agua Fria Channel at Buckeye Road & Railroad crossing, Recharge areas north of Regional Park II, I-10 Outfall Channel	South Reach
Equestrian Staging Area	East along Agua Fria south of Elwood Road	South Reach
Maintenance Road/Shared Use Trail	On Levee	South Reach
Equestrian/Shared Use Trail	In River	South Reach
Trailheads	At Coldwater Park and Avondale Mitigation Site	South Reach
Interpretive Areas	Gila River Confluence, Buckeye Road (Southern Pacific RR), I-10, Coldwater Station, Initial point	South Reach
Parks	Reclaimed mining site south of Indian School Road	South Reach
Trail Connections	Roosevelt Water Conservation District Canal, Indian School Road, Regional Park II	South Reach
Mixed Use River Oriented Development	West Side of the River at Lower Buckeye and Buckeye Roads	South Reach
El Mirage		
Trails	In-channel	Center Reach
Interpretive Area	Agriculture and labor	Center Reach
Parks	In El Mirage at Peoria Road	Center Reach
Glendale		
Interpretive Areas	Saguaro Ranch	Center Reach
Trails	New River to Olive Avenue Alternate Route	Center Reach
Phoenix		
Interpretive Sites	Maryvale – Master Planned Communities	Center Reach
Trailhead	Camelback Ranch Park	Center Reach
Trail Connections	New River at Confluence	Center Reach
Trails	In-channel and on Levee	Center Reach

City/Amenity	Location	Reach
Peoria		
Trails	In-channel and on east bank of River, connecting to Sunshine Park (planned).	North Reach
Trailhead Staging Areas	State Route 74, Jomax Road, Happy Valley Road, Lake Pleasant Road	North Reach
Trailheads	At proposed regional park, Jomax Road, Beardsley Road	
Trail Connections	Sunshine Mountain Trail, Twin Buttes Wash and Wash 1, Wash 2 and Wash 3, State Route 74, State Route 74 high water marker	North Reach
Interpretive/Cultural Areas	Calderwood Butte, Casa de Peidras, Central Arizona Project Canal, Beardsley Canal, New Waddell Dam	North Reach
Open Spaces/Habitat	River North of Jomax Road, recharge basins associated with recharge south of Jomax Road, George's Pond, north of Casa de Piedras	North Reach
Constructed Wetlands	Agua Fria below Jomax	North Reach
Sun City East		
Interpretive Areas	Sun City West New Urbanism	Center Reach
Sun City West		
Trails	On west side of River	Center Reach
Trailheads	Bell Road	Center Reach
Open Spaces	Cresote Flat north of McMicken Dam Outfall Channel	Center Reach
Parks	McMicken Dam Outfall Channel	Center Reach
Youngtown		
Trail Connections	Proposed as part of Bank Stabilization adjacent to the Town	Center Reach

4.3 RECREATION PLANNING ISSUES

Introduction

In addition to the many opportunities along the river, there are many issues that were considered in formulating the recommendations in this report. These issues include regulations that may restrict the uses of some areas, the need to preserve the River as a stormwater conveyance, river access, environmental hazards, existing development patterns, current land use, and the cost to implement and maintain some of the potential open spaces, trails and recreation facilities.

Planning Issues

The planning issues listed below were identified by members of the planning team, jurisdictions along the River and residents attending the public meetings held throughout the project.

Recreation

- The industrial feel of the central reach and current mining activities limit access and continuous recreation opportunities.
- Existing and planned privately developed parks reduce the incentive for public entities to provide facilities within the River that may be redundant.
- Access to the River is difficult in many places due to the design of existing developments, flood control improvements, mining, or natural topography.
- Flooding events could potentially result in damage or loss of recreation improvements placed within the River.
- Because the River is at a lower elevation than surrounding development, there is limited opportunity for community or informal policing, which means safety may be an issue. The braided character of the main channel limits the opportunity to create developed recreation connections between the east and west side of the river.
- Regulatory entities should continue to work with new development along the River to ensure opportunities for access, conservation of recreation, open space, environmental, habitat and cultural resources are maintained.

Recharge

- There is potential for multiple use activities adjacent to recharge channels and basins to have an effect on the class and the amount of water being recharged.
- The type of conveyance (constructed or in-channel natural flows) will impact how much of the River will be used and the compatibility of recreation uses with recharge activities.
- Some recharge (i.e., effluent) may have undesirable characteristics that could impact recreation use.
- Recharge facilities that are being initiated now may require retrofit or redesign if they are to be designed in a manner that promotes multiple or interpretive uses.
- Recreation and landscape associated with recreation may negatively impact the effectiveness of recharge activities.

Archaeological

- While many studies have been done, they need to be more in-depth and additional research is needed to fully document these sites.
- Most of the northern sites are underground.
- Most sites do not lend themselves to public interpretation.
- One rock art site may have religious association that impacts its use.
- While some sites contain valuable information, the resources are not readily visible.
- Many sites are on private land.
- Most sites should be open to the public only when adequate protection is in place.

Cultural

- Most of the cultural and interpretive sites are not focused on the River itself, but on getting people across the River.
- The story of the River is one of how it was used for the best advantage of whichever group was using it at the time.
- Many of the resources and sites are not adjacent to or within the River or project boundaries.
- The habitat and vegetation associated with George's Pond should be preserved and protected.

Environmental

- With the exception of the northern end and the restoration of the southern end of the southern ends of the corridor, the Agua Fria River has marginal environmental value.
- Water quality issues may impact the potential for mitigation banking within the River.

Flooding and Erosion

- The maintenance road must be useful and accessible for river management and maintenance at all times.
- Without proper planning and management, recreation activities could accelerate erosion in some parts of the River.
- The safety of people within the floodplain during a storm event must be considered in all types of open space, trail and recreation facility planning.
- Large flood events could result in the destruction or damage of open spaces, trails and recreation facilities in the River.

4.4 PLANNING MANAGEMENT AREAS

To address the issues presented in this report, and provide guidance for development recommendations regarding the types of open spaces, trails and recreation facilities that could be associated with flood management facilities and techniques proposed for the River, three broad management areas were identified. These areas are based on the immediate river environment, its resources and adjacent land use. The purpose of these areas is to guide the types of activities that could be associated with proposed flood management facilities and techniques and occur within and adjacent to the River after consideration of the planning issues. Figure 8 describes the location of these management areas along the Agua Fria. Table 7 describes the types of activities appropriate to the management areas.

PLANNING MANAGEMENT AREAS

Figure 8



RURAL

Habitat, wildlife conservation.

The rural zones are the least impacted areas of the river. Access limited to protect sensitive areas. Recommended for passive recreational activities, with equestrian and hiking routed around fragile areas.



URBAN

Active.

This zone is characterized by intense uses: sand and gravel operations, mixed-use commercial and industrial land uses abut the river.

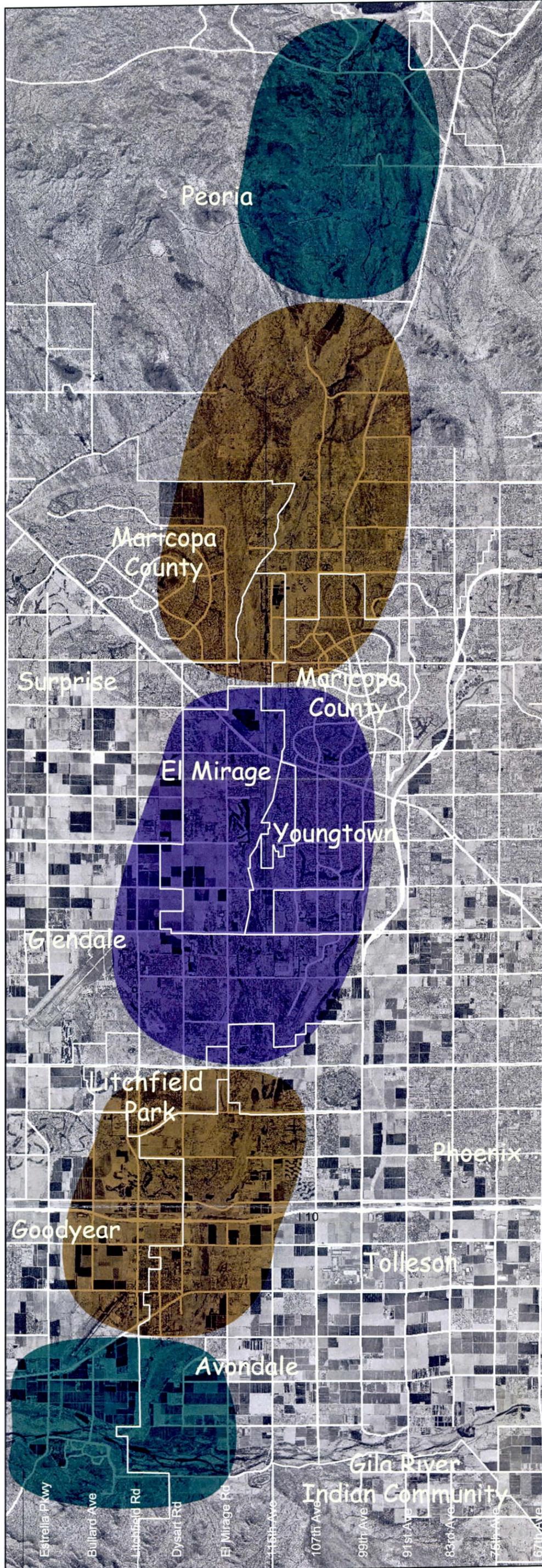


SUBURBAN

Passive.

This zone is characterized by existing and planned residential development. Recreation and access should be linked with community open space and residential areas.

Sources: Kenney Aerial Mapping (2000)



- Desert Hills Dr
- Joy Ranch Rd
- Cloud Rd
- Carefree Hwy
- Dove Valley Rd
- Lone Mountain Rd
- Dixileta Dr
- Dynamite Blvd
- Jomax Rd
- Happy Valley Rd
- Pinnacle Peak Rd
- Deer Valley Rd
- Beardsley Rd
- Union Hills Dr
- Bell Rd
- Greenway Rd
- Thunderbird Rd
- Cactus Rd
- Peoria Ave
- Olive Ave
- Northern Ave
- Glendale Ave
- Bethany Home Rd
- Camelback Rd
- Indian School Rd
- Thomas Rd
- McDowell Rd
- Van Buren St
- Buckeye Rd
- Lower Buckeye Rd
- Broadway Rd
- Southern Ave
- Baseline Rd

- Estrella Pkwy
- Bullard Ave
- Litchfield Rd
- Dysart Rd
- El Mirage Rd
- 116th Ave
- 107th Ave
- 99th Ave
- 91st Ave
- 83rd Ave
- 75th Ave
- 67th Ave

**TABLE 7
AGUA FRIA RIVER PLANNING MANAGEMENT AREAS MATRIX**

DEVELOPMENT ACTIVITIES	Management Goals & Intensity		
	RURAL (HABITAT AND WILDLIFE CONSERVATION)	4.5 SUBURBAN (PASSIVE)	URBAN (ACTIVE)
Transportation	Access restricted to protect sensitive desert areas; trails will skirt such areas.	Link with community open space systems and residential areas.	Links between residential, commercial, recreational, etc., areas: bypass routes to separate more intensive users from pedestrians.
Flood Control	Natural, generally non-structural Low flow channels integrated into environment.	Non-structural. Structural to protect road crossings, existing development, or to preserve natural features.	Structural to stabilize banks, protect planned and existing development and desired natural features.
Recreation	Fitness, observation, restricted hiking and packing, equestrian routed around fragile areas. Stabilized surfaces.	All activities in Conservation Wildlife Management Goal and picnicking, camping, restricted bicycling, restricted blading, restricted horseback, concessions, fitness, hiking and packing, touring, climbing, non-motorized boating, services.	All activities in Conservation Wildlife and Passive Management Goals and motorized activities, shooting, bicycling, blading, field oriented sports, rodeo, large group (>10 people) activities, fitness, festivals, concessions, services.
Interpretation and Education	Controlled access; viewing platforms and elevated pathways for observation of protected habitat, especially in areas near New River Dam.	Numerous opportunities on proposed trails with informational signs on bridges, and structures; linkages also serve as educational opportunities, identification of historic sites.	Numerous opportunities on proposed trails with informational signs; links also serve as educational opportunities.
Extraction and Mining	Low Compatibility.	Low Compatibility.	Revegetation and restoration plans required, time limits placed on activities, buffering during activities required.

DEVELOPMENT ACTIVITIES	Management Goals & Intensity		
	RURAL (HABITAT/ WILDLIFE CONSERVATION)	4.6 SUBURBAN (PASSIVE)	URBAN (ACTIVE)
Economic	No development or alteration of floodplain. Buffer floodplain from adjacent uses.	Incorporate floodplain into development without altering shape or characteristics. Restore floodplain and floodway to enhance land uses.	Incorporate trails or river amenities into land uses adjacent to the floodplain some alteration of the floodplain to encourage desired uses.
Trailhead	Outside the floodplain.	Limited facility trailheads inside the floodplain. Compacted parking areas, restrooms, small picnic areas.	Full facility trailheads. Paved parking areas, restrooms, picnic areas, play fields (if appropriate).
Land Use	Residential (buffered from the floodplain), open space, resort.	Residential outside the floodplain, neighborhood commercial, community (i.e., library, park, low intensity administrative or doctors office).	All in Passive Management Goal Category and mixed use, high intensity areas, including mixed use cores and/or nodes and industrial.
Recharge	Natural (wetlands) only.	Revegetated areas, soft surface basins and/or channels integrated into surrounding environment.	All in Passive Management Goal Category, and landscaped hard surface basins, pipes, hard surface and landscaped channels.
Others/Special Areas			

5. RECOMMENDATIONS

5.1 VISION, GOALS, OBJECTIVES AND POLICIES

The vision, goals, objectives and policies are realized in through the recommendations of this report. They are based on information developed in prior sections, analysis, and public comments. The vision provides the ultimate condition that the integration of open space, trails and recreation facilities into flood control techniques along the River could create. Goals are broad policy statements. Objectives are clear, discrete steps that will fulfill the goal when they are accomplished. Policies are specific actions necessary to accomplish the objectives.

Recreation Plan Vision

Understand the potential to complement the flood control functions of the Agua Fria River by creating a dynamic open space and recreation corridor that remembers landscapes of the River, the people who lived along and within it, and provides recreation opportunities for current and future residents.

Goal: *Create activity within the Agua Fria River while minimizing the impact of recreation on the landscape.*

Objective: Identify passive open spaces at areas that are ecologically valuable and scenic locations.

Policy: Create a protected habitat area at George's Pond and at the State Route 74 Bridge.

Policy: Create a passive activity area at the large stand of Saguaros south of the Central Arizona Project.

Policy: Create a passive activity area at the mesquite bosque in the floodplain south of the Central Arizona Project.

Policy: Create a passive recreation areas at the confluence of the Gila and the Agua Fria River.

Policy: Create a passive recreation area on the bluff south of Rose Garden Lane.

Objective: Identify and develop active recreation areas in practical and feasible locations of demonstrated need.

Policy: Encourage the development of a park in El Mirage at Peoria Road.

Policy: Encourage the development of a park at the McMicken Dam Outfall Channel.

Objective: Develop and use a system to help determine the types of secondary use that could be associated with flood control that would be most appropriate to the River environment.

Policy: Implement the Planning Management Areas included in this report.

Goal: *Use the River as a bridge to connect to the cultural history of the West Valley.*

Objective: Provide interpretative facilities throughout the length of the River.

Policy: Provide interpretation about the historic, environmental or transportation value of resources along the River at the following locations:

- Coldwater Station.
- Coldwater Park and the railroad tracks.
- Central Arizona Project Canal.
- Beardsley Canal.
- I-10 and adjacent riparian area.
- State Route 74 Bridge.
- Calderwood Butte.
- Jomax Road Rock Outcropping (Marionette Canal).

- Confluence of the New River.
- Confluence of the Gila River.
- El Mirage at Peoria Road.

Objective: Help others realize that all of us have a responsibility to preserve archeological resources along the Agua Fria River.

Policy: Identify archaeological sites and incorporate them into recreation areas that protect and conserve them.

Goal: *Connect the open space recreation resources along the River to each other, adjacent neighborhoods, and other recreation and open space resources in the West Valley, the region and the state.*

Objective: Develop a trail that connects recreation, open space and interpretive resources along the River.

Policy: Permit shared non-motorized recreation use along maintenance roads and levees along the Agua Fria River.

Policy: Work with local jurisdictions to identify and obtain right of way for a continuous trail corridor within the Agua Fria floodplain.

Goal: *Provide access to the River.*

Objective: Work with jurisdictions adjacent to the river to develop access areas and trail heads at parks adjacent to the river or trails that cross the River.

Policy: Participate in the review of plans for development adjacent to the River.

Policy: Initiate meetings with the Central Arizona Project and Maricopa Water District to encourage the use of the canals for trails.

Policy: Participate in the Maricopa County Trails Program planning effort.

Policy: Initiate meetings with jurisdictions along the River and the State Land Department and Arizona Department of Transportation to encourage the inclusion of access areas and trailheads in public projects.

Policy: Consider the inclusion of trailheads as a secondary use when developing and designing maintenance roads, facilities and structures adjacent to the River.

Policy: Preserve and enhance existing equestrian uses within and along the River.

Goal: *Educate and inform the public about the history of the people who lived along the river and role of the river in the development of the West Valley and the region.*

Objective: Provide interpretation through signs, literature, websites and events to introduce residents to the natural and cultural history of the River.

Policy: Work with the Flood Control District and local jurisdiction public information offices to provide interpretive information about the river at least twice annually.

Goal: *Integrate ecological values with recreation concepts.*

Objective: Create open spaces and recreation facilities that result in the restoration of habitat that is appropriate to the watershed and stream characteristics.

Policy: Create an open space mitigation area at the I-10 stormwater outfall.

Policy: Whenever possible, integrate habitat restoration into open space areas.

Goal: *Integrate recreation functions into flood control facilities.*

Objective: When possible and practical, ensure that flood control facilities be used for multiple recreation and interpretive uses.

Policy: When practical and feasible, permit public non-vehicular recreation use on Flood Control District maintenance roads.

Policy: When practical and feasible permit public non-vehicular accesses to flood control levees or on trails adjacent to them.

5.2 PLAN OVERVIEW

This section of the report summarizes the recommended recreation elements for the Agua Fria Watercourse Master Plan.

Recreation Plan Summary by Recreation Component

The following summarizes the proposed Agua Fria Recreation Plan by the type of use or facility that could be associated with flood management techniques or facilities. Figure 9 shows how these recommended open space, trail and recreation facility components could connect to open space, trail and recreation facilities that are included in adopted or underway plans.

Hiking and Biking Trails and Trailheads

Two trails are proposed to travel the extent of the River. The on-bank, trail is planned as a paved, shared use maintenance road intended to primarily provide flood and river management functions and secondarily serve bicyclists, walkers, joggers and skaters. The maintenance road would be generally located outside the floodway or adjacent to the levees between Buckeye and Camelback Road. An in-river trail is recommended as a stabilized surface facility that would include equestrian use. This trail would merge with the primary trail from time to time. When the trails are merged they would be either paved or unpaved depending on their location and primary function. When the trail is in-river, it is recommended that it be incorporated into vegetated areas that are proposed as part of the Landscape Character Plan element of the Watercourse Master Plan. Trailheads are recommended at several locations in conjunction with trail crossings, arterial streets, and parks.

Parks

Two developed parks, one in El Mirage at the Peoria Road alignment and another at the McMicken Dam Outfall Channel channel are recommended.

Equestrian Facilities

The two existing horse stables include the private horse corrals on the east side of the River below Lower Buckeye Road and the Luke Air Force Base horse corrals north of Glendale Avenue are recommended to be retained. A planned equestrian access is located at Camelback Ranch Park. An additional equestrian access area and trailhead is recommended at Lower Buckeye Road.

Environmental, Habitat, and Open Space Areas

Riparian interpretive areas and trails adjacent to recharge basins and channels are recommended to be associated with recharge facilities underway or planned by the Central Arizona Project and the Southwest Regional Operating Group. In addition, a mitigation site is recommended at the I-10 outfall channel and open spaces are identified in this report and other plans at locations throughout the corridor.

Interpretive, Historic, and Cultural Resources

The rich history of the Agua Fria River has been incorporated as part of the Agua Fria Master Plan. The historic Akimel Au Authm inhabited and farmed the area at the confluence of the Gila River and the Salt River, and the Yavapai's traditional homeland was along the middle and upper reaches of the Agua Fria River. This report recommends celebrating, conserving and preserving these sites by creating interpretive areas at the Casa de Piedras prehistoric ruins and Calderwood Butte. Conceptual interpretive areas at the Beardsley and Central Arizona Project Canals, Calderwood Stage Site, at master planned developments, and other important sites and crossings are also recommended.

PROPOSED RECREATION CORRIDOR PLAN

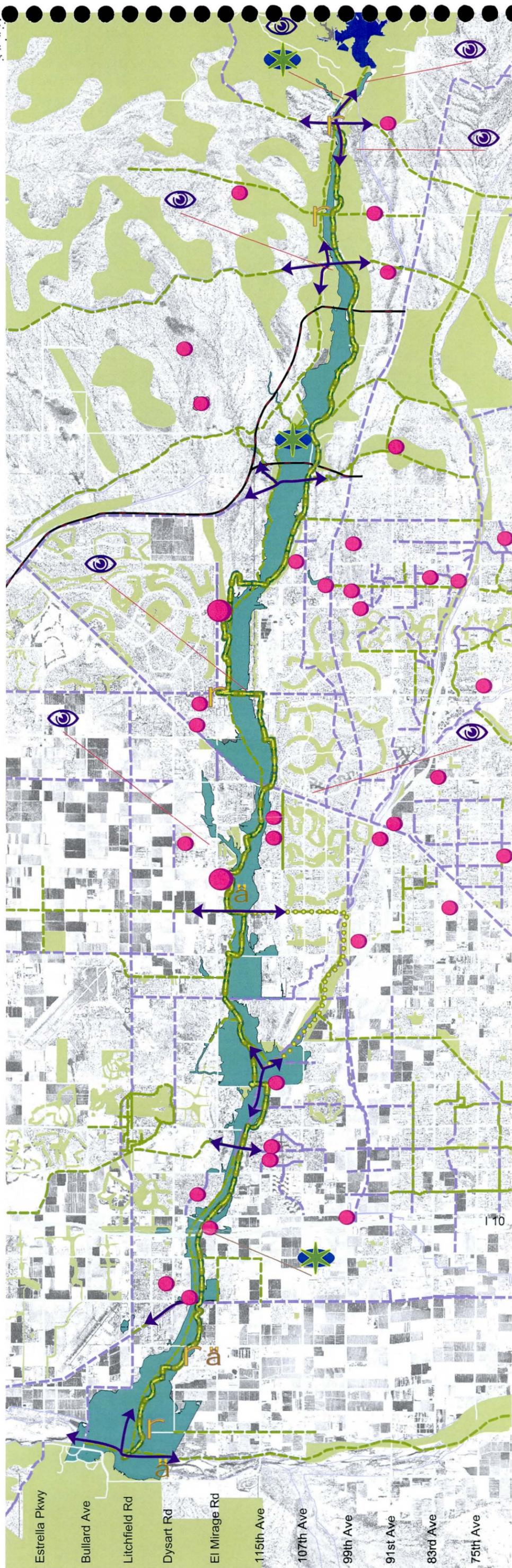
Figure 9

This map shows the proposed recreation features, in addition to existing and planned recreation facilities in the vicinity of the Agua Fria River.

Legend

-  Floodplain
-  Upland/Open Space
-  Proposed Corridor Park
-  Planned and Existing Community/Neighborhood Park
-  Trailhead/Staging Area
-  Equestrian Facility
-  Interpretive/Cultural Point
-  Riparian Area
-  Connections
-  Planned and Existing Multi-Use Trails
-  Planned and Existing Bike Lanes
-  Proposed Route 303 and Happy Valley

Sources: Maricopa Association of Governments (1995), Flood Control District of Maricopa County (2000), Arizona Land Resource Information System, and Jurisdictional Plans.



5.3 RECREATION PLAN SUMMARY BY RIVER REACH

SOUTHERN REACH: Confluence of the Gila River to the New River

The southern reach of the river consists of two types of planning management areas. The Reach between the New River confluence to approximately Lower Buckeye Road is considered a suburban planning management area, which transitions back to the rural planning management area below Lower Buckeye Road to the confluence of the Gila River.

Recommended recreation facilities for this reach include a park and trailhead combination is at the existing Avondale mitigation site. A shared use trail starting at Buckeye Road and adjacent to the levees on both sides of the River and an in-river trail starting at the Avondale mitigation site is also recommended. The trail adjacent to the levee could connect the western portion of Avondale to the under construction Avondale Regional Park II. Trailheads and equestrian staging areas are recommended at the intersections of the River with other trails, parks and some arterial streets throughout the reach. Interpretive areas focused on the railroad crossing, the Gila River and Coldwater Stations are identified and recommended. An open space and mitigation area is recommended at the I-10 drainage outfall and a restored habitat area and passive open space is recommended at the confluence of the Gila and Agua Fria Rivers

CENTER REACH: Confluence of New River (Camelback Road) to Bell Road

The Center Reach of the Agua Fria River currently consists of urban activities in close proximity to general industrial uses such as sand and gravel mining, Glendale Airport, El Mirage landfill, and the I-10 freeway. This reach is considered an urban planning management area.

Between Camelback Road to Olive Avenue the predominant use on the River is mining and no recreation uses are recommended. To avoid conflicts with mining operations in this area, the trail adjacent to the levee and the in-river trail are recommended to be continued through the New River with a connection via Olive Avenue to the Agua Fria River. A neighborhood park at Peoria Road in El Mirage and equestrian access and arena associated with the Luke Air Force Base stables are also recommended within this reach. Recharge areas in this and other reaches are recommended to be vegetated as open space and riparian areas.

NORTH REACH: Bell Road to the New Waddell Dam

The area adjacent to and within the River channel in the area north of Dove Valley Road is mostly undeveloped desert. Land uses south of Dove Valley Road transition to suburban to approximately Deer Valley Road. The area below Deer Valley Road transitions to urban and industrial land uses. The planning management areas here are urban, suburban, and rural

This recommendations for this reach of the River include a riparian preserve at George's Pond. The stabilized surface in-river trail is recommended to continue along the edge of the floodplain, the other trail is recommended to continue on the bank of the River. Open space areas, several trailheads at the River's intersection with planned and existing trails and at some arterial streets, interpretive areas at Calderwood Butte and Casa de Piedras, the Central Arizona Project and Beardsley Canal are also recommended. The report recommends the multiple use development of the McMicken Dam Outfall Channel as a community park and flood control facility.

5.4 RECREATION PLAN DETAIL

This section of the report describes the planned recreation elements for the Agua Fria Watercourse Master Plan, which involved collaborative planning and design efforts with multiple jurisdictions. Figure 10 is a detailed description of the recreation plan components.

WEST VALLEY RECREATION CORRIDOR

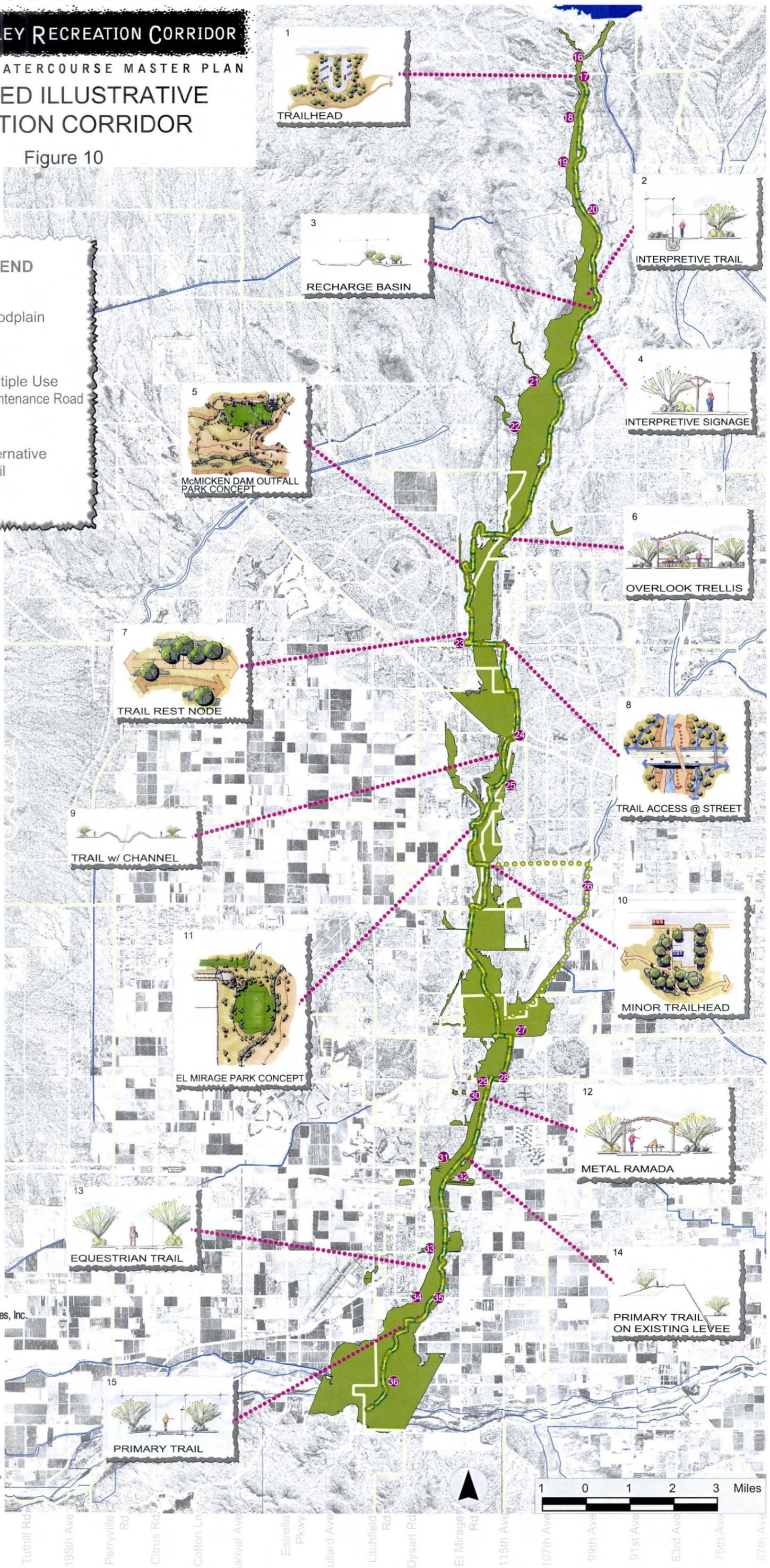
AGUA FRIA WATERCOURSE MASTER PLAN

PROPOSED ILLUSTRATIVE RECREATION CORRIDOR PLAN

Figure 10

LEGEND

- Floodplain
- Multiple Use Maintenance Road
- Alternative Trail



- Desert Hills Dr
- Joy Ranch Rd
- Cloud Rd
- Carefree Hwy
- Dove Valley Rd
- Lone Mountain Rd
- Dixileta Dr
- Dynamite Blvd
- Jomax Rd
- Happy Valley Rd
- Pinnacle Peak Rd
- Deer Valley Rd
- Beardsley Rd
- Union Hills Dr
- Bell Rd
- Greenway Rd
- Thunderbird Rd
- Cactus Rd
- Peoria Ave
- Olive Ave
- Northern Ave
- Glendale Ave
- Bethany Home Rd
- Camelback Rd
- Indian School Rd
- Thomas Rd
- McDowell Rd
- I 10
- Van Buren St
- Buckeye Rd
- Lower Buckeye Rd
- Broadway Rd
- Southern Ave
- Baseline Rd

Kimley-Horn and Associates, Inc.

CORNOY MEDBICK



Tuthill Rd 195th Ave Perryville Rd Citrus Rd Cotton Ln Sarival Ave Estrella Pkwy Bullard Ave Litchfield Rd Dysart Rd El Mirage Rd 115th Ave 107th Ave 99th Ave 91st Ave 83rd Ave 75th Ave 67th Ave

SOUTH REACH: Confluence of New River to confluence to Gila River

Planning Management Areas

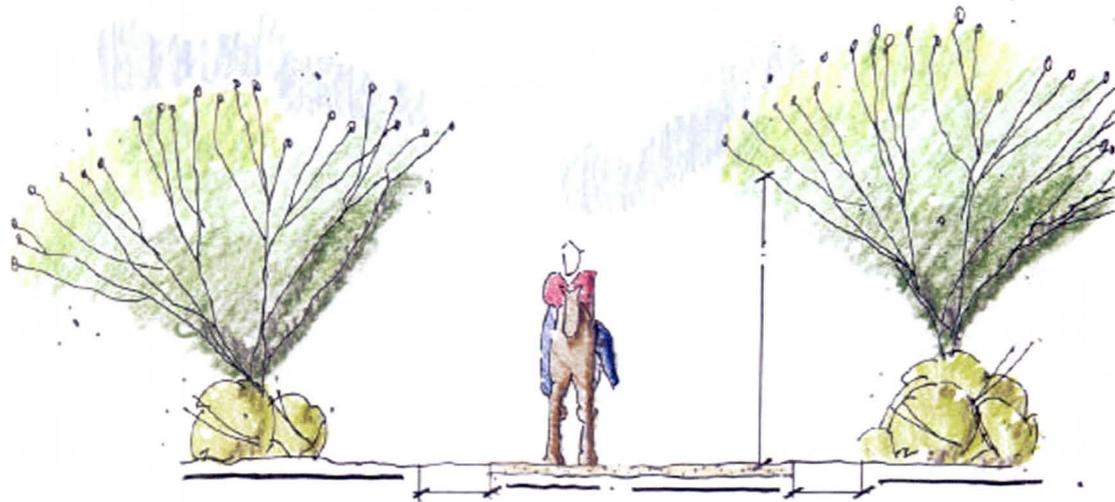
The southern reach of the River consists of two types of planning management areas. The reach between the confluence of the Gila River and Lower Buckeye Road is considered a rural planning management area. North of Lower Buckeye road to the New River confluence is considered a suburban area.

Confluence of Gila River to Broadway Road

The Avondale Mitigation Site is recommended to be restored as a park with a major trailhead and the initiation and terminus of a stabilized surface in-river trail (36). The riparian area at the confluence is recommended to be restored as a habitat and interpretive area. Interpretive signs describing the Agua Fria River as a transportation resources due to the many east-west crossings that join the West Valley and potential of the River to be a north to south transportation corridor.

Broadway Road to MC85 (Buckeye Road)

An equestrian trailhead (35) is proposed at Lower Buckeye Road on the east side of the river. This trail will provide access for residents in the mostly rural residential areas adjacent to the river. Within this reach, the initiation of a paved surface trail (15) along both levees is recommended and the in-river stabilized surface trail (13) that provides equestrian use and marked by bollards in the River channel is recommended to be continued.



Mitigation Site. This trail would continue north in the Agua Fria River to the confluence of the New River.

Shopping, dining, and strolling have become a form a recreation and entertainment. The Agua Fria River offers a tremendous opportunity to blend these types of recreation activities with traditional recreation uses. To complement traditional recreation uses, a mixed-use river oriented development (34) is recommended on the west side of the River at Lower Buckeye Road on the City of Avondale owned property, once the City vacates it's offices and moves to a new facility.

MC 85 (Buckeye Road) to I-10

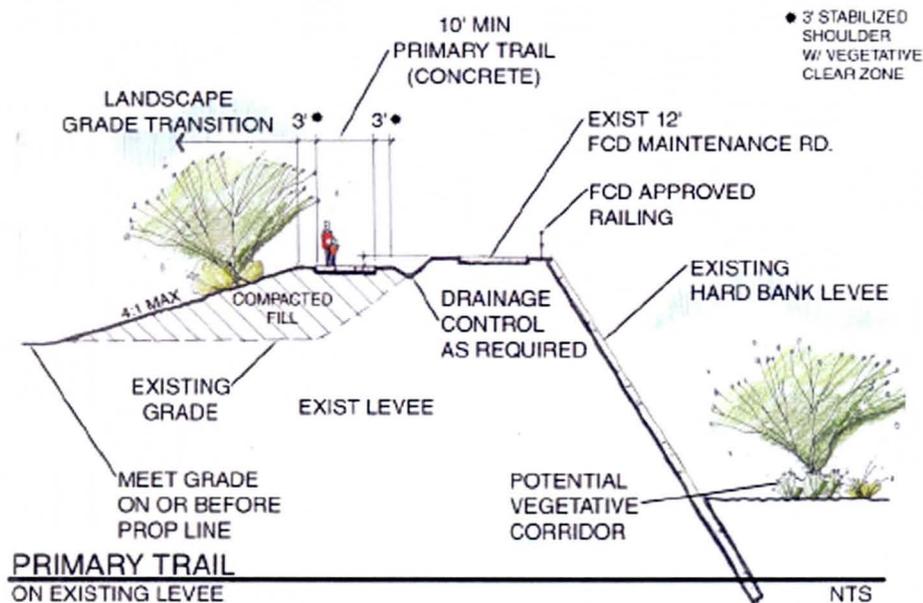
South of Coldwater Park on the north side of Buckeye Road and I-10, an interpretive facility associated with the Santa Fe and Southern Pacific Railroad is recommended. This facility could include information about rail and its role in moving agricultural products that have been important throughout the development of the West Valley. On the vacant City owned land just west of Coldwater Park a mixed use-river oriented node is recommended (33). This would provide a second commercial and entertainment venue within Avondale along the River.

The trails are recommended to continue adjacent to the levee and in-river through this reach. A trailhead associated with the interpretive facility related to the railroad north of Buckeye Road and Coldwater Station is recommended within this reach to provide access to the trails.

I-10 to Indian School Road

Connections from the private park associated with the Rancho Santa Fe master planned community to the trail adjacent to the west levee are recommended (31). These connections would provide a direct route to the City of Avondale Regional Park II on the east side of the River.

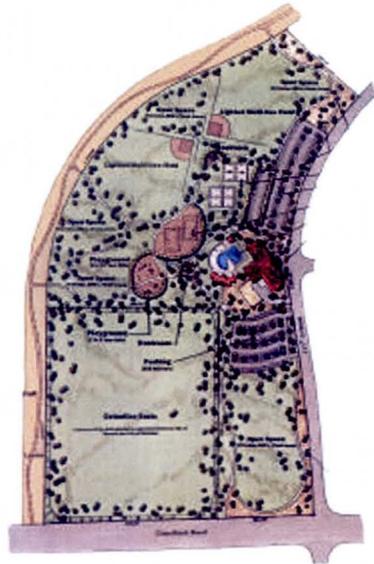
The Arizona Department of Transportation Outfall Channel, located on the north side of I-10, is recommended as a habitat area with trails and open space interpretation (32). Access under McDowell Road and across the River to Regional Park II is also important to provide users of the trail on the west side of the River access to Regional Park II.



The Primary Trail is recommended on both sides of the River. This paved, shared use trail would connect to existing parks and trails that cross or intersect the Agua Fria River. To protect the levee and maintain access for maintenance vehicles, the trail would be constructed on fill next to the levee

The trail is recommended to continue here, along both sides of the River adjacent to the levees (14). A connection from the trails to the Roosevelt Irrigation District canal and the inclusion of the canal as a trail in the Avondale Parks, Recreation, Open Space and Trails Plan 2001 is also recommended (29).

A park associated with the reclaimed mining site located south of the Roosevelt Irrigation District Canal, in accordance with the adopted reclamation plan, is also recommended (30)



The Planned Camelback Ranch Park will provide equestrian access to the Agua Fria and New Rivers. This park is located at the northwest intersection of the Agua Fria River and Camelback Road. North of the park is a planned open space corridor along the New River.

Indian School Road to the confluence of the New River

Connections are recommended at Indian School Road to provide on-street bicycle route and sidewalk access to residents of Villa De Paz on the east side of the River (28). The planned Camelback Ranch Park (27) will provide equestrian access and an open space node at the northeast intersection of Camelback Road and the River. Open space, associated with the planned Camelback Ranch community, is also planned within the reach.

The levees end at Camelback Road. The trails are recommended to merge here, and continue along the New River to Olive Avenue to avoid existing mining operations.

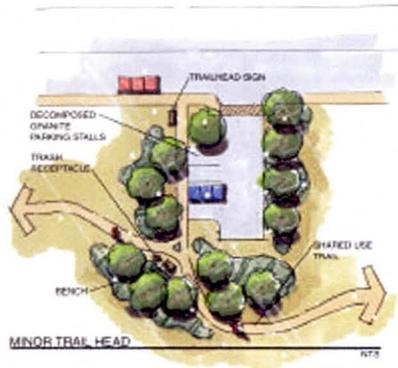
CENTER REACH: Confluence of New River to Beardsley Road

Planning Management Area

This center reach of the Agua Fria River currently consists of urban activities with general industrial uses including sand and gravel mining, Glendale Airport, El Mirage landfill, and the I-10 freeway. This reach is considered an urban planning management area.

Confluence of New River to Olive Avenue

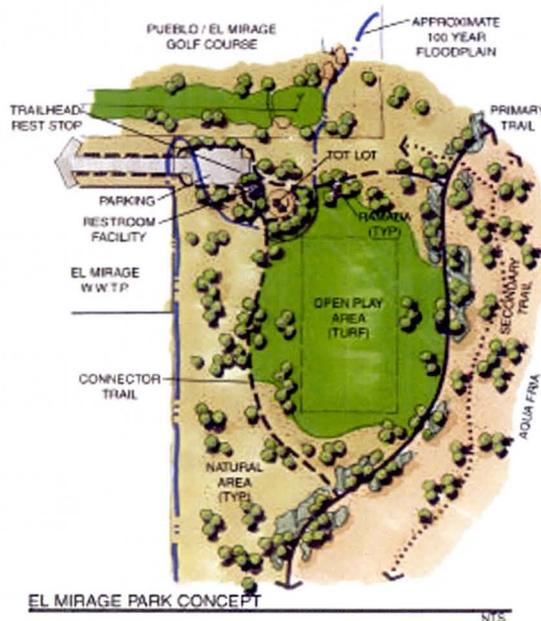
Due to heavy industrial activities that span the entire reach of the River, no recreation activities are recommended. Alternative trail access is recommended along the New River (26) to Olive Avenue. On-street bicycle routes and sidewalks are recommended to provide bicycle and pedestrian access from the New River back to the Agua Fria River corridor. A trailhead at Olive Avenue (10) could mark re-entry to the River trail.



A minor trailhead at Olive Avenue could provide re-entry to the Agua Fria River Trail.

Olive Avenue to Cactus Road

The in-river trail is recommended to continue along the west side of the River to Cactus Road. A paved, shared use trail along the west bank of the River is also recommended for the reach. A park associated with the existing vegetation at the Peoria Road alignment in El Mirage is recommended to serve new residential development to the north (11). Connections to the Youngtown Maricopa Lake Park, constructed as part of bank stabilization recommended on the east side of the river in the Watercourse Master Plan are also recommended (25).



A park with open, turf play areas, associated with the natural area on the east side of the River at Peoria Road in El Mirage, is recommended. This park would serve new development in El Mirage south of Grand Avenue as well as residents of Youngtown.

Cactus Road to Bell Road

At Grand Avenue, the trails are recommended to merge and continue on-street on the east side of the River to Bell Road. No other recreation facilities are proposed here. The merged trail is recommended to continue on street to Bell Road **(24)**.

Bell Road to Beardsley Road

A vacant parcel owned by the State Land Department located at the northwest corner of Bell Road and the Agua Fria River offers an opportunity to provide a trailhead with equestrian access to the Agua Fria River **(23)**. The on-street trail recommended south of Bell Road could connect to the trailhead via the Bell Road Bridge. North of Bell Road, shared use paved maintenance road could continue on the western bank. The in-river trail could continue along the west edge of the floodplain **(8)**. Both trails could converge **(7)** at a park proposed for the McMicken Dam Outfall Channel located just north of the Beardsley Road alignment on the west side of the river **(5)**.



A park, proposed in the McMicken Dam Outfall Channel, could provide natural areas along the washes in the outfall area, as well as, other opportunities for active and passive recreation.

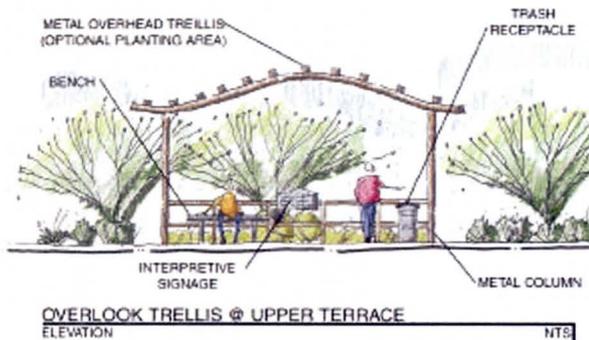
NORTH REACH: Beardsley Road to the New Waddell Dam

Planning Management Areas

The area adjacent to and within the River channel in this northern reach above Dove Valley Road is considered a rural planning management area. The planning management area transitions to suburban at approximately at Dove Valley Road to approximately Deer Valley Road. South of Deer Valley Road is considered an urban planning management area.

Beardsley Road to Twin Buttes Wash

North of Beardsley Road the trails are recommended to converge at the McMicken Dam Outfall Channel and continue north as a multiple use maintenance road which is paved and provides trail access. The paved trail would continue through an elevated creosote flat located on the western bank of the River along an existing informal dirt road (6). The trail is recommended to cross the River at Rose Garden Lane and continue north along the east bank of the River. A trailhead on the west side of the River associated with SR101 or Beardsley Road is recommended.

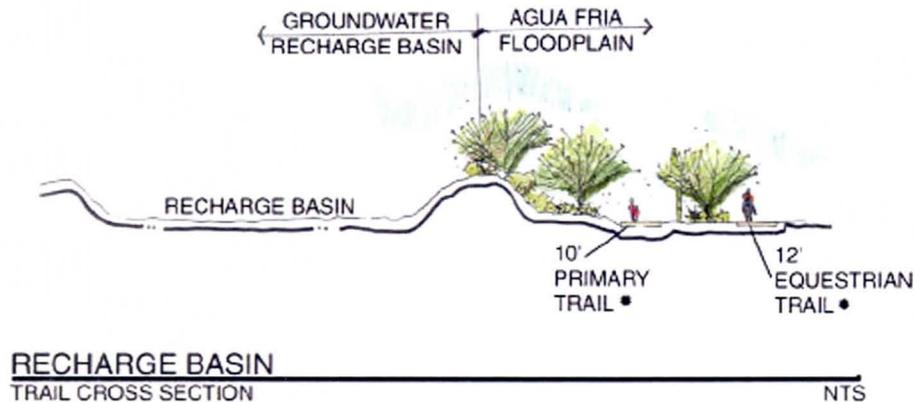


Overlooks providing views of the Agua Fria River and the east bank could be incorporated into the trail at the creosote flat, as well as along the banks of the River.

Twin Buttes Wash to Calderwood Butte

A connection from the trail is recommended to Twin Buttes Wash (22). Besides the trail and the markers and vegetation associated with it, no developed recreation improvements are recommended in this portion of the river. A riparian area is recommended in association with planned recharge basins south of Jomax Road (21).

- ALIGNMENT VARIES SEE PLANS



Vegetation and trails associated with recharge basins or in-channel recharge facilities are recommended.

Calderwood Butte to the CAP Canal

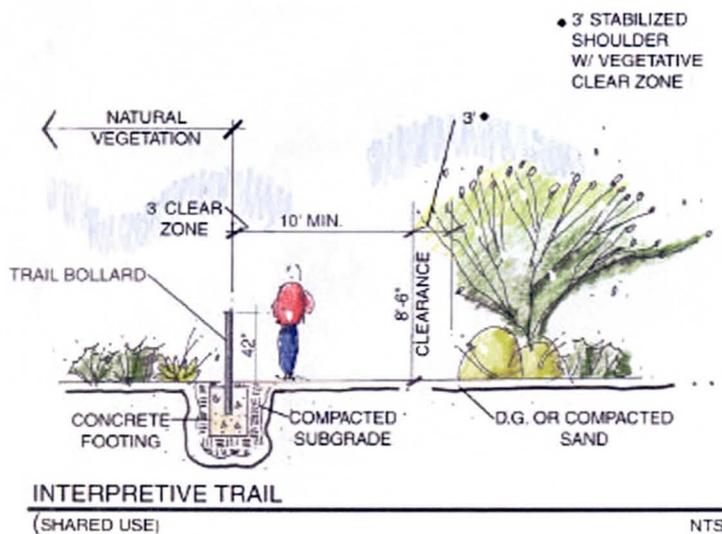
Within this reach the District and City of Peoria could work with property owners to create interpretive areas at Calderwood Butte, Casa de Piedras, the Central Arizona Project and Beardsley Canals (4). Within this area of the River, an on-bank trail is recommended to initiate north of Calderwood Butte on the east terrace of the River (2, 3). An open space area is recommended north of Casa de Piedras (20).



Interpretive signs along the river are recommended to describe the role of the River in the development of the West Valley and how it connects us to our culture and history.

Central Arizona Project to Cloud Road

Connections to the three major washes on the west side of the River in this reach are recommended from the in-river trail (18). The River would remain an open space corridor accessed by the in-river trail. The paved, shared use maintenance road is recommended to continue on the informal road that exists on the east terrace above the River. A trailhead in conjunction with the proposed City of Peoria Regional Park is recommended at Lake Pleasant Road south of the Carefree Highway and on the west side of the River at Carefree Highway (19).



Bollards could mark an in-river. An on-bank trail could be located on the terrace above the River.

Cloud Road to the New Waddell Dam

A connection to the planned Maricopa County on-street bicycle route along State Route 74 and to the Lake Pleasant Park is recommended at the State Route 74 Bridge **(17)**. A trailhead is also recommended at this location **(1)**. Interpretive areas associated with pre-historic pit houses on the east side of the River north of State Route 74 are also recommended.

The George's Pond area is recommended to be conserved as a habitat and open space and interpretive area with trails to access it and connections to the Morgan City Wash **(16)**.

6. IMPLEMENTATION

Implementation is addressed in the Implementation Report of the Agua Fria Watercourse Master Plan.

APPENDIX

Recreation Resources Inventory List

1. Avondale General Plan. City of Avondale. 2001.
2. Bicycle Transportation System Plan, Maricopa County Transportation Department. 1999.
3. Bikeways in the Metropolitan Phoenix Area Map, Maricopa County Association of Governments. 1997.
4. Comprehensive Plan. Maricopa County. 2020 Eye to the Future. 1997.
5. Desert Spaces: Environmentally Sensitive Development Areas – Policies and Design Guidelines. Maricopa Association of Governments. 1999.
6. Desert Spaces – An Open Space Plan for the Maricopa Association of Governments. 1995.
7. General Plan for Phoenix (1985 – 2000). City of Phoenix. 1994.
8. Glendale Bicycle Map. City of Glendale. 1997.
9. Glendale General Plan. City of Glendale. 1996.
10. Glendale Parks and Recreation Master Plan. City of Glendale. 2000.
11. Historic Cultural Resources Along The Agua Fria River Between The Gila River and Waddell Dam. Archaeological Consulting Services Ltd. 2000.
12. Regional Bicycle Plan. Maricopa County Association of Governments. 1999
13. Regional Off-Street System Plan. Maricopa County Association of Governments. 2001.
14. Maricopa County Comprehensive Plan. 1997.
15. Northwest Valley Area Transportation Study. Maricopa County. 2000.
16. Parks, Recreation & Open Space Master Plan. City of Peoria. 1996.
17. Pedestrian Area Policies and Design Guidelines. Maricopa County Association of Governments. 1995.
18. Peoria General Plan, City of Peoria. 2001.
19. Phoenix General Plan and Land Use Map. 2001
20. Rivers Master Plan, City of Peoria. 1999.
21. Sun Circle Trail. Maricopa County Map.
22. The Agua Fria: A Working River for the West Valley Themes and Historic Sites. Dallett. 2000.
23. Trails Master Plan. City of Peoria. 1999.
24. West Valley Recreation Corridor: Design Concept Report. Maricopa County Flood Control District. 1999.