

Executive Summary

The vision of a restored Gila River serving as a catalyst for economic development in the Southwest Valley was born in 1999.

Since then, that vision has flourished through the cooperative efforts of Maricopa County and the Cities of Avondale, Buckeye and Goodyear. The El Rio Design Guidelines and Planning Standards provide the county, the communities, and all interested parties, with guidelines to supplement the current development regulations. These guidelines help to create and maintain a focus on techniques that can increase awareness and appreciation of, as well as access to, the Gila River.





i.1 Introduction

The Gila River is one of the more important river corridors in Arizona. With its headwaters in the mountains of western New Mexico and its mouth at the Colorado River in Yuma, the Gila spans the entire width of central Arizona, covering nearly 650 miles, 570 of which are in Arizona. In total, the Gila River accepts drainage from an area of nearly 60,000 square miles, which is slightly more than half the land area of the state. (Source: University of Arizona Water Resources Research Center).

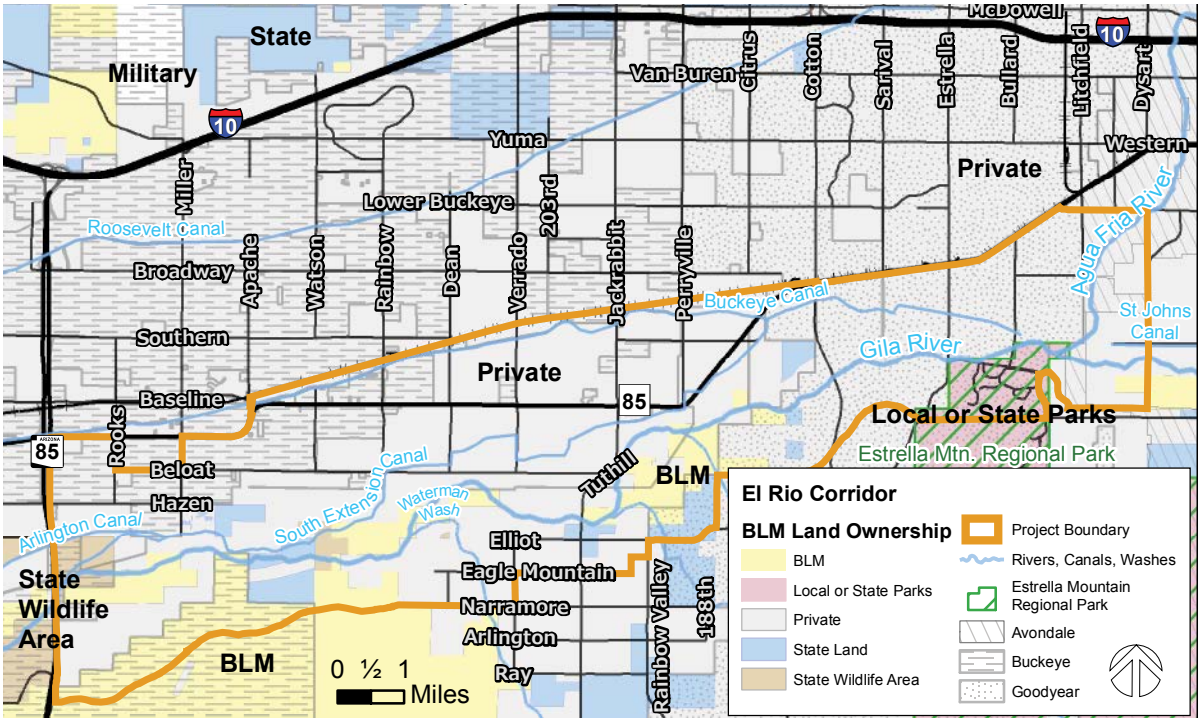


Source: K.Musser <http://www.eoearth.org/view/article/176074/bnrg>

i.2 Area of Study

Located in the west Phoenix metropolitan area, the project area spans roughly 17.5 miles from the junction of the Agua Fria River on the east end to the State Route 85 bridge on the west end, and incorporating nearly 53 square miles as it crosses through the communities of Avondale, Buckeye and Goodyear and unincorporated areas of Maricopa County. This area is one of the fastest growing regions in the country, and will continue to experience significant growth pressures in the future. As such, the corridor has been the focus of several previous planning efforts. In 1999, the *El Rio Vision* document was developed and in 2002, the Flood Control District of Maricopa County (FCDMC) began work on the *El Rio Watercourse Master Plan (WCMP)*. Building on these previous planning efforts, the *El Rio Design Guidelines and Planning Standards* is intended to protect the corridor while integrating multi-use activities.

Understanding the challenge, these communities have looked to other positive examples where these competing goals have been managed successfully. These examples include: Scottsdale's Indian Bend Wash, East Maricopa Floodway, Tres Rios 91st Avenue Demonstration Wetlands Reclamation Project, Rio Salado Environmental Restoration Project, and Tempe Town Lake. Like the examples above, the public interface with the Gila River will address both structural and non-structural flood control alternatives for future development, recognizing the



importance of flood mitigation, the riparian habitat and the potential for economic growth and recreation.

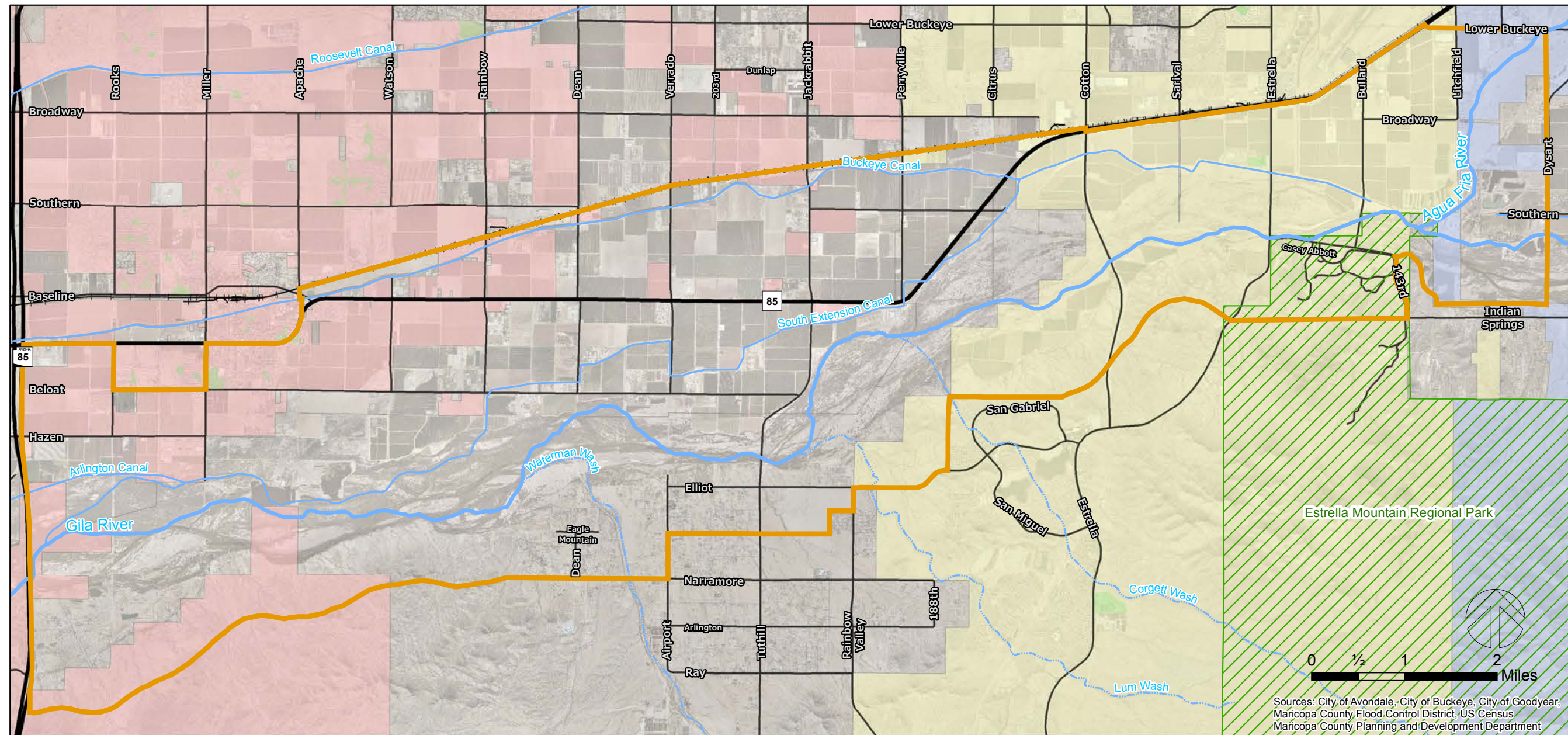
This document provides information about, and guidance on, the following:

1. Background of the project study area
2. Character and vision
3. Land use
4. Open spaces, paths, trails, and edge treatments
5. Planting habitats and transitional planting guidelines
6. Signage and wayfinding features

7. Overview of the economic development potential to the surrounding communities

8. Pilot projects - one in each city

The identified project area (see map above) includes a wide diversity of existing and planned land uses of the three municipalities and areas of unincorporated Maricopa County that border the project. This study supports that future development potential with an additional focus on how these developments, and the public, will interface with the Gila River.



Sources: City of Avondale, City of Buckeye, City of Goodyear, Maricopa County Flood Control District, US Census, Maricopa County Planning and Development Department



Date: 9/27/2015



Legend

- | | | | | | |
|------------------|-------|---------------------------------|----------------|--------------------|----------|
| Project Boundary | Canal | Estrella Mountain Regional Park | Railroad | Interstate Highway | Avondale |
| Washes | Parks | Arterial Streets | State Highway | Buckeye | |
| Rivers | | Interchange | County Highway | Goodyear | |
| | | Ramp | | | |

El Rio Design Guidelines and Planning Standards – Area Map



i.3 Purpose of Document

Design guidelines are meant to illustrate development options and solutions to developing in a floodplain, while maintaining access to the Gila River, improving the aesthetic quality of the river and its surrounding communities, increasing the availability of publicly accessible open space, and effectively utilizing planning efforts to maximize the potential of the surrounding area for development and economic growth. It is important to remember, though, that the guidelines represent conceptual ideas, not zoning regulations or development standards; they do not supersede but are meant to supplement the regulations in the local municipal codes of the surrounding Cities of Avondale, Buckeye and Goodyear, as well as Maricopa County standards.

The purposes of this document include:

1. Communicate the design qualities expected within the El Rio project area
2. Facilitate the fair and consistent application of design objectives throughout the El Rio project area
3. Protect investment within the El Rio project area by encouraging consistently high-quality development
4. Establish a positive interface with the river thereby integrating the river into the future development potential along this vitally important corridor
5. Promote pedestrian and other multi-modal connections to the river and thereby fostering an interconnected society
6. Promote the economic viability of this

area for future development

One of our overriding goals is that all development within the El Rio corridor will provide an interconnected, multi-modal system with a mix of uses and green spaces.

All development in the corridor will link to the El Rio Trail system and the river environment. This interconnected 'ribbon' of green will transform the El Rio corridor into a unified, cohesive setting where residents and visitors can reconnect with nature, pause and enjoy life, and where both natural and human ecosystems can flourish.

Historically, flooding in the El Rio corridor has played an important role in shaping the surrounding natural environment. Although floods occur infrequently in the area, the consequences can be very significant. Flooding can place lives at risk and result in extensive property damage. Therefore, managing the risk of flooding is an important part of contributing towards achieving an economically and environmentally sustainable destination.

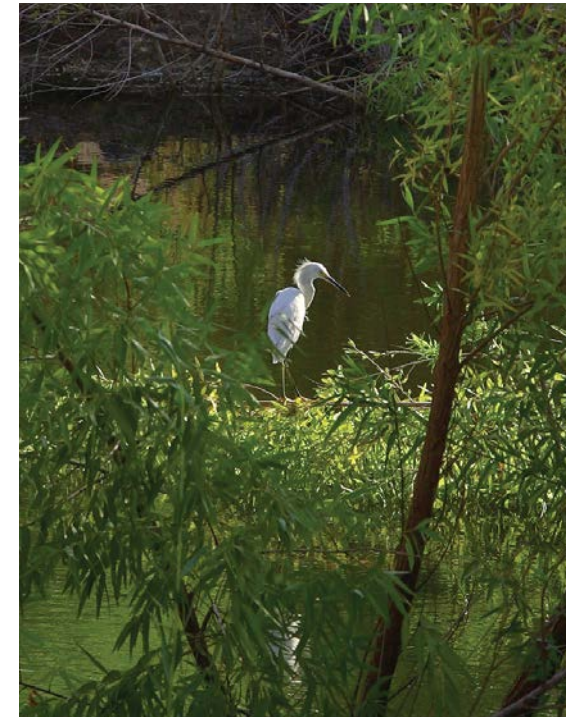
As development continues to take shape in the area, it is important to understand this history and plan for future development that takes this history into consideration. Based on the level of flood risk, future development can provide site design and/or structural improvements to mitigate flood risk. The framework outlined in this document allows for all forms of future development in the corridor.

The *El Rio Design Guidelines and Planning Standards* document encourages future development at an appropriate scale to the level of flood risk and takes the following

objectives into consideration:

1. Minimize the potential impacts of flooding on human health and safety
2. Encourage development in locations with little or no risk from flooding
3. Allow development throughout the corridor, at a scale appropriate to the risk of flooding and mitigation measures
4. Recognize potential for changes in flood risk by considering future, funded local and regional flood improvements

No design or improvement can completely eliminate flood risk in the corridor. Therefore, managing the consequences of flooding is of paramount importance.



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Future development will be guided by these core objectives. Property owners, developers, designers, and contractors proposing new development within the El Rio project area should first determine their location relative to the established floodplain of the Gila River and review the development regulations required by each local jurisdiction. And finally, any development should consult these El Rio Design Guidelines and Planning Standards for further guidance with respect to the interface with the Gila River and specific site design considerations.

Chapter 1 - Background

This section provides an overview of the previous reports that have been completed on the El Rio corridor and clarifies the history of the corridor. It also provides information on land ownership and land use within the project area.

Chapter 2 - Character and Vision

This chapter provides a purpose for the continued efforts relative to the El Rio corridor. This chapter also expands previous efforts to identify and describe twelve (12) distinct character areas that can serve as a planning tool for development. Character Area Planning is the term given to an 'area-based' approach to land use planning. It is a technique that identifies and interprets the notable qualities and historic features that unite like neighborhoods and/or land areas. Recognizing these qualities and features gives the present day landscape a connection to the past while defining a way forward for future development.



The benefits of this approach are many:

1. It enables a community to identify and value its natural, built and social environments, thereby more effectively managing change.
2. It safeguards the natural and historic environment that contributes to an area's sense of place.
3. It enhances the quality places that are important to a community.
4. It is more flexible and business friendly than the conventional approach to planning by allowing design and context to moderate compatibility.

The chapter also builds upon the historic El Rio vision developed in 1999. The vision was articulated in five distinct theme objectives. They include the following:

1. Restore and maintain the natural functions with the river corridor (as a) riparian habitat
2. Focus on multi-use facilities and functions
3. Maintain, enhance or mitigate flood control elements
4. Focus on public/private partnerships
5. Link functional compatibility outside the riparian habitat limits

To build upon this vision this report expands the vision into multiple broad theming guidelines. The approach to applying the vision and theme to the physical elements of the project corridor has to be multifaceted and flexible but based upon, and reflective of, these broad principles.

Chapter 3 - Land Development Guidelines

Because of the corridor's unique riparian setting, development in the corridor should take advantage of active and passive recreation opportunities while respecting the natural setting and being mindful of the inherent risk of flooding. Therefore, all development within the El Rio corridor will provide an interconnected, multi-modal system with a mix of uses and green spaces. The goal of this chapter is to assist in providing guidelines for all development in the project area at a scale appropriate to its proposed location and level of flood risk. All development in the corridor will

link to the El Rio Trail system and the river environment. This interconnected 'ribbon' of green will transform the El Rio corridor into a unified, cohesive setting where residents and visitors can reconnect with nature, pause and enjoy life, and where both natural and human ecosystems can flourish.

The El Rio Land Management and Implementation Guide is established in order to set consistent goals and policies for development, within the corridor and across jurisdictional boundaries. All development within the El Rio corridor should follow the approved General Plan of the applicable local jurisdiction in which the property is located. In addition, development will follow the guidelines in this document which provides a sustainable planning vision that respects the desert southwest environment and enhances and preserves the unique setting of the El Rio Corridor. This is accomplished through the establishment of two planning transects to guide development. The El Rio transects introduced in Chapter 3 are intended to guide future development with the corridor.

The intent of the transect guides is not to prescribe allowed uses, but instead illustrate how different densities and intensities of development should be integrated with each other while respecting and enhancing the unique El Rio environment. This approach allows the full range of land use types, densities and intensities, provided the appropriate mitigation is included with the development.

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There are two (2) transect guides in the El Rio corridor plan; The Viewshed transect and The Flood Risk transect. The intent of the transects is to ensure that the density and intensity of development is appropriate as it approaches the Gila River and as to the level of flood risk. In utilizing the transect guides, proposed development will be reviewed as follows:

1. All property outside the floodplain and within the El Rio corridor should follow the Viewshed transect.
 - a. The Viewshed transect is sectioned into different categories based on the distance from the Gila River floodway.
 - b. In general, as development approaches the Gila River floodway, development should become less dense and intense.
 - c. Development of the property should follow the guidance of the appropriate Viewshed category (i.e., General Urban, Urban Center, etc.)
 - d. However, it is recognized that the Gila River is an attractive amenity; therefore, development adjacent to the floodway may consider more dense and intense development under the River Urban Core development option, provided a detailed development plan is submitted and approved by the applicable jurisdictional entities.

2. If the subject property is within a FEMA designated floodplain, then the development of the property should follow the Flood Risk transect.
 - a. The Flood Risk transect identifies the appropriate type and scale of development for properties within the El Rio Corridor that may be at risk for some level of flooding.
 - b. The Flood Risk transect is sectioned into different categories based on the depth of the base flood elevation. Development of the property should follow the guidance of the appropriate flood risk category (i.e., Regular Floodway, Natural Area, and Transitional Rural Area).
 - c. After determining the flood risk category, proposed development will refer to Table 3.1, The El Rio Corridor Land Use table, for guidance on density and intensity of development.

Where development is proposed within the corridor, suitable mitigation measures should be incorporated within the design to ensure that development is as safe as possible with minimal risk to life and minimal potential for property damage. However, it is important to recognize that design and improvements cannot eliminate flood risk completely. Therefore, where development is allowed, plans/measures must be in place to manage the consequences of flooding and, where necessary, long term maintenance of improvements must be

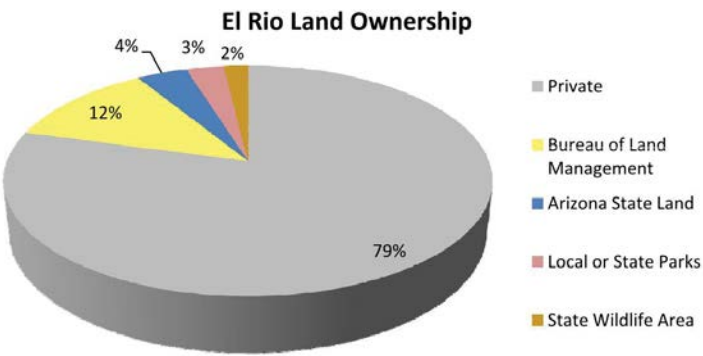
provided, and all proposed development on property identified as 'at-risk' of flooding, should identify and provide means for safe egress in the event of flooding.

Chapter 4 - Open Spaces, Paths, Trails and Edge Treatments

The El Rio project corridor that is adjacent to and part of the Gila River has the rare opportunity of showcasing several unique ecosystems of the Sonoran Desert riverine system while offering the public an opportunity to experience and educate themselves about this vitally important ecosystem. The El Rio project corridor associated with the Gila River includes a beautiful, diverse natural environment. There are natural and man-made challenges to address, but this project offers the opportunity to showcase to the public, through a series of interconnected trails, overlooks and trailheads, the native riparian habitats that were historically associated with the Gila River ecosystem.

These guidelines are meant to provide a means to help in protecting natural and active open spaces associated with the El Rio corridor and provide some guidance in re-establishing these habitats in appropriate areas associated with the Gila River.

These guidelines identify opportunities for recreational uses along the Gila River and the El Rio corridor as some of the key objectives of the El Rio project. While other uses, including land use, zoning and economic development are



Ownership Type	Acreage
Private	26,866
Bureau of Land Management	4,046
Arizona State Land	1,338
Local or State Parks	996
State Wildlife Area	641
Total	33,886

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vitally important, it was envisioned that recreational uses take precedence. The resulting proposed development of the El Rio Trail, trailheads and river access points, while providing links to the existing Maricopa and Sun Circle Trails and proposed parks and trails of adjacent municipalities, would provide valuable amenities to the residents of the West Valley. These guidelines provide the vision for an interconnected El Rio network of connected trails and pathways which will help to encourage public use through ease of access, convenience and safety. To maximize access, all facilities are planned as non-motorized, shared-use/multi-use.

These guidelines include the following:

1. Trail Goals
2. El Rio Trail Design Standards
3. River Access and Trailhead Guidelines
4. Underpass Standards at Roadways
5. Overlook Guidelines

The El Rio Design Guidelines and Planning Standards has an inherent connected series of open spaces based on the watercourse of the Gila River, its tributaries and canals. The land and watercourse interaction provides the opportunities for both the "land side" and "watercourse side" to capitalize upon the inherent assets of each, while meeting the vision and goals of El Rio. This interactive relationship is the "Edge". By defining and instituting The El Rio Design Guidelines and Planning Standards the long term economic viability

of the district will be enhanced.

The "Edge" is the boundary edge condition of the Open Spaces along the El Rio Watercourse that is defined by the floodway edge of the project and its natural embankment or, if applicable, any levee, or created and permitted flood containment structure that creates potential public "Edges" within the defined project corridor. The length of the edge, for a parcel, is the length of the shared boundary between private property and the floodway edge as shown in the Exhibits in Section 4. All property adjacent to

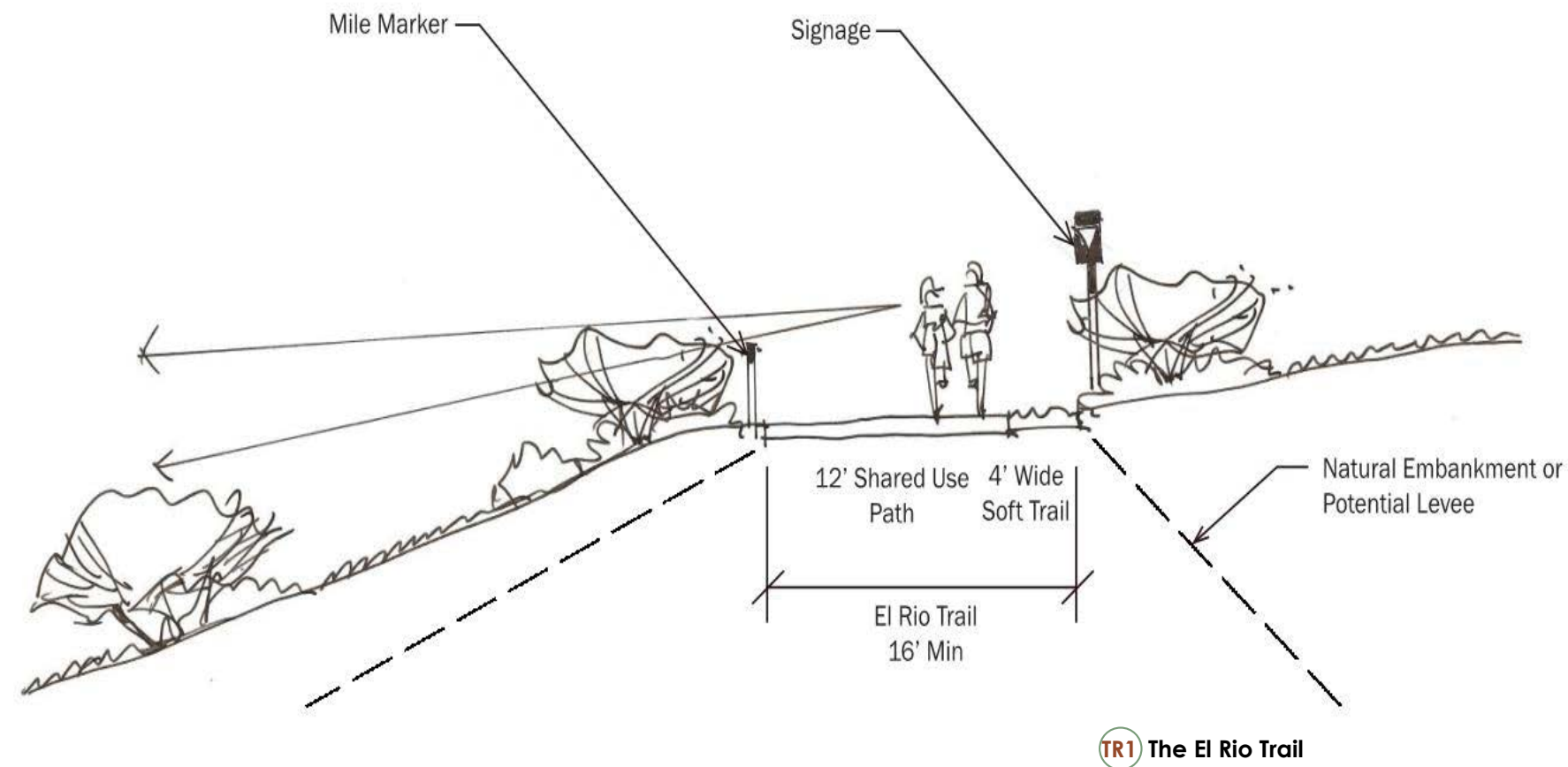
the edge boundary should be subject to "Edge" treatment guidelines establishing an El Rio identity that is both aesthetically pleasing and visually unified.

Chapter 5 - Landscape Guidelines

The El Rio Design Guidelines and Planning Standards were developed to provide a diversity of plant material that can be used outside of the defined floodway to reinforce the low water use native planting habitats that are prevalent within and adjacent to the Gila River's riparian ecosystem. The landscape guidelines

were developed to provide the El Rio project area a unique native plant habitat and overall aesthetic that can transition from the riparian ecosystem to a more robust upland landscape.

These guidelines, and planning standards, have provided an opportunity to define the Gila River as a signature corridor within the communities of Avondale, Buckeye, Goodyear, and portions of unincorporated Maricopa County to serve as a calling card for the region and to establish the El Rio corridor as a catalyst for change. This effort can be highlighted in the El Rio corridor plant



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palette selections for those areas outside of the established floodway. The El Rio corridor plant palette offers an opportunity to accentuate the natural beauty of the region while providing the diversity and flexibility of plant material selections that can transition from the native Gila River habitat to a more structured development aesthetic. The purpose of these guidelines is to document the design criteria for the development of a landscape aesthetic treatment for the El Rio corridor in a clear but flexible format.

The plant palettes provided within these guidelines would allow adjacent development to implement any of the plant habitats described within this document, all dependent upon specific site design issues and the proximity to, or availability of, water. These landscape guidelines were developed to provide the Cities of Avondale, Buckeye, Goodyear and areas of unincorporated Maricopa County with a diversity of plant palettes that are flexible and easily modified for implementation. It would be in the floodway fringe area where development potential exists and where the lower Sonoran and transitional plant palettes described in this section may be most applicable. However, the plant palettes provided would allow adjacent development to implement any of the plant habitats described within this document, all dependent upon specific site location, and the proximity to, or availability of, water.

The goal in establishing these plant habitats and associated palettes is to allow any streetscape, trailhead, trail



corridor, drainage corridor, or adjacent development associated with the El Rio project area the ability to blend and visually connect their specific design with that of the FCDMC El Rio Vegetation Management Plan for the Lower Gila River in Maricopa County, Arizona.

The result of establishing these flexible plant habitats as a platform base in the El Rio Design Guidelines and Planning Standards project results in establishing criteria and baselines for comparison to any planting designs in the project area. These guidelines could easily be modified and adopted beyond established rights-of-way and be used by surrounding development. The goal is to maintain an aesthetic experience for public and private developments that maintains a relationship to the El Rio Design Guidelines and Planning Standards and highlights the importance the Gila River holds to each city's, and unincorporated Maricopa County, development.

The Cities of Avondale, Buckeye, Goodyear and Maricopa County will encourage private development to execute this design theme when developing within the El Rio area. Utilizing elements of the El Rio design theme will reinforce a cohesive development aesthetic for the El Rio corridor. However, should adjacent private developments implement a different identity and character for their specific properties, the El Rio river corridor will sufficiently retain its own identity and visual character through the use of these plant palettes and landscape guidelines.

Chapter 6 - Signage Guidelines

The signage guidelines outline conceptual directions for a signage package addressing the principal sign types of:

1. Orientation and navigation
2. Information/regulation
3. Identity
4. Education



The signage concepts have, in part, incorporated pertinent aspects of the recently adopted MAG Valley Path Brand & Wayfinding Signage Guidelines (Valley Path), so that there is a compatibility between the two and to ensure that the El Rio identity remains primary and Valley Path a sub-set within.

When implementing signs that are contained in the MAG Valley Path Brand & Wayfinding Signage Guidelines, all specifications within that document should be followed, modifying them only as outlined in these guidelines.

There are two (2) concepts for directional, identity and education elements. Concept selection for this signage use is at the discretion of the municipality in which the implementation will occur. It is recommended within these guidelines

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that where those ordinances govern this work, each municipality create an El Rio overlay or similar mechanism so that these concepts can be consistently applied over the entire project area.

Chapter 7 - Economic Development

Economic development opportunities vary by community and will generally be guided by regional assets, adjacent land uses, existing and planned trails and recreational venues, and the specific community's vision. All three cities have existing, or planned, primary trailheads that connect to the river with its vast natural environment and variety of recreational experiences. Each community's vision for capturing economic development opportunities is discussed in this chapter.

The El Rio project corridor is truly a unique treasure in Maricopa County. This portion of the project corridor associated with the river provides habitat for wildlife but also affords a vast array of recreational opportunities not found in other parts of the

Valley, including the potential for boating, fishing, hunting, walking, hiking, bicycling, and horseback riding. This regional resource also offers wilderness areas for passive use, such as wildlife watching. All of these endeavors have the potential to serve as economic catalysts for the surrounding communities.

There have been numerous economic studies prepared by community leaders and planners to understand and document the value of trails, greenways, parks, open space, hunting, fishing and wildlife watching to the local economy. These studies have concluded that trails enhance the quality of life and help build strong economically vital communities. In addition to providing an amenity to residents, trails and linkages to outdoor recreation can also help foster the growth of business, enhance property values, and revitalize neighborhoods. The El Rio corridor provides the same economic engine and potential that has proven successful in other communities.

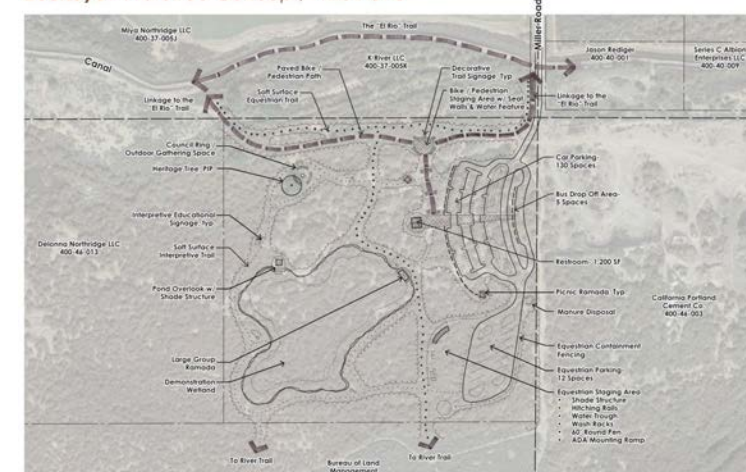
Chapter 8 - Pilot Projects

These guidelines and planning standards include three pilot project sites: one in the City of Avondale, one in the City of Buckeye, and one in the City of Goodyear. They have been selected as pilot project trailheads along the El Rio corridor. The purpose of these pilot projects is to promote environmental education, provide passive human interaction and recreational access to the Gila River along the El Rio trail. Each site selected is unique and provides a wide variety of educational opportunities and both regional and local connectivity. These pilot projects directly connect to other recreational and natural resources in the area and are positioned to serve as templates for future project developments that will enhance the access and usability of this tremendous natural resource.

Avondale - Concept 1, Car and Equestrian Parking



Buckeye - Preferred Concept, "The Pond"



Goodyear - Preferred Concept, "Rio Vista Trailhead"



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