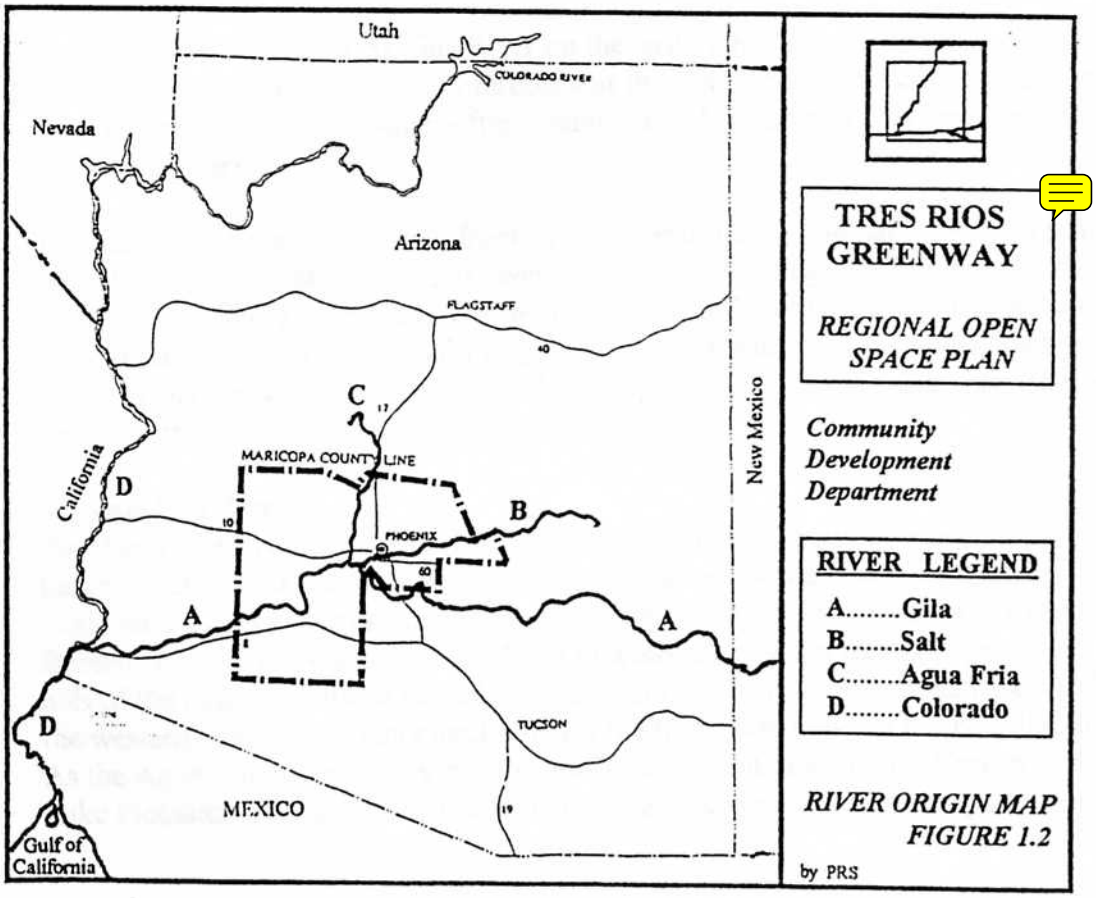
B. History of the Gila, Salt and Agua Fria Rivers

The three rivers that are the subject of the Project are the Gila, Salt and Agua Fria Rivers. Below is a brief history of these three rivers.

1. Gila River

The Gila River is formed in the mountainous region of Silver City, New Mexico. Numerous streams carrying runoff from melting snow merge together to form its origin. From its origin, the Gila River moves in a westerly direction into Arizona, where the San Francisco River feeds into it near Clifton, Arizona. The Gila River continues west, where it is fed by the San Pedro River and continues through the southern portion of Maricopa County. As it moves out of Maricopa County, the Gila River meanders in a southwest direction until it feeds into the Colorado River just north of Yuma, Arizona (see figure 1.2).

The Gila River is often dry, with the exception of effluent water from the City of Phoenix 91st Avenue treatment plant. The amount of rainfall in the central and eastern areas of Arizona also has an affect on the volume of water the Gila River experiences. The confluence of the Gila and Salt Rivers occurs on the east border of Avondale, adjacent to Phoenix International Raceway (P.I.R.) and the Estrella Mountains. The Gila moves towards the West through Avondale, where it is met by the Agua Fria River, south of the populated areas of the City.



Human activity has impacted the Gila River. Mining activities in the vicinity of the Gila River increased at a rapid rate during the 1850s, and thrived throughout the remainder of the 19th century. As mining activities continued into the 20th century, it became apparent that environmental degradation was occurring. Deforested hillsides allowed soil to erode rapidly; leading to drastic flooding of the river's channel in times of heavy rains. In addition, abandoned mines left large scars on the land, destroying the aesthetic value of the river basin (McNamee, 1994).

Other impacts to the Gila River have also been significant enough to completely harness the flow of water in the river channel throughout central and western Arizona. In 1924, legislation authorizing the construction of the Coolidge Dam, southwest of San Carlos, Arizona, was signed into law by President Coolidge. The Coolidge Dam created Lake San Carlos: providing hydroelectric power and recreational opportunities for the region. More importantly, it dictated the water releases into the Gila River -- changing the flows forever (Introcaso, 1987).

2. Salt River

The Salt River begins at the confluence of the White and Black Rivers in the White Mountains of eastern Arizona. In its easternmost reaches, the Salt River drains a rugged mountain region covered by substantial snowpack during winter months. The river flows in a southwestern direction towards Maricopa County and the Phoenix Metropolitan Area. The Salt River meanders through the heart of the metropolitan area, before it ends at its confluence with the Gila River in the southwestern part of Maricopa County.

The Salt River feeds into the Gila River on the eastern border of Avondale, Arizona. Although the riverbed is often dry throughout the year, periods of heavy rainfall require dams upstream to release water, often creating a high volume of flow near the confluence of the two rivers.

The Salt River received its name from an explorer in 1698, who named it from a stretch of saline beds over which it flowed (Powell, 1980). Settlers began to populate in the valley where present-day Phoenix and Tempe rest, and with the growing population came the need for construction of canals for irrigation. This movement was spearheaded in the late 1870s by the Grand Canal Company, who constructed the Grand Canal, diverting water for the northern part of Phoenix (Johnson, 1993).

3. Agua Fria River

The Agua Fria River originates from a series of tributaries north of Humbolt, Arizona. Large tributaries to the Agua Fria are Lynx Creek and Green Gulch from the west side, along with Yaeger Canyon, Grapevine Gulch and Texas Gulch to the East (County Farm Bureau, 1934). The channel of the Agua Fria meanders south through the rolling, grassy hills of the upper elevations into Maricopa County. The river runs directly south through the western half of the county until it meets the Gila River north of the Estrella Mountains. As the Agua Fria River moves into the northwest region of Maricopa County, it spills into Lake Pleasant. The lake is formed and controlled like that of its counterparts along the

Gila and Salt rivers; the Waddell Dam on the end of the lake initiates the respective uses of the water (U.S. Department of Agriculture and Soil Conservation Service, 1977). The Agua Fria continues after the Waddell Dam, meandering south through Surprise, El Mirage, Youngtown, Phoenix, and Avondale. It feeds into the Gila River in the southern part of Avondale.

The characteristics and impacts of the Agua Fria River are similar to those of the Salt and Gila Rivers in Avondale. Like the Salt and Gila, the Agua Fria remains dry through most of the year, and serves as a channel for excess water when heavy rainfall causes the Waddell Dam to initiate releases from Lake Pleasant.

Although very little is known about the early days of settling in the vicinity of the Agua Fria River, it is clear that population growth in the western part of Maricopa County has had impacts on it through the years. A lack of knowledge about the parameters of the floodplain resulted in development occurring in locale's subject to devastation in times of very heavy flooding. As a result of heavy flows in the river channel in 1978, 1979 and 1980, structures built in the floodplain were heavily damaged; contributing to loss of homes, property and in many instances people's livelihoods (MCFCD, 1991).

Following these events, measures were taken to contain the Agua Fria channel. Several agencies in Arizona initiated impact studies to find out what methods should be used to alleviate future flooding. The Arizona Department of Transportation (ADOT) spearheaded the movement by recognizing that channeling of the riverbed was necessary to protect the I-10 Freeway crossing in Avondale (MCFCD, 1991).

Today, the Agua Fria River, with its rechanneling, can contain excessively heavy flooding. A number of other measures have been taken to ensure control during flooding. For example, soil cement has been put into place to stabilize the banks and protect them against erosion (MCFCD, 1991). The municipalities that border the Agua Fria River are now protected against flooding, as well as the bridges that cross the channel, at several points.

IV. SPECIFIC PLAN ELEMENTS

A. Land Use Element

The primary land use in the Tres Rios Greenway is open space. This is consistent with the General Plan goal of adopting a "wholesome living environment." The planning area will include waterways, equestrian trails, bicycle/pedestrian pathways and activity nodes to be integrated throughout a linear greenway system (see Figure 4.1). There will also be areas planned to facilitate passive recreational uses, including enjoying the views provided by the Estrella and White Tank Mountains, bird watching and contemplation. It is a benefit to Arizona that Avondale contains nearly 30% of its land use as open space; an important goal of the project is to maintain and enhance the quality of life in the City. Provision of and accessibility to these recreational areas and activities should be viewed as Avondale's major attraction for urban growth.

The project's open space commitment is scaled at the regional and community levels. Activities that contribute to the regional open space include bicycle and pedestrian pathways connecting to other municipalities and the regional Sun Circle Equestrian Trail. At the community level, the open spaces of the project will connect to multi-use activity nodes, schools and parks, neighborhoods and employment centers.

Residential and commercial development will be guided by other specific plans to enhance and support the open space system. The Tres Rios Greenway and appurtenant recreational facilities are meant to provide a more livable environment, as well as enhancing adjacent developments. The following components make up the Tres Rios Greenway project.

1. Trails System

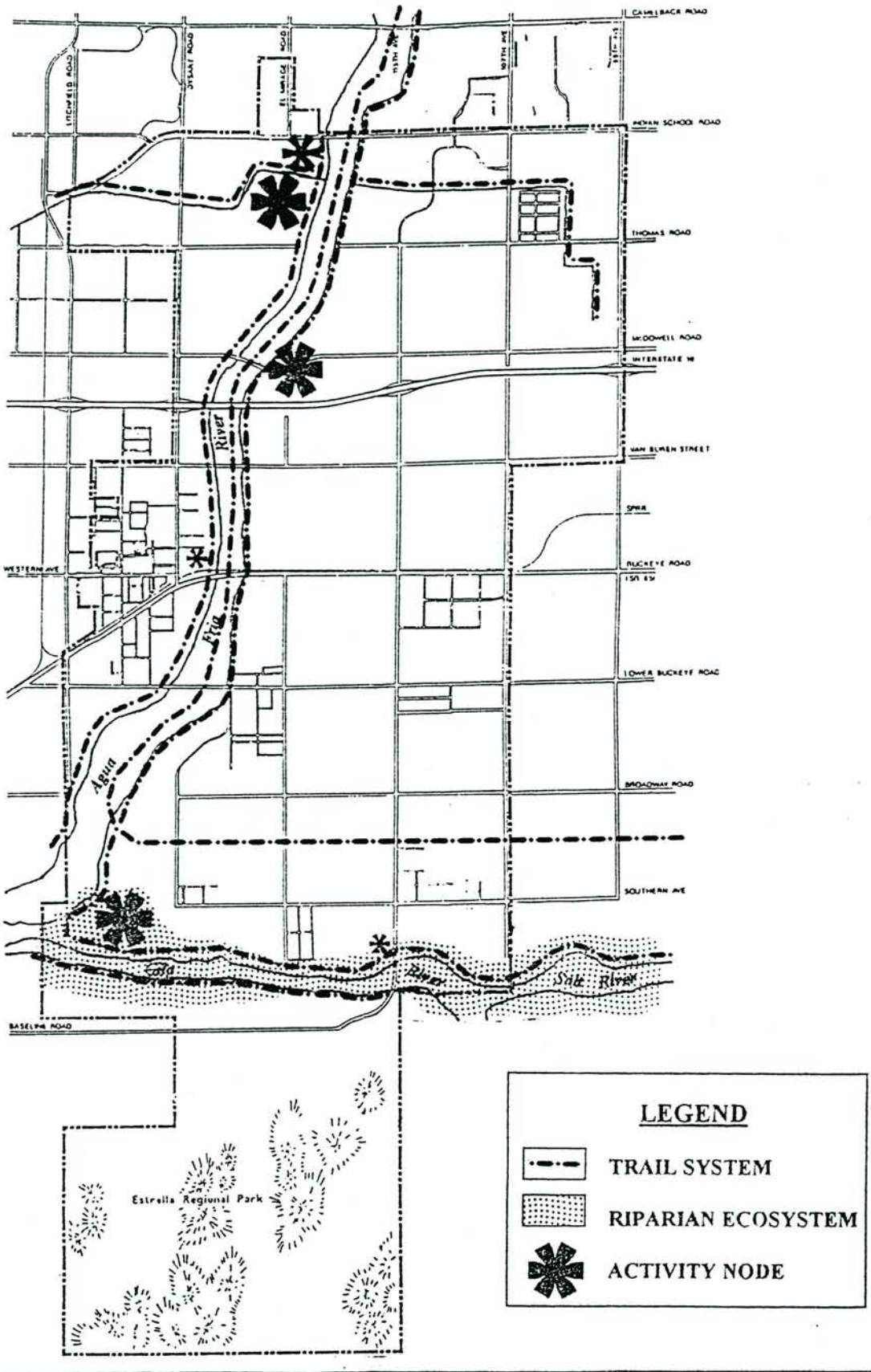
The trails system is the backbone of the Tres Rios Greenway. The accessibility provided by the system allows it to cater to local residents while also connecting people throughout the region. This framework, in conjunction with close proximity to employment and commercial areas, gives people an alternative means of transportation.

2. Activity Nodes

Several nodes exist or are planned within the Greenway area, emphasizing both active and passive recreation to serve a variety of interests. The nodes also serve as gathering places to draw local residents and regional citizens to the Tres Rios Greenway.

3. Riparian Ecosystems

The Salt /Gila corridor contains riparian ecosystems that make it the more vital sphere of the Greenway. These fragile ecosystems must be recognized and respected when considering trail passage through that area of the project.



TRES RIOS GREENWAY

REGIONAL OPEN SPACE PLAN

Community Development Department

by PRS

LAND USE COMPONENTS *FIGURE 4.1*

0 1 2

SCALE IN MILES