



The **EL RIO** Vision

Multi-Agency Review and Response to Planning
and Policy Opportunities on the Gila River



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I. EXECUTIVE SUMMARY – EL RIO

MISSION STATEMENT OF THE PROVISIONS

**Restore the river,
Retain heritage landscape character,
Focusing on multiple use,
Linked to the surrounding communities, through
public – private partnerships
While enhancing public safety with flood control
measures.**

PREFACE – 17 MILES OF NATURAL WATERCOURSE RESOURCE

The importance of water in Maricopa County has not gone unnoticed by public officials. To allow citizens to enjoy this natural resource, they have supported many long-term and relevant water resource planning studies and projects, among them the East Maricopa Floodway Mitigation and Multiple Use Study, the Tres Rios 91st Avenue Demonstrated Wetlands Reclamation Project, the Rio Salado Project, and the Tempe Town Lake. Now those who have enjoyed the unique beauty and character of the Gila River are organizing for a similar study to provide a watercourse master plan.

Unlike some waterways in Maricopa County, the Gila River from the confluence of the Agua Fria River to State Route 85 crossing has not been razed by ill-thought and sporadic development, or known hazardous materials dumping activities. However, with current development pressures, and the still-fresh memory of flooding events of 1978, 1980, and 1993, the compulsory need to mobilize resources is evident. It is only a matter of time before development pressure will harm this area. A concerted planning effort could protect this irreplaceable natural resource.

HISTORICAL BACKGROUND

The Gila River has been the subject of many studies. The Studies have included flooding events as early as 1891; hydrologic and environmental changes caused by development, and flood control and irrigation structures constructed in the watershed; and the introduction of non-indigenous species.

In 1987, more than 20 different municipalities, agencies, Native American Communities, jurisdictions, and other user groups expressed interest in examining a 93 mile reach along the Gila and Salt River from the Granite Reef Dam to approximately Painted Rock Dam. Under the leadership of the Flood Control District of Maricopa County, these Stakeholders initiated plans for the implementation of a Watercourse Master Plan for the planning, development, and environmental protection of the 97-mile reach.

The goal was to be advanced in a two step process. The District would award a contract to complete mapping and floodplain delineation, then develop a Watercourse Master Plan and regional environmental impact statement based on the findings from the initial contract.

During the development of the scope and fee estimates for the Watercourse Master Plan, it became apparent that the cost was significantly larger than originally estimated. The scoping process was suspended and alternative Master Planning efforts were identified with associated costs ranging from a limited Watercourse Master Plan at approximately \$3 million dollars to the Comprehensive Master Plan at a cost of \$20 million dollars. The Stakeholders opted for the moderate Master Plan option at an estimated cost range of \$4 to \$7 million dollars. A scope of work for this plan was developed but never implemented due the lack of a cost-sharing agreement by the Stakeholders.

CURRENT PROJECT BACKGROUND

A Watercourse Master Plan along a smaller 17 mile reach of the Gila from the Agua Fria / Gila River Confluence to the State Route 85 Bridge has been rekindled. Maricopa County Supervisor Mary Rose Wilcox, the City of Goodyear, the Town of Buckeye and the City of Avondale are spearheading an effort to create a Master Plan along this stretch of the Gila River. They are backed-up by other local municipalities, agencies, Native American communities, developers and environmental groups.

On July 27, 1999, the local jurisdictional stakeholders were invited to a coordination meeting sponsored by Supervisor Wilcox to discuss how to best to proceed with the project. The group agreed to ask for the assistance of the Corps of Engineers. This agency had recently performed a Reconnaissance Study for a similar project, Tres Rios, which is located immediately upstream.

On August 3, 1999 the jurisdictional stakeholders formally signed a letter to the Corps requesting the Reconnaissance Study for the 17-mile stretch of river (see appendix No. 1). Additionally, the group agreed to hold two meetings to refine the vision for the project and to provide a name for the project.

On August 31, the first of the two workshops were held and the project name was selected as **EL RIO**. Five broad project object themes, the "Project Vision", were agreed to through group consensus.

The stakeholders developed concepts and goals that could be used though-out the 17-mile project reach for presentation to the public during a two-day workshop held Oct. 6-7, 1999. Additionally, the group developed a proposed organizational structure, a rough time line to implement the project and a set of action items for the group members. They identified agencies and groups which should be involved in the planning process and defined project objectives consistent with the Corps mission.

THE VISION

Through the meetings and workshops, the stakeholders have shared their visions of the project within their area of influence. In the first workshop the stakeholders were requested to present these ideas to the group. It was anticipated that there would be some conflicts between the individual stakeholder ideas and the resources available. This never came to fruition. Everyone expressed similar themes and desires, thus creating common unity and bond for this project. The essence of this unified Vision for the El Rio Project was simply stated in the initial letter to the Corps of Engineers:

"The Gila River has the potential to be restored, enhanced and to provide multiple uses such as ecosystem restoration, water quality improvements, flood control, natural environmental recreation experiences, and other recreational opportunities."

CALL TO ACTION

Time is of the essence in moving forward with the El Rio Vision. Before the explosive population growth and new environmental issues impact the area, prudent leadership will shepherd the El Rio Project to the next logical step – the development and sanction of a Gila River Watercourse Master Plan.

The physical constraints and opportunities incumbent in planning this natural resource will need to be carefully balanced with the political body and private enterprise. Through a broad-based and solicitous public relations campaign designed to enlist the residents, politicians and business leaders of the West Valley, the foundation laid by the El Rio Vision effort will move forward.

The following report is a summary of the process and the outcome of a series of public-private dialogues designed to engage the stakeholders along the Gila River.

II. EL RIO PAMPHLET

At the request of the stakeholders a promotional pamphlet was developed to identify the general area and general concepts of the El Rio Vision. The following pamphlet was developed within these parameters for presentation to the public, but not provide the public with a preconceived plan.

III. Federal Involvement and Public Benefit

CORPS OF ENGINEERS

Stakeholders agreed at the first coordination meeting that this project should include a partnership with the Corps of Engineers. Members realized from past endeavors that the Corps' financial commitment to the project alone was significant justification for a partnership. The Corps is also recognized as having expertise in developing watercourse master plans.

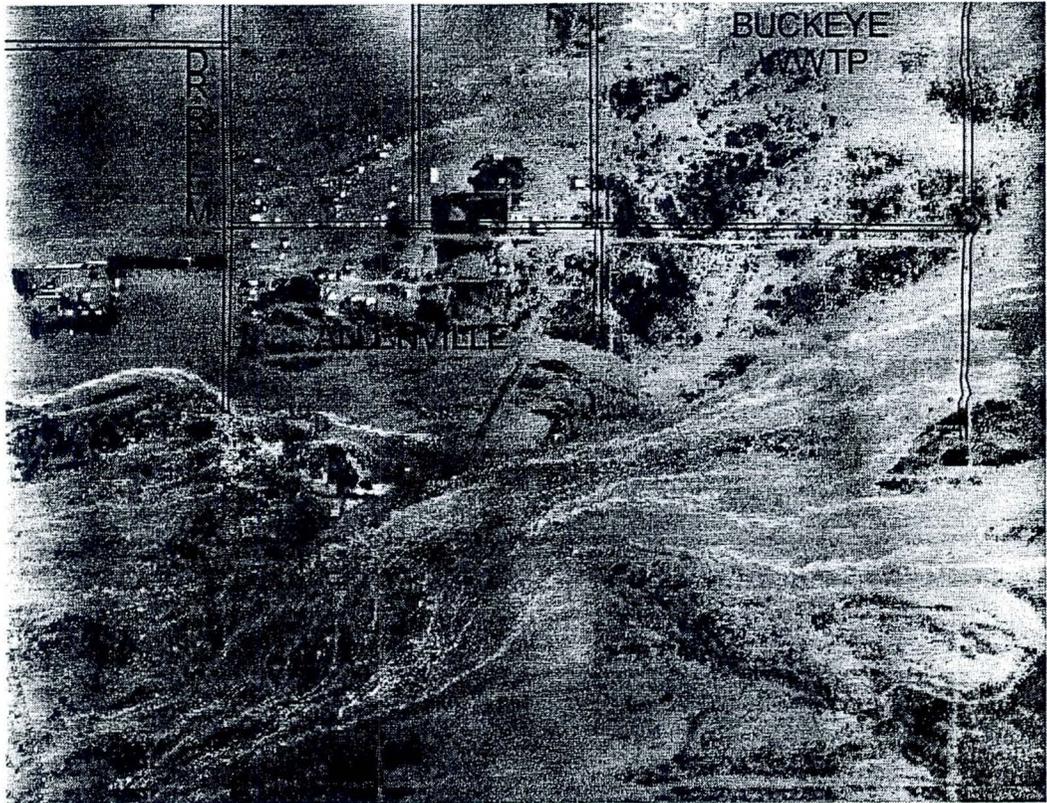
To solicit the project to the Corps, the project must meet the Corps mission of flood control and environmental restoration project elements. All other project objectives must either be incidental to these two objectives or be borne totally by the stakeholders. Additionally, there must be a positive and greater than one cost-to-benefit ratio for any flood control feature.

Flood Control

To justify the Corps involvement in the flood control aspects of the El Rio Vision one must just review the past. The Gila River within the project area has been subject to many flooding events since the turn of the 20th century. Floods have severely damaged property and disrupted the local commerce. The following is a chronology of some of the Significant Flooding Events:

- 1891 - On February 21 and 22 the "Grand-daddy of all floods" occurred on the Verde/Salt/Gila Rivers. This is still the maximum flood of record for Maricopa County and had estimated 300,000 CFS flow in the Gila River.
- 1916 – The Verde River, a tributary of the Gila River, experienced severe flooding.
- 1923 – The Verde and Salt Rivers, both tributaries of the Gila River, sustained severe flooding.
- 1951 – Goodyear, Avondale, and the Harquahala Valley saw significant flooding.
- 1972 – Extensive damage due to flooding in Phoenix.
- 1980 – Flooding on the Gila caused the loss of a number of bridge crossings. These were mainly on the Salt River.
- 1983 – Massive storm to the south brought floodwater north along the Gila River to Maricopa County.

- 1993 – Major flooding on the Verde River, the Hassayampa River. The Gila River breached Gillespie Dam. A federal disaster was declared.
- 1999 – El Rio stakeholders identified the Town of Buckeye as having a particular need for some type of flooding mitigation measure to prevent future flooding similar to that shown in the photograph below of the flood event that required the relocation of Allenville and the installation of dikes around the Buckeye Wastewater Treatment Plant.



Current Flood Control Efforts

Recognizing the need to implement flood control measures in the West Valley, the District has initiated various planning studies. These will develop guidelines for the multiple jurisdictions for implementing regional flood control projects through out the watershed upstream of the El Rio project area.

Given the pressures of development in the West Valley and the increased needs for health and safety measures on the Gila River, the window for proactive planning is narrowing.

Environmental Considerations

In the letter sent to the Corps, the stakeholders indicated that the Gila River in the project area had environmental concerns. These issues were expressed in detail in the October 6th and 7th meeting, which included such issues as unauthorized activities, environmental restoration, and river degeneration.

The specific problems identified for consideration under the Corps mission object are as follows:

1. Environmental Restoration.
2. River degradation.
3. Removal of non-native plant species, such as Salt Cedar.
4. No native fish
5. Unreliable water source
6. Unauthorized land uses such as illegal dumping and uncontrolled off-road activities.
7. Development pressures will continue and intensify with rapid growth of the Phoenix valley.

As point of fact, the Corps conducted a study in 1972 and 1973, Environmental Study – Gila River from the Confluence of the Salt River Downstream to Gillespie Dam, which confirms the above environmental impacts. A composite listing of the Vegetation and Animal life Inventory under this Study is included as an attachment to the report. (Please note that this study indicates that there are two types of native fish still with in the project area out of 15 species instead of the NONE indicated by the group.)

Corps of Engineers Project Planning & Implementation Process

The Corps has strict guidelines for proceeding with projects. As initially indicated the project must meet the goals and objectives of warrant federal participation. This process can be broken into two phases. The Study Phase is composed of two major studies, Reconnaissance and Feasibility. The second phase is the Design and Construction Phase.

The first study the Corps conducts will determine if there is any federal interest in the project. This Reconnaissance Study has six major tasks, which are as follows:

1. Determine if the water resource warrant federal participation in the next study phase, Feasibility Study.
2. Define the **FEDERAL INTEREST** of the project based on preliminary appraisal consistent with Army policies.
3. Prepare a project Study Plan.
4. Assess the Level of non-federal interest.
5. Develop and complete the Reconnaissance Report.
6. Negotiate cost shares with the stakeholders for the next study, Feasibility.

The second step of the study phase is the Feasibility study. This study will recommend a plan of action, include feasibility level estimate for the recommended plan, and include an Environmental Impact Study (EIS).

The second phase of the Corps process is the implementation of the project by performing the design and construction. This phase will be based from the feasibility study and will require cost participation from the stakeholders. Additionally, the design and construction may be phased over multiple year duration.

PUBLIC BENEFIT

The public benefit of implementing the El Rio vision is the restoration of an irreplaceable natural resource. This resource would benefit the public in many ways:

- As an educational tool. Interpretive hiking trails and educational centers could be placed along the banks.

- As a multi-use facility. Cities could integrate recreational facilities and trails along the Gila River. They could also designate fishing and hunting areas.
- As a water quality enhancement source. The inclusion of wetlands and open flow channels would assist in this effort.
- As a flood control facility. The continuous open flow channel and levies would alleviate flooding in the area.
- As a model of environmental restoration. El Rio will provide a continuously flowing river and reintroduce native species to the area.

IV. Organizational Structure

In the course of the El Rio Vision workshop process it was discussed as to what the organizational structure should be and when should it be formed. The 'when' part of the question was answered unanimously by the group; it should be implemented as soon as possible and became an action item of the October 6th and 7th visioning meeting.

The organizational structure suggested by Goodyear City Councilman Jim Cavanaugh had a three-tier structure and was similar in nature to the organizational structure being used by Tres Rios Project. The only comment to this organizational structure was how many participants and who they would be in the Executive Level. It was suggested that all principle stakeholders be allowed to participate at this executive level, but other comments indicated that the number of stakeholders should be limited so that decisions could be implemented in a timely fashion. The following is a summary of Mr. Cavanaugh's suggested organizational structure:

I. Executive Level – First Level

Included organizational leaders who could access funding and are a stakeholder

Would make all final decisions.

Would meet on a semi-annual basis.

II. Steering Committee

This committee would be made up the technical experts and stakeholders representatives.

Would meet on a monthly basis for the duration of the project to update their respective organization and help define the project.

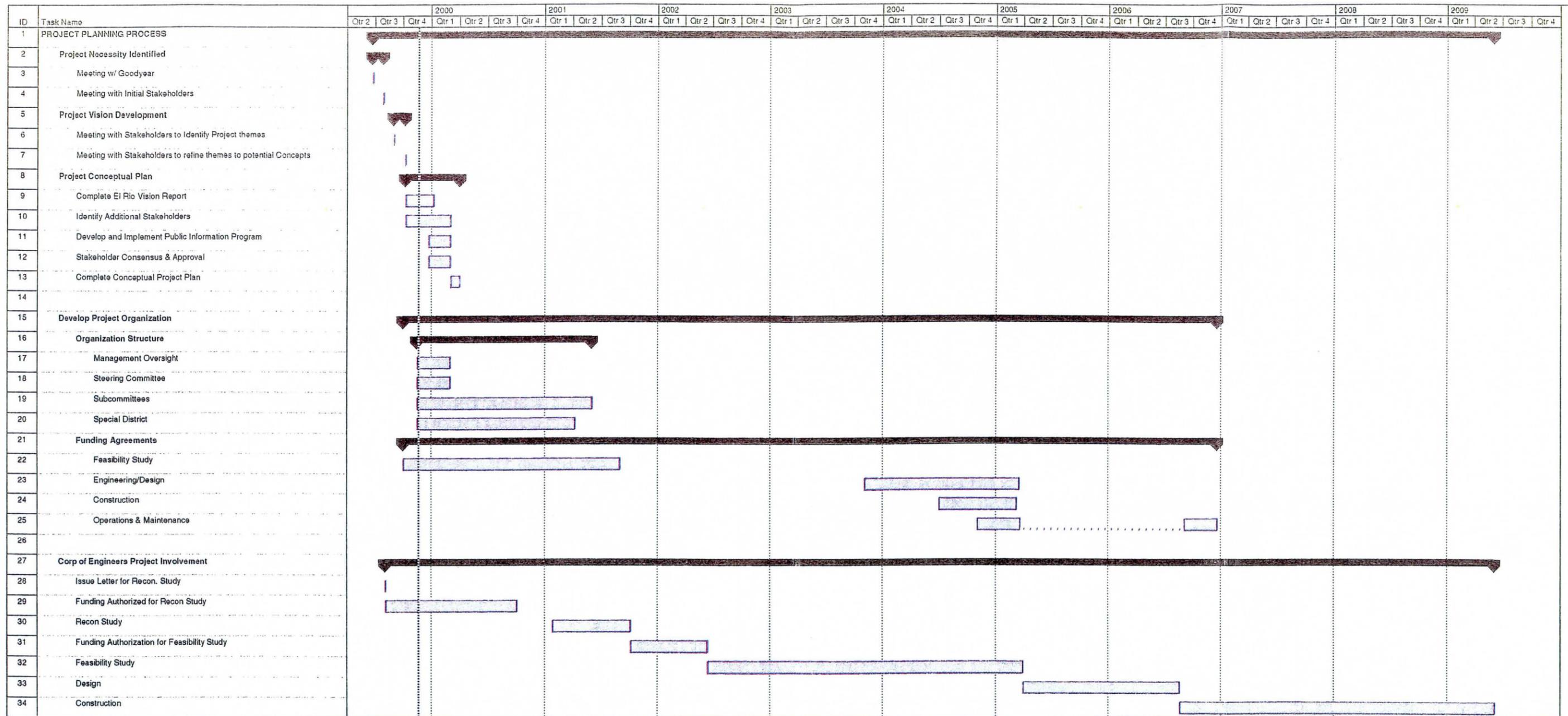
Would initiate and assign members to technical ADHOC committees on an as-needed basis.

III. Technical ADHOC Committees

This subcommittee would resolve specific tasks assigned by the Steering Committee and present those finding back to the Steering Committee.

V. Projected Project Implementation

As a task assignment from the October 6th and 7th meeting, the District was to prepare an implementation plan. The following plan is based on the Corps of Engineers participation and the subsequent time line for implementing this process.



| ID | Task Name | 6/20 | 6/27 | 7/4 | 7/11 | 7/18 | 7/25 | 8/1 | 8/8 | 8/15 | 8/22 | 8/29 | 9/5 | 9/12 | 9/19 | 9/26 | 10/3 | 10/10 | 10/17 | 10/24 | 10/31 | 11/7 | 11/14 | 11/21 | 11/28 | 12/5 | 12/12 | 12/19 | |
|----|--|---------------|------|-----|------|------|------|-----|-----|------|------|------|-----|------|------|------|------|-------|-------|-------|-------|------|-------|-------|-------|------|-------|-------|-------------|
| 1 | PROJECT PLANNING PROCESS | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 2 | Project Necessity Identified | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 3 | Meeting w/ Goodyear | [Milestone] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 4 | Meeting with Initial Stakeholders | | | | | | | | | | | | | | | | | | | | | | | | | | | | [Milestone] |
| 5 | Project Vision Development | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 6 | Meeting with Stakeholders to Identify Project themes | | | | | | | | | | | | | | | | | | | | | | | | | | | | [Milestone] |
| 7 | Meeting with Stakeholders to refine themes to potential Concepts | | | | | | | | | | | | | | | | | | | | | | | | | | | | [Milestone] |
| 8 | Project Conceptual Plan | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 9 | Complete El Rio Vision Report | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 10 | Identify Additional Stakeholders | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 11 | Develop and Implement Public Information Program | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 12 | Stakeholder Consensus & Approval | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 13 | Complete Conceptual Project Plan | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 15 | Develop Project Organization | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 16 | Organization Structure | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 17 | Management Oversight | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 18 | Steering Committee | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 19 | Subcommittees | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 20 | Special District | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 21 | Funding Agreements | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 22 | Feasibility Study | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 23 | Engineering/Design | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 24 | Construction | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 25 | Operations & Maintenance | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 27 | Corp of Engineers Project Involvement | [Summary bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 28 | Issue Letter for Recon. Study | | | | | | | | | | | | | | | | | | | | | | | | | | | | [Milestone] |
| 29 | Funding Authorized for Recon Study | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 30 | Recon Study | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 31 | Funding Authorization for Feasibility Study | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 32 | Feasibility Study | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 33 | Design | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 34 | Construction | [Task bar] | | | | | | | | | | | | | | | | | | | | | | | | | | | |

VI. Visionary Meetings and Workshops

SUMMARY OF AUGUST 3, 1999 MEETING

In an effort to unify community resources in identifying the constraints and opportunities presented by the Gila River, the Flood Control District of Maricopa County hosted a series of comprehensive meetings during the summer of 1999. Stakeholders on the Gila River corridor were invited to attend the first of these discussions on August 3.

Los Rios and Pasajes del Rio were suggested as names for the project. Additionally, participants defined the need for a community-wide, comprehensive approach to planning and policy development for the West Valley.

A schedule of project vision workshops were decided upon, with the first all-day workshop session planned for August 31, and the second, for October 6 and 7th. Ultimately, the number of identified stakeholders grew to over 20 which included multitude of agencies (See Appendix No 8, for list of Identified Stakeholders), municipalities and private sector individuals that should contribute to the overall planning and policy development discussions.

The responsibilities and concerns of the multiple stakeholders commanded most of the discussion in this first meeting. It was the consensus of the group that with its mandate, mission and resources, the Army Corps of Engineers would be a desired partner in resolving the issues of health and safety presented by flood control and environmental restoration needs on the Gila. To that end, all workshops have included representatives of the COE and have focused a good deal of the dialogue toward understanding and meeting the objectives of the Corp.

The group dismissed with assignments to:

- Further identify additional stakeholders
- Enlist the support and attendance of these additional stakeholders at the next meeting

- Give thought to funding processes applicable to further study efforts
- Think of theme statements for project definition, referred to at this point as 'Los Rios'

THE FIRST WORKSHOP AUGUST 1993

The first project vision workshop was held at the Durango conference room, and welcomed a broad base of community support, as 19 attendees made their time available for the full day workshop. After welcoming remarks, Renee Hoesktra, an independent facilitator for the event, introduced the project partners and shared the process by which so many minds would come together in this uncommon effort of visioning. Participants included:

- | | |
|--------------------------------------|----------------------------------|
| Arizona Game and Fish | Arizona House of Representatives |
| Buckeye Irrigation Company | City of Avondale |
| Town of Buckeye | City of Goodyear |
| Flood Control District | Gila River Indian Community |
| King Ranch | Maricopa County Parks |
| Maricopa County Board of Supervisors | U.S. Corps of Engineers |

The stakeholders were afforded a ten minute introduction of themselves, their agency/entity/interest and expressed their expectations for the workshop and the ongoing visioning process. Expressed during this time were recurring statements of the need to work as a team in approaching the planning/policy process; the opportunity to effect a lasting and positive outcome *because* of this process; and the expectation that all involved would subordinate individual interests in the name of the common good — that which is best for the Gila River and her adjoining communities.

The afternoon was spent in consolidating and developing an overriding project vision. That vision was articulated in five theme objectives. Many additional names for the project were offered and by blind vote, the project name became 'El Rio', Spanish words for 'The River.'

Future activities were to be focused in three efforts:

- Conduct a vision articulation workshop. This was proposed as a two-day duration workshop with the outcome quantifiable in a specific product
- Maintain ongoing efforts to identify possible other stakeholders and invite their participation
- The Underscored the need for team effort by Supervisor Mary Rose Wilcox, the leading political voice.

The group expressed thanks to the Flood Control District of Maricopa County for bearing the cost to host the workshop and for their continued leadership in mobilizing these discussions.

WORKSHOP: OCTOBER 6-7, 1999

Day 1, October 6, 1999

The most comprehensive workshop to date outlined an aggressive agenda (see Appendix No.5) and focused on soliciting from the entire group, responses to the five project themes or objectives previously identified in the August 31, 1999 workshop. These five objectives were to be reflected into two end products: a conceptual Master Plan for El Rio and an Executive Summary of the process employed, and the responses engendered by the stakeholder group at large.

After introductions and a recapping of the project work-to-date, Gregory Jones of the District was charged with stating the purposes of the meeting and outlining the desired outcome of the two day session. The District presented the leadership vision and process by which the workshop would be governed. Three key goals were stated:

- Develop a concept plan for the Gila River that would successfully direct the Corps of Engineers to undertake the Reconnaissance Study;
- Develop an action plan, based in part on the consolidated conceptual vision
- Develop a list of involved entities to assist in implementing the action plan

The District conducted a thorough exercise leading the group to identify the existing conditions in and along the Gila River, so that all attendees a clear understanding to the Gila River Area. The presentation included

included the natural character, topography, transportation, land uses, environmental issues and a flooding history of the Gila.

Geza Kmetty, facilitator for this workshop, directed the group through a review of goals and desired outcomes. The methodology employed to articulate a master concept plan was explained, providing a scope of work for the process. Dennis Holcomb, Landscape Architect with the District, restated the visioning process and the scope of work before the group. In a brainstorming session, he solicited ideas of projects that might contribute to the implementation of the various vision components.

By dividing the group into five sub-teams, greater individual participation was encouraged. Each team was then given a set of tools (drawing tissue, markers and a black and white base aerial photo of the 17-mile Gila River reach) and assigned one of the five objectives to study. In rotation, every 'sub-team' studied all five themes. These objectives were consolidated from the workshop of August 31 and distilled into five planning and policy goals for the stakeholders:

- 1. RESTORE and MAINTAIN THE NATURAL FUNCTIONS WITHIN THE RIVER CORRIDOR (as a) RIPARIAN HABITAT**
- 2. FOCUS ON MULTI-USE FACILITIES and FUNCTIONS**
- 3. MAINTAIN or ENHANCE FLOOD CONTROL ELEMENTS or MITIGATE**
- 4. FOCUS ON PUBLIC/PRIVATE PARTNERSHIPS**
- 5. LINK FUNCTIONAL COMPATIBILITY OUTSIDE THE RIPARIAN HABITAT LIMITS**

Team ideas were committed to paper, in 20-minute study sessions, and at the end of the day, each team's tissue drawings were collected by the District. The consolidated team responses to each of these objectives are represented graphically and with support text in the following Section VI, El Rio Visioning Themes.

Day 2, October 7, 1999

Two comprehensive Power Point presentations were offered to the group; one by Goodyear City Councilman Jim Cavanaugh (See Appendix No.7)

and the other by Sam Arrowood and Mike Ternak of the Corps of Engineers (See Appendix No. 6).

The focus of Cavanaugh's presentation was the process of a suggested Organizational Structure, Executive and Advisory Committees. The group thought that an organizational structure needed to be defined and adopted to address the implementation of the outcome of workshops and study sessions. Additionally, the need for overall committee authority was discussed, along with benefits and possible duties. Suggested format would include exploration of funding mechanisms, an Executive Director, and support committees.

Discussion of a possible organizational structure ensued and the pursuit of this structure was posted by the facilitator as one of many 'action items' requiring follow-through.

The focus of the presentation by the Corps of Engineers was to outline the Corps planning process and to highlight the objectives of the Reconnaissance Study as indicated in their handout of a March 3, 1999 letter on Planning Guidance Memorandum 99-01.

As culmination of three months of workshops, a remarkable piece of conceptual planning was unveiled reflecting a huge effort. The El Rio Vision, Gila River Conceptual Master Plan included the major elements of the team studies and recommendations.

The plan was constructed atop a base of an 8' (foot) black and white aerial photo of the Gila River Reach, with appropriate cities and stakeholders interests identified. The plan represented a summary of possibilities as well as identifying known physical constraints. The possible land use components are represented in Exhibit No. 2.

It is important to emphasize that this is a *Conceptual Illustration* only and to fully develop a Master Plan for the El Rio Vision there must be public involvement and technically based research. Additionally, this *Conceptual Illustration* in no way *represents* the intent of or obligation by any stakeholder.

At the end of the second day, Supervisor Mary Rose Wilcox; Russ Miracle, Planning Branch Manager for the District; and Mike Ellegood, General Manager of the District joined the wrap-up discussions. They were shown a review of the process, the five objectives, the consolidated responses to those five goals and the Gila River Conceptual Master Plan. At the suggestion from Supervisor Mary Rose Wilcox, the discussion and commitment to produce a Project Summary Booklet and Executive Summary suitable to present to the U.S. Army Corps of Engineers was

established as an action item for the District to perform with help from the Stakeholders.

The group distributed assignments:

- The Flood Control District is to produce a summary report.
- The District is to set-up a meeting to discuss organization structure with all of the stakeholders and establish the Oversight Committee (Executive Level). This was agreed to coincide with the final summary report.
- The District is to develop an implementation plan with the final summary report for review. The stakeholders shall adopt this final plan.
- The District is to fully explore the existing problems in the summary report as backup data for the Corps of Engineers involvement in the project.
- District is to identify a consultant and develop a scope of work for a pre-reconnaissance study by the end of November 1999. (After the meeting, there were discussions as to the need for this activity. It was determined that this action item would be revisited after the development of the summary report to see if a pre-reconnaissance study was warranted.)
- Individual agencies and stakeholders are to endorse the management of the individual agencies/stakeholders and provide feedback to Gregory Jones of the District.
- The group is to identify stakeholders/sponsors and a cost sharing methodology for the Feasibility study.
- The group is to solicit Avondale and other stakeholders for involvement in the El Rio Vision. (Avondale has the first segment of the project area under their jurisdiction.)
- Investigate if Buckeye Irrigation Company (BIC) could be a Special District to administer the El Rio Project. (Jackie Meck has sought his legal counsel for advice. His legal counsel indicated that it would not be in the best interest of BIC.) It is still suggested that a Special District be set up to administer this project, but should be deferred to the next meeting.

VI. El Rio Visioning Themes

THE OBJECTIVES TO PLANNING EFFORTS

Five objectives evolved as a result of three months' efforts through workshops, a review of previous watercourse plans throughout the Valley. The group examined the East Maricopa Floodway, the Tres Rios Reconstructed Wetlands Project and the Agua Fria Watercourse Master Plans in particular. They found that a vibrant and sustainable plan for the Gila River would need to incorporate those functions which are natural for healthy waterways and those elements which the local economies would consider desirable and in keeping with key elements critical to planning and policy development.

These five goals should shape any future planning efforts:

- **RESTORE and MAINTAIN THE NATURAL FUNCTIONS WITHIN THE RIVER CORRIDOR (as a) RIPARIAN HABITAT**
- **FOCUS ON MULTI-USE FACILITIES and FUNCTIONS**
- **MAINTAIN or ENHANCE FLOOD CONTROL ELEMENTS or MITIGATE**
- **FOCUS ON PUBLIC/PRIVATE PARTNERSHIPS**
- **LINK FUNCTIONAL COMPATIBILITY OUTSIDE THE RIPARIAN HABITAT LIMITS**

During the October 6TH and 7TH Workshop, the stakeholders identified as many functional components as possible within the framework of each statement. The following sections of this summary provide a recap of each stated objective, as well as the graphic interpretation of that objective or goal. These graphics are not to scale and represent only the previously identified possibilities for each objective. They are not meant to be limiting.

OBJECTIVE NO. ONE

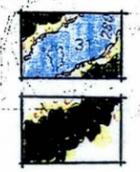
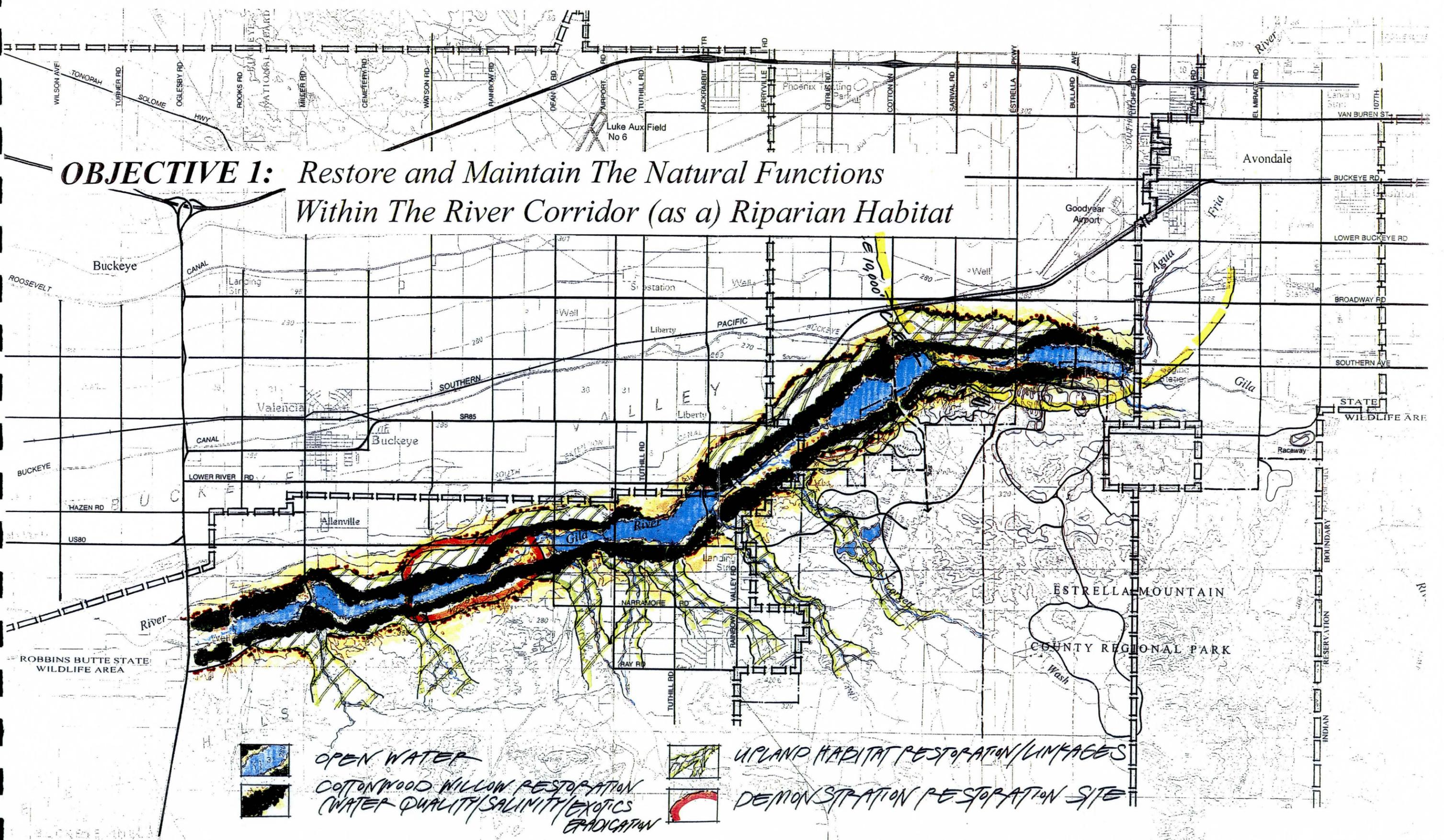
**Restore and Maintain the Natural Functions Within
the Gila River Corridor (as a) Riparian Habitat**

Goals to meet this Objective include:

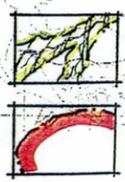
- Create diversity of vegetation
- Restore disturbed areas
- Control undesirable activities
- Incorporate sand and gravel operations
- Attain higher habitat value
- Reintroduce historic landscape character to the river
- Incorporate sediment transport and sand and gravel activity to maintain restoration
- Identify a reference reach within the corridor
- Identify potential 'demonstration' projects
- Coordinate with Tres Rios and Aqua Fria Watercourse Master Plan projects
- Consider aviation impacts to the Goodyear Airport
- Convey flood flows
- Provide open flow throughout the reach

The consolidated visionary workshop effort to graphically depict potential areas where a riparian environment could be established, restored and or maintained is shown on the following exhibit entitled, "Objective No. One - Restore and Maintain the Natural Functions Within the Gila River Corridor (as a) Riparian Habitat."

OBJECTIVE 1: *Restore and Maintain The Natural Functions Within The River Corridor (as a) Riparian Habitat*



OPEN WATER
 COTONWOOD WILLOW RESTORATION
 (WATER QUALITY/SALINITY/EXOTICS
 ERADICATION)



UPLAND HABITAT RESTORATION/LINKAGES
 DEMONSTRATION RESTORATION SITE

Focus on Multi-Use Facilities and Functions

The group of the visionary workshop determined that all multi-use and functions falls within the following three major categories:

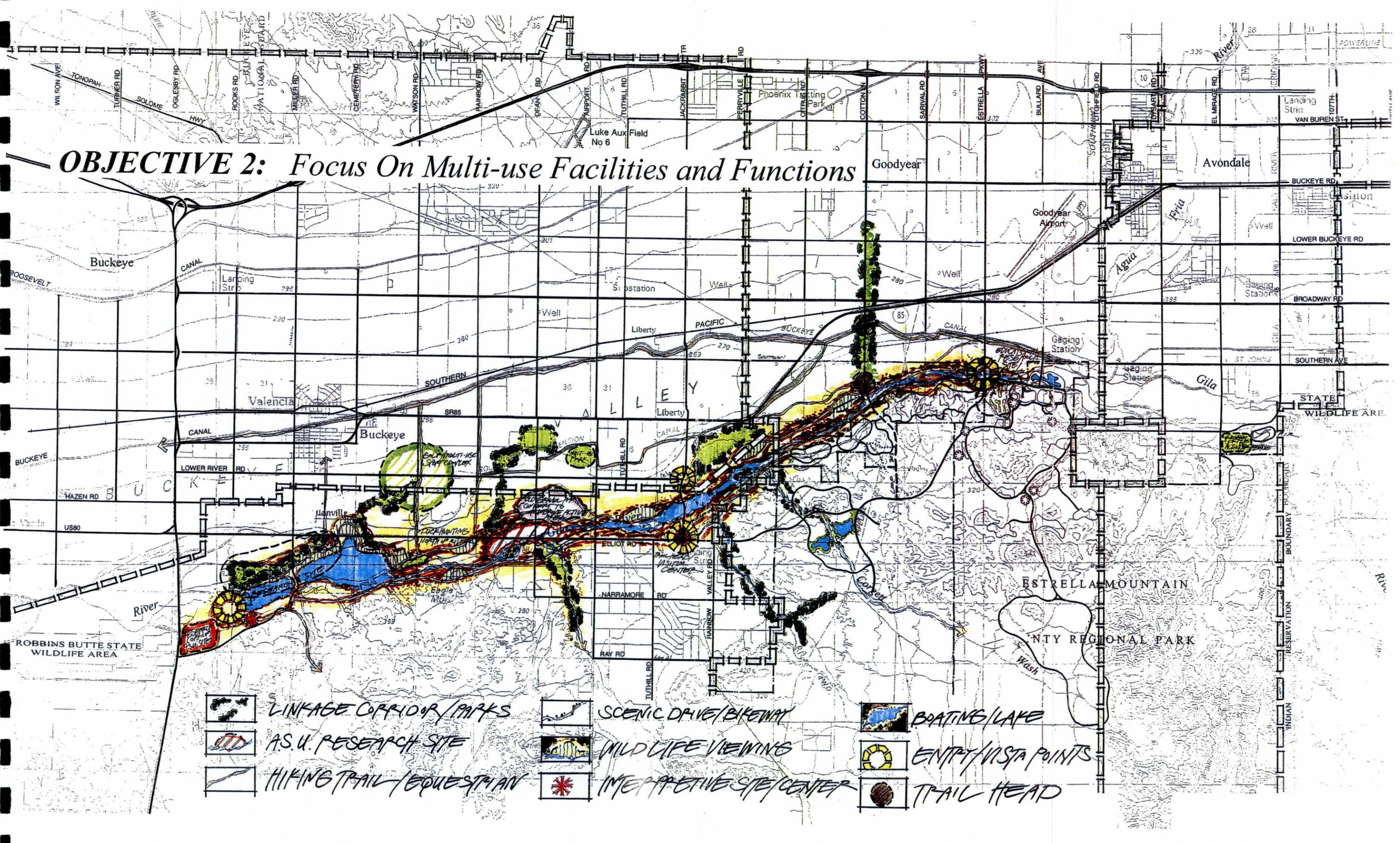
- Recreational
- Education
- Community Needs

Goals to meet this objective include:

- Emphasize community needs
- Educational-interpretive center
- Nature elements such as trails, bird watching, etc.
- Research site (possibly a university under a grant)
- Develop compatible activities/policies
- Mixed use residential plan
- Link up with Estrella Regional Park
- Identify entry points and vista points close to bridges
- Fishing opportunities to be developed
- Improve water quality
- Coordinate plans with transportation corridors
- Potable water supply
- Riverside scenic drive
- Integrate local access with regional network
- River walk
- Bike Paths

The consolidated visionary workshop effort to graphically represent the efforts to address potential areas where a multi-use facilities and functions could enhance the River experience are depicted on the following exhibit entitled, "Objective No. Two - Focus on Multi-Use Facilities and Functions."

OBJECTIVE 2: Focus On Multi-use Facilities and Functions



- | | | | | | |
|--|-------------------------|--|--------------------------|--|--------------------|
| | LINKAGE CORRIDOR/PARKS | | SCENIC DRIVE/BIKEWAY | | BOATING/LAKE |
| | A.S.U. RESEARCH SITE | | WILDLIFE VIEWING | | ENTRY/VISTA POINTS |
| | HIKING TRAIL/EQUESTRIAN | | INTERPRETIVE SITE/CENTER | | TRAIL HEAD |

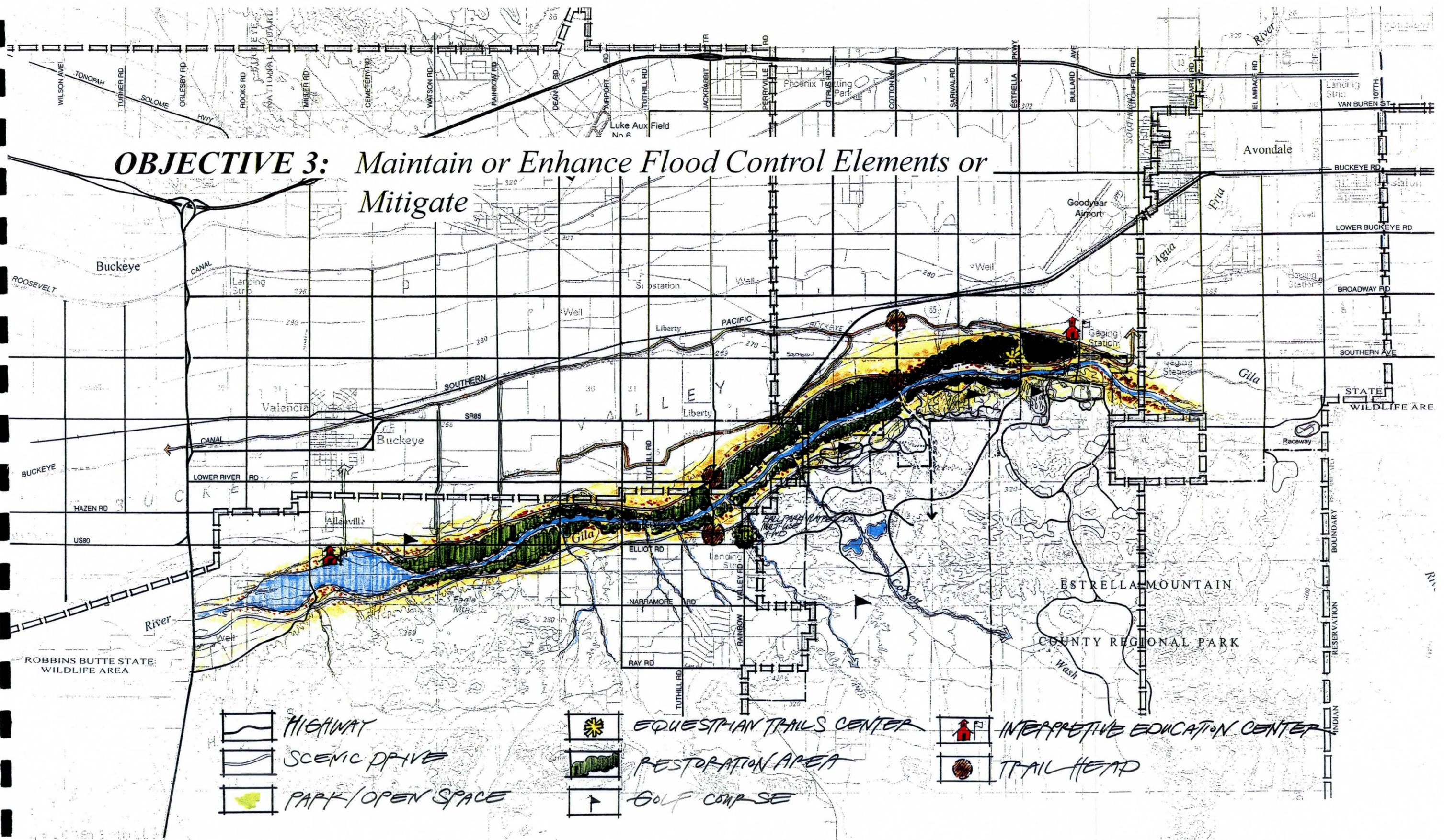
Maintain, Enhance or Mitigate Flood Control Elements

Goals to meet this objective include:

- Remove construction from the River
- Consider over-bank storage (off-line basin, lakes, open space)
- Increased capacity by dredging
- Increase width of river
- Minimize structural solutions
- Protect and/or mitigate existing uses
- Level of protection
- Tributary flows
- Enhance conveyance while also providing flood protection as well as riparian restoration

The consolidated visionary workshop effort to graphically represent the efforts to address potential areas where current or proposed flood control elements would further ensure public health and safety. These included a fundamental assumption of the planning effort that addressed the need for a year-round flow of the Gila River. This is shown on the following exhibit entitled "Object No. Three - Maintain, Enhance or Mitigate Flood Control Elements."

OBJECTIVE 3: Maintain or Enhance Flood Control Elements or Mitigate



- | | | | | | |
|---|-------------------|---|--------------------------|---|-------------------------------|
|  | HIGHWAY |  | EQUESTRIAN TRAILS CENTER |  | INTERPRETIVE EDUCATION CENTER |
|  | SCENIC DRIVE |  | RESTORATION AREA |  | TRAIL HEAD |
|  | PARK / OPEN SPACE |  | GOLF COURSE | | |

OBJECTIVE NO. FOUR

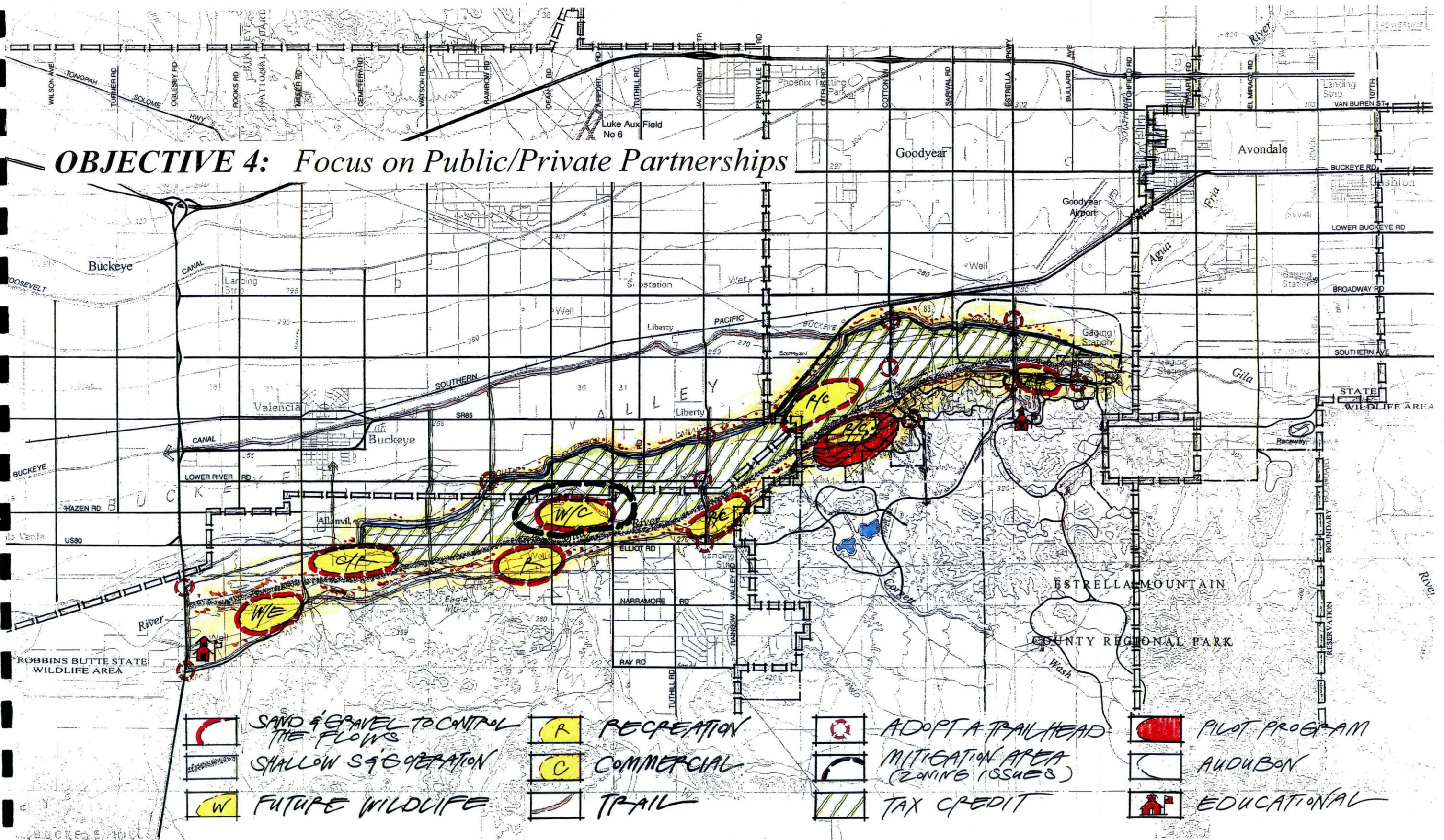
Focus on Public & Private Partnerships

Goals to meet this objective include:

- Utilize/incorporate sand and gravel activities
- Adopt-a-River program
- Ducks Unlimited
- Water brokering (AIC)
- Concessions
- Developer built features
- Provide incentives to promote participation by development community
- Attract grant funding
- Educational/research partners
- Offsite mitigation
- Sustainability
- Canal water features

The consolidated visionary workshop effort to graphically represent the efforts to address potential areas where potential areas where combining resources and goals of the public the private sectors would enhance the Gila River experience for the entire community are depicted on the following exhibit entitled exhibit, "Object No. Four - Focus on Public & Private Partnerships."

OBJECTIVE 4: Focus on Public/Private Partnerships



- | | | | | | | | |
|---|------------------------------------|---|------------|---|---------------------------------|---|---------------|
|  | SAND & GRAVEL TO CONTROL THE FLOWS |  | RECREATION |  | ADOPT A TRAIL HEAD |  | PILOT PROGRAM |
|  | SHALLOW SAND OPERATION |  | COMMERCIAL |  | MITIGATION AREA (ZONING ISSUES) |  | AUDUBON |
|  | FUTURE WILDLIFE |  | TRAIL |  | TAX CREDIT |  | EDUCATIONAL |

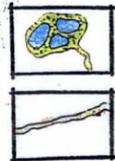
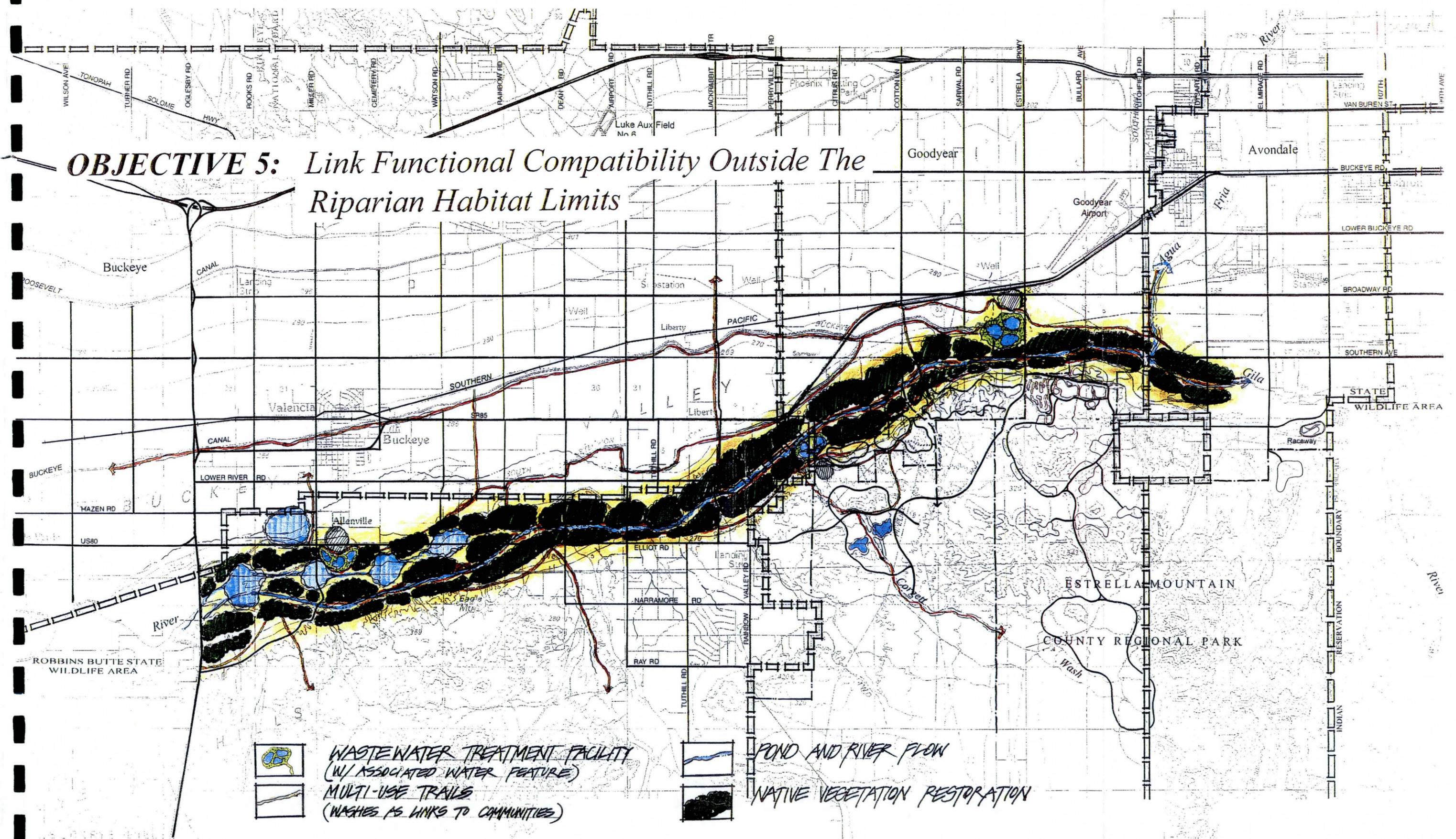
Link Functional Compatibility Outside the Riparian Habitat Limits

Goals to meet this objective include:

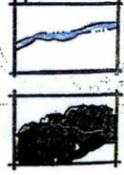
- Make canals/washes a linkage with developments
- Link Estrella Parkway with River corridor
- Loop 303 as access; strategy component
- Help development focus towards the River
- Collaborate with adjacent communities' land use plans
- Consider law and order, security, crime control by local jurisdictions
- Develop management framework for the project, implementation and maintenance
- How to integrate/manage the planning/implementation/maintenance
- Consider special districts
- Consider marketing plan
- Consider financial plan.

The consolidated visionary workshop effort to graphically represent the efforts to address potential areas where linkages to development might be made with the natural habitat based on functional compatibility *outside* the riparian habitat limits are depicted on the following graphical exhibit entitled, "Object No. Five - Link Functional Compatibility Outside the Riparian Habitat Limits".

OBJECTIVE 5: Link Functional Compatibility Outside The Riparian Habitat Limits



WASTEWATER TREATMENT FACILITY
(W/ ASSOCIATED WATER FEATURE)
MULTI-USE TRAILS
(WASHES AS LINKS TO COMMUNITIES)



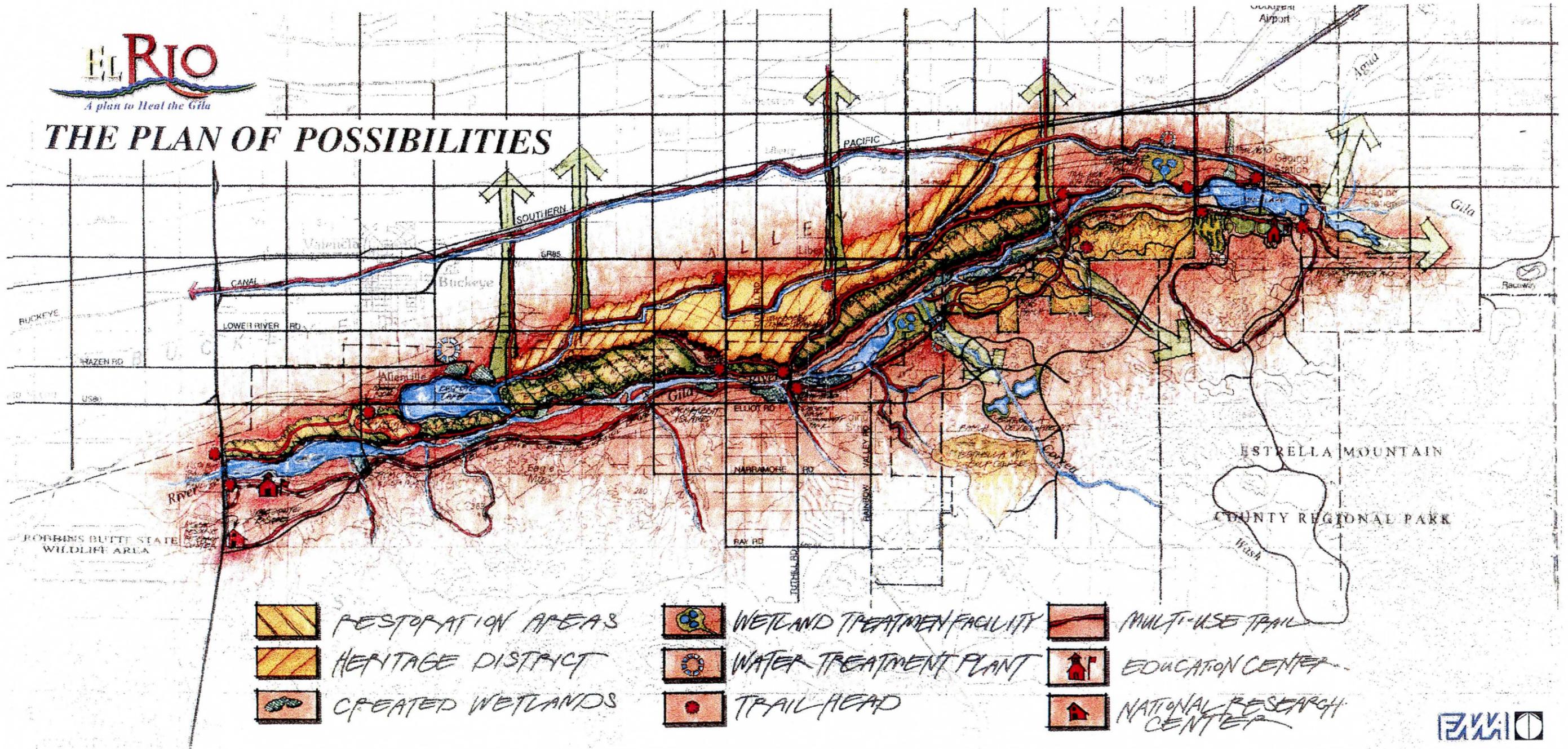
POND AND RIVER FLOW
NATIVE VEGETATION RESTORATION

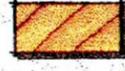
COMPOSITE OF THE THEMES FOR A POSSIBLE CONCEPTUAL
VISION

The five composite themes were consolidated in the visionary workshop effort to graphically represent all the the efforts of the group which is depicted on the following exhibit entitled, "El Rio – The Plan of Possibilites."



THE PLAN OF POSSIBILITIES



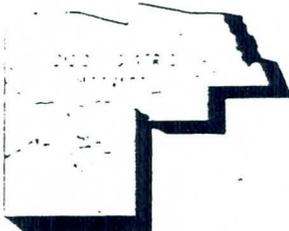
- | | | |
|---|--|--|
|  RESTORATION AREAS |  WETLAND TREATMENT FACILITY |  MULTI-USE TRAIL |
|  HERITAGE DISTRICT |  WATER TREATMENT PLANT |  EDUCATION CENTER |
|  CREATED WETLANDS |  TRAIL HEAD |  NATIONAL RESEARCH CENTER |



VIII. REFERENCES

1. Draft, White Tanks and Grand Area Plan, by Maricopa County Department of Planning and Development, 1999.
2. Environmental Study, Gila River from the Confluence of the Salt River Downstream to Gillespie Dam, 1973.
3. Gila River Basin, Arizona – Section 7 Study for Modified Roosevelt Dam, Arizona (Theodore Roosevelt Dam) – Hydrologic Evaluation of Water Control Plans, Salt River Project to Gila River at Gillespie, Dam, US Army Corps of Engineers, March 1996.
4. Final Report for the Salt-Gila River Watercourse Mater Plan Scoping Project – Woodward-Clyde Consultants – January 31, 1994.
5. Central Maricopa County Drainage Area, Arizona – Reconnaissance Study – US Army Corps of Engineers – June 1992.
6. A Chronology of Significant Floodplain Management Events – By the Flood Control District of Maricopa County.

Letter to Corps of Engineers Dated August 3, 1999.



FLOOD CONTROL DISTRICT
of
Maricopa County

2401 West Durango Street • Phoenix, Arizona 85009-6349
Telephone 602-506-1501
Fax 602-506-4601
TT 602-506-5897

BOARD OF DIRECTORS
Jon Brewer
Fulton Brock
Andrew Nunanen
Din Stapley
Mary Rose Garrison Wilcox

August 3, 1999

Colonel John P. Carroll, District Engineer
U.S. Army Corps of Engineers
Los Angeles District
911 Wilshire Boulevard
Los Angeles, CA 90012

Subject: Request for a Habitat Restorative and Flood Control Reconnaissance Study on the Gila River – Agua Fria River to SR 85 - Maricopa County, Arizona.

Dear Colonel Carroll:

We the undersigned agencies request that the Corps of Engineers (COE) conduct the subject study as located on the attached drawing. This area is immediately downstream of the Tres Rios feasibility study area currently being conducted by the COE and sponsored by the City of Phoenix. The study would provide a continuation of the Tres Rios concept downstream and further COE efforts in river habitat restoration and flood control. Due to the accelerated pace and planning activities for new developments in this area, it is critical to initiate a comprehensive analysis for the watercourse.

The Gila River in this area has the potential to be restored, enhanced and to provide multiple uses such as ecosystem restoration, water quality improvements, flood control, natural environmental recreation experiences, and other recreational opportunities. We have had conversations with your local COE staff, and we are requesting the subject study to be included in the COE budget and initiated as soon as possible in the fiscal year budget 2000 or 2001. We look forward to working with you and your staff in this very important and timely project.

Sincerely,

Mary Rose Wilcox
Supervisor, District 5
Maricopa County

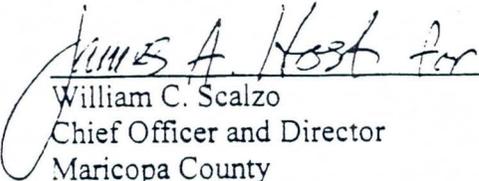
Dustin Hull
Mayor of Buckeye

William Arnold
Mayor of Goodyear


Thomas F. Morales, Jr.
Mayor of Avondale


Jackie A. Meck
Buckeye Irrigation Company


Michael S. Ellegood, P.E.
Chief Engineer and General Manager
Flood Control District of Maricopa County


William C. Scalzo
Chief Officer and Director
Maricopa County
Department of Parks and Recreation

Enclosure

cc: Senator John McCain
Senator Jon Kyl
Congressman Matt Salmon, District I
Congressman Ed Pastor, District II
Congressman Bob Stump, District III
Congressman John Shadegg, District IV
Congressman Jim Kolbe, District V
Congressman J.D. Hayworth, District VI

Minutes of July 28, 1999 Meeting.

Minutes OF "LOS RIOS" Mtg.
JULY 28,1999 @ 1:00 PM

Subject: Coordination Meeting between County Supervisor, the Flood Control District Of Maricopa County, Parks and Recreation Department of Maricopa County, the City of Goodyear, the City of Buckeye, the Buckeye Irrigation District, and King Ranch – Gila River Restoration – Bullard Road to SR 85.

The meeting began with introductions.

The group was informed that County P & R wrote to Corps in regard to the possibility of extending the Tres Rios Study to the west to include the Estrella Park in the Plan. Mr. Scalzo also indicated a need to update the Estrella Park Master Plan. He also stated that PIR has an agreement with P&R to provide some facilities and that PIR is in need of a water source.

The Group then discussed some flooding issues in Buckeye and the need for the Study to address these problems.

Steve Cleveland explained the Corps process. It was jointly decided that this request should be separate from the Tres Rios Project. Also that a letter to the COE was required to initialize the process for the Corps to program funds and begin the reconnaissance study for the subject area. Mrs. Wilcox stated that she would contact members of the Arizona Congressional Delegation to insert the study request into this year's Corp of Engineer's budget. It was decided that FCD would draft the letter and seek comments from the group. This letter is to be final form for the next meeting for signature of the group.

Steve Cleveland also expressed Goodyear's intent of using the Gila River corridor as open space and providing links to other greenbelt/linear parks. Everyone agreed that each entity needed to develop a concept for the River corridor in each jurisdiction. These concepts would be provided to the Corps for consideration in the study.

Meeting Adjoined at approximately 3:00 PM.

Action Items:

FCD

Greg Jones is to draft and coordinate letter for signature.

Next Meeting:

August 3, 1999 at 9:00 AM at FCD's Adobe room

Minutes of August 3, 1999 Meeting.

Minutes OF "LOS RIOS" Mtg.
August 3, 1999 @ 9:00 AM

Subject: Coordination Meeting between County Supervisor, the Flood Control District Of Maricopa County, Parks and Recreation Department of Maricopa County, the City of Goodyear, the City of Buckeye, the Buckeye Irrigation District, and King Ranch – Gila River Restoration – Agua Fria River to SR 85.

The meeting began with introductions and FCD noting a typographical error in the previous meeting minutes in the handout along with the agenda and a draft copy of the letter to Corps.

The group was then asked to review the letter for any comments. It was decided to include Maricopa County Parks and Recreation Department as a signatory. Also the Reference on the map and letter should indicate that the upstream limits of the study area should be the Agua Fria River confluence. These changes were made to the letter. The first signature was performed Ms. Mary Rose Wilcox, County Supervisor District 5, and the other signatures were as follows:

Dustin Hull, Mayor of Buckeye
William Arnold, Mayor of Goodyear
Thomas F. Morales, Jr., Mayor of Avondale
Jackie A. Meck, Buckeye Irrigation Company
Michael Ellegood, Chief Engineer and General Manager Flood Control District Of Maricopa County
Jim Host for William Scalzo, Chief Officer and Director Maricopa County Department of Parks and Recreation

A copy of the letter is attached.

The issue of the Study/Project Name was discussed again. No new suggestions were brought forth. FCD suggested this issue be addressed at the next meeting (August 31, 1999). Mr. Dixon of the Corps indicated that the name selection should be done carefully and at the beginning of the project. He also indicated it will get harder and harder to change the project name as time goes on.

FCD proposed hosting two Visionary Meetings. The first for top level management will be held from 10:00 to 3:00 noon on August 31, 1999 in the District's Adobe conference Room. The second meeting will be for two (2) days on October 6 and 7, 1999 at the District (Meeting Room to be announced.)

Ms. Wilcox indicated that PIR was interested in joining the group in our efforts. Mr. Dixon indicated that the users upstream and downstream should be contacted to inform them of our efforts. Additionally, he indicated that Arizona State Land Department along with Arizona Game and Fish Department should be contacted as potential partners and funding sources. The group also suggested that Arizona Rock Products Association, Allied Waste, Alcola and participants in the Tres Rios study should also be contacted and invited to future meetings.

Mr. Meck asked if the District had any ownership maps of the project area. The District indicated that there were some maps but were probably out of date. Mr. Meck indicated he would be contacting the private owners in the area and it would be helpful to have a map identifying the owners within the project area so that they could be contacted and included in the development of the vision.

Meeting Adjourned at approximately 11:00 AM.

Action Items:

FCD

Greg Jones is to draft invitation letter for the August 31, 1999 visionary meeting.
Dick Perreault to include in the Tres Rios coordinating agenda a reference and invitation to the August 31, 1999 meeting.
Greg Jones to provide Buckeye with 6 extra copies of the project site map.

Corps

Tom Dixon to get back with FCD on how to make the project appear on the Corps "radar screen".

County Supervisor District 5

Mary Rose Wilcox to call Colonel Carroll in approximately 10 days to verify if the letter was received.

Mary Rose Wilcox to contact the Governor's office to inform them of the project.

Mary Rose Wilcox to contact GRIC.

Next Meeting:

August 31, 1999 at 10:00 AM at FCD's Adobe Conference Room (Visionary Meeting).

Attendance List

City of Avondale

Don Schwartz (932-6088)

City of Buckeye

Dusty Hull (386-4691)

City of Goodyear

Steve Cleveland (932-3910)

William Arnold (932-3910)

Supervisor District 5 of Maricopa County

Mary Rose Wilcox (506-7092)

Terri Torres Leija (506-7092)

Maricopa County Department of Parks and Recreation

Jim Host (506-8675)

Mark Lansing (932-3811)

Flood Control District of Maricopa County

Mike Ellegood (506-4700)

Tom Johnson (506-4703)

Dick Perreault (506-4774)

Russ Miracle (506-2961)

Greg Jones (506-5537)

Army Corps of Engineers

Joe Dixon (640-2003)

U.S. Congressional District III, Arizona (Bob Stump)

Scott Stewart (379-6923)

Kings Ranch Properties

Ed King (932-3334)

Minutes of August 31, 1999 Workshop.

PARTNERING SESSION

FOR

EL RIO
VISIONARY MEETING

Prepared By:

RH & ASSOCIATES
"Partnering & Value Specialists"
Corporate Office:
16428 N. 32ND Street, Suite 109
Phoenix, AZ 85032
(602) 493-1947 (800) 480-1401
(602) 493-2433 (Fax)

RH Project No. 91150459

PARTNERING WORKSHOP

Conducted on

August 31, 1999

PROJECT PARTNERS

ARIZONA GAME AND FISH

ARIZONA HOUSE OF REPRESENTATIVES

BUCKEYE IRRIGATION COMPANY

CITY OF AVONDALE

CITY OF BUCKEYE

CITY OF GOODYEAR

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

GILA RIVER INDIAN COMMUNITY

KING RANCH

MARICOPA COUNTY PARKS

MARICOPA COUNTY BOARD OF SUPERVISORS

U.S. CORPS OF ENGINEERS

Facilitator:
Renee Hoekstra

PARTNERING WORKSHOP ATTENDEES

August 31, 1999

| Arizona Game and Fish | | | |
|--|--|--------------|--|
| Pamela Sponholtz | | 602-789-3608 | |
| Tim Wade | | 640-981-9400 | |
| Arizona House of Representatives | | | |
| Mike Gleason | | 623-932-6088 | |
| Buckeye Irrigation Company | | | |
| Jackie Meck | | 623-386-2196 | |
| City of Avondale | | | |
| Don Schwartz | | 623-932-6088 | |
| City of Goodyear | | | |
| Andrew J. Cooper, Jr. | | 623-932-1634 | |
| Flood Control District of Maricopa County | | | |
| Mike Ellegood | | 602-506-4700 | |
| Tom Johnson | | 602-506-4703 | |
| Gregory Jones | | 602-506-5537 | |
| Julie Lemmon | | 480-350-9138 | |
| Dick Perreault | | 602-506-4774 | |
| Gila River Indian Community | | | |
| George B. Brooks, Jr. | | 520-562-3301 | |

PARTNERING WORKSHOP ATTENDEES (continued)

| Maricopa County Board of Supervisors | | | |
|---|-----|--------------|--|
| Mary Rose Wilcox | | 602-506-7092 | |
| Terri Leija | | 602-506-1368 | |
| King Ranch | | | |
| Ed King | | 623-935-2003 | |
| Jim King, Sr. | | 602-536-7939 | |
| Carol Ackerman | FMA | 602-840-6803 | |
| Maricopa County Parks | | | |
| Jim Host | | 602-506-8675 | |
| Bill Scalzo | | 602-506-2930 | |

EXPECTATIONS

Each of the participants was asked to identify their expectations for the meeting. The list follows:

1. Gain consensus on a Mission
2. Gain cooperation
3. Determine the Project Name
4. Define potential funding opportunities
5. Help to develop a guide for future policy decisions
6. Remain focussed on the big picture including Health and Safety issues
7. Determine lines of authority for the Committee
8. Develop a schedule of milestones
9. Identify all issues and concerns
10. Identify potential legislation that may be required
11. Identify recreational set-asides
12. Understand issues and concerns of GRIC
13. Identify everyone needing to be involved
14. Define the project limits
15. Determine action plans for outstanding issues
16. Share positive items which make this a successful and unique project
17. Identify water needs and availability

PROPOSED NAMES

Team members were asked to identify potential names for the project. This list represents all of the names suggested. Those names being considered are shown without a strike line. Team members were then asked to privately vote for the project name.

- ◆ Rio Estrella – Star River
- ◆ ~~Los Rios – The Rivers~~
- ◆ **El Rio – The River**
- ◆ Rio Estrellita – My Dear Little Star River
- ◆ Rio Gila – Gila River
- ◆ ~~Gila Vista – Gila View~~
- ◆ ~~Gila Grande – Big Gila~~
- ◆ ~~Gila Estrellita~~

PROJECT NAME

The successful name of the project is:

EL RIO

VISIONS

Each participant was asked to share their vision of the area and potential future uses of El Rio. The presentations were limited to no more than 5 to 8 minutes. The following captures the essence of each of the presentations.

KING PROPERTIES

(Ownership of 3 miles along the River)

1. Work with all to tie everything together
2. Signature Development to bring people together
 - Residential
 - Golf
 - Recreational
3. Supports the project
4. "Riperian Habitat"
5. Opportunity for private or public participation
6. Flood Control issues both up and down the River need to be taken into account

CITY OF AVONDALE

1. Restore Habitat
2. Maximize the use of natural resources with development
3. Focus on community needs
4. Supports the Plan
5. Water re-use issues for the future – currently working on capturing discharge for City use

GILA RIVER INDIAN COMMUNITY

1. They would like to share the resources
2. Elections are occurring at the end of November
3. Interested in the synergism of the area and the approach

FCDMC

1. Need to be focussed on the science/engineering elements in order to implement
2. Include multi-use features
 - Educational
 - Environmental
 - "Improving water quality"
3. Focus on abundant water resources
4. Restoration of the River with native Habitat "Riperian"
5. Public - Private Partnerships
 - Planning, design and construction
 - Long-term operation and maintenance
6. Focus on property rights
7. Permitting cannot be overlooked
 - Building & Long-term O & M

VISIONS (continued)

MARICOPA COUNTY BOARD OF SUPERVISORS

1. Create a destination point
 - Develop amenities
2. Natural Riparian Habitat
3. Recreational areas
 - Quality of Life issues
 - Multi-use
4. Vision to be for a period of 5-10 years to ensure that this can be included in the Capital Improvement Programs for the County to ensure funding can be available for development as well as Operation and Maintenance
5. Industrial corridor
 - Attract industry through appropriate housing
 - Need a mixture of housing including more upscale

CITY OF GOODYEAR

1. Consider open space and preserve the area in its natural habitat "Riparian Habitat"
2. Suggested the use of discharge from the WWTP to maintain river
3. Create "Eco-tourist" areas
4. Link with Maricopa County parks
5. Linear park system – starting at Gila River to White Tanks
6. Supports the project

VISIONS (continued)

AZ GAME & FISH

1. Multi-faceted approach
 - Recreational
 - Environmental
 - Development outside Riperian Corridor
2. Maintain natural meander of River
3. Compatible uses
 - Active and passive
4. Backwaters/open waters – seek “Bio-Diversity”
5. Maintain natural habitat/consider species
6. Endangered species habitat
7. Control of Trash – O&M issues
8. Protection of groundwater table in future
9. Wildlife corridor concerns
 - Maintain and control?
10. Supports the plan
11. Address contamination issues in water

TOWN OF BUCKEYE

1. Recreational opportunities
2. Contribute to agricultural, civic and other social values
3. Provide jobs and increase revenues
4. Restore ecological diversity along with Human uses
5. Both Active and Passive parks
6. Develop interrelationships with adjacent Communities
7. Supports the project

VISIONS (continued)

BUCKEYE IRRIGATION COMPANY

1. They have available water
2. Attract people for recreational purposes
3. "Riperian Habitat" is important
4. Supports the project
5. Continue the "Tres Rios" concept
6. Use to create revenue

MARICOPA COUNTY PARKS

1. Create 30-40 acre pond area
 - Recreational – year around
 - Fishing
2. Wild life viewing
 - Trails
 - Educational facilities
 - Environmental
 - Multi-use
3. Flood control/ develop in the non-floodplain area
4. Retain the beauty – continue year around
5. Include the historical background of the area
6. Restore the Habitat
7. Compliment development

*U.S. CORPS OF ENGINEERS
Executive Branch Vision*

1. Focus and bring all Federal agencies on board
2. Interested in:
 - Riverine Health
 - Environmental
 - Habitat restoration
3. Funding available to construct Habitat Restoration in addition to planning
4. They need to focus on their Capital Improvement Program as well

Judicial Branch (Regulatory)

1. They recommend that this project stay out of the courts – live within Regulatory requirements
2. The River is well regulated
3. They have become very innovative in participating with Flood control projects

CONSENSUS VISION

MISSION – The “El Rio” team, through cooperation and synergy, and for the benefit of all stakeholders, will focus our energies and efforts on the successful development of this signature project by accomplishing the Vision elements as listed below:

1. Restore and maintain the natural functions within the Riverine corridor
A “Riperian Habitat”
2. Focus on Multi-use facilities and functions
 - Recreational
 - Educational
 - Community needs
3. Maintain or enhance flood control elements
4. Focus on public/private partnerships
5. Link development with the natural habitat based on functional compatibility outside the Riperian Habitat limits

VISION EFFORT

- ◆ The FCDMC will lead this team through the Vision portion of the project
- ◆ Scoping Meeting – The next detailed meeting is to include everyone that can flush out all of the key project elements of each of the vision elements
- ◆ Companies identified as needing to be included in the process during the Vision portion of the project approach:
 - PIR
 - BLM
 - Statelands
 - City Planning Directors
 - Regulatory Person – an individual familiar with all requirements
 - Sunchase Capital
 - ADWR
 - Maricopa County P&D
 - MCDOT
 - GRIC
- ◆ Department Heads to attend the meeting at the beginning and return at the end for a presentation by the team
- ◆ A written report is to be provided at the completion of the second meeting

PARKING LOT

Several issues were identified throughout the meeting. In an effort to save these thoughts a "parking lot" was established. Elements to be considered in the future include:

1. Birds at end of Runway at Goodyear Airport
2. Land titles are in question
3. Flooding Issues
4. Focus on each phase at it's appropriate time
5. Fred J. Whiler Greenbelt
6. Law suit at MC85
 - Gillespie Dam failure with owners in appeal at this time
 - Dam owners vs. FCDMC
7. Liability Issues
8. Funding Issues
 - Local
 - County
 - Private
 - State and Federal
9. What is the legal makeup of this team?
10. Loop 303 issues - ADOT
11. Future development
 - Policies and procedures
 - Impact fees

Agenda and Attendance List for October 6th & 7th Workshop.

El Rio Visioning Workshop

Hosted by the Flood Control District of Maricopa County

October 6-7, 1999

Agenda

October 6 - Day 1

- | | | | |
|-------|---|--------|-------|
| 8:00 | Welcome and Introductions | Geza | |
| 8:15 | Project Background (What has gone on to date) | Greg | |
| | Present Leadership Vision | | |
| | Meeting Purpose and Desired Outcomes | | |
| | Provide Direction for the Corps of Engineers to undertake a Reconnaissance Study: | | |
| | Develop River Restoration Management Plan (Story Board Concept showing desired land uses in schematic form e.g. bubble diagram) | | |
| | Develop Action Plan | | |
| | Future Actions | | |
| | Schedule | | |
| | Develop List of Involved Entities | | |
| 8:30 | Group Feed back on Desired Outcomes | Geza | |
| 9:00 | Break | | |
| 9:15 | Scoping Methodology Overview | Geza | |
| 9:30 | Existing Conditions Review | Greg | |
| | Natural Character | | |
| | Topography | | |
| | Transportation | | |
| | Land Uses | | |
| | Environmental Issues | | |
| | Flooding History | | |
| 10:00 | Visioning Process Overview | Dennis | |
| 10:15 | Brainstorm Projects to implement Vision Components | Dennis | |
| 11:00 | Organize teams | Geza | |
| 11:05 | Theme Concept Development Round 1 | | |
| 11:30 | Theme Concept Development Round 2 | | |
| 12:00 | Lunch | | |
| 1:00 | Theme Concept Development Round 3 | | |
| 1:30 | Theme Concept Development Round 4 | | |
| 2:00 | Theme Concept Development Round 5 | | |
| 2:30 | Break | | |
| 2:45 | Consolidate Themes | Dennis | |
| 3:30 | Presentation of Consolidated Themes by teams and Question & Answers | | Teams |
| 4:30 | Closing Remarks | Greg | |
| | Explain facilitator's midnight Sojourn objectives | | |
| 4:35 | Adjourn | | |

El Rio Visioning Workshop

Hosted by the Flood Control District of Maricopa County

October 6-7, 1999

Agenda

October 7 - Day 2

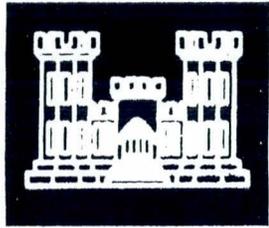
- | | | |
|-------|--|-------------|
| 8:00 | Introductory Remarks and Agenda Review | Geza |
| 8:15 | Presentation of Consolidated Themes ID Compatibilities ID Incompatibilities | Dennis |
| 8:45 | Group Feedback and Concensus | Geza |
| 9:00 | Brainstorm Solutions to Identified Incompatibilities and Problems | Geza/Dennis |
| 12:00 | Lunch | |
| 1:00 | Identify Unresolved Issues | Geza |
| 1:30 | Develop Action Plan and Goals Future Actions Time Frames Responsibilities Develop List of Stakeholder, Involved Entities, Others | Geza |
| 3:00 | Presentation of Gila River Restoration Management Plan (El Rio) | Greg |
| 3:30 | Questions & Answers | Geza |
| 3:55 | Closing Remarks | Gregg |
| 4:00 | Adjourn | |

El Rio Meeting
October 6, 1999

SIGN-IN SHEET

| NAME | ORGANIZATION | PHONE |
|---------------------------|----------------------------|---------------------------|
| Gregory Jones | FCD | 506-5537 |
| Michelle Denne | Planning & Development | 506-7829 |
| Dennis Holcomb | FCD - Wash. Arch | 506 4075 |
| Jim Cavanaugh | Goodyear City Council | 935-0636 |
| DICK PERREAULT | FCDMC | (602) 506-4774 |
| Dave Johnson | FCDMC | (602) 506-4705 |
| JIM KING SR | KING RANCH | 623-536-7939 |
| Todd KTOPP | Son Chase | (602) 459-1090 |
| GIL MARTINEZ | FMA | (602) 840 6803 |
| MIKE ROME | Sienna Corp (Kingdon) | (760) 776-8213 |
| KATHY KUGLER | CITY OF GOODYEAR | (623) 932-3005 |
| Tim Waite | Az Game + Fish | 480-981-9400 x219 |
| Gene Dahlen | BLM - Phoenix Field Office | 623-580-5500 |
| Neil Urban | MC PAD | 602-506-2430 |
| Jim Host | MC PARKS | 602-506-2675 |
| GARRETT FABIAN | " " ESTRELLA PARK | 623-932-3811 |
| Russ Mirack | FCDMC | 602-506-2961 |
| JACKIE MECK | BUCKEYE WATER CONSERV + DD | 623-386-2190 |
| Mike Ternak | Corps of Eng'r | (602) 640-2003 |
| Ed Hwig | Hwig RANCH | (602) 935-2003 |
| Tommy Drake | Terra-Link | (602) 304-7005 |
| SAM ARROWOOD | CORPS OF ENGRS | (602) 640-2033 x246 |
| MATT BOEHNER | FCDMC | 506-2956 |
| ANDREW COOPER | CITY OF GOODYEAR | 623-932-1637 |
| | | |
| | | |
| | | |

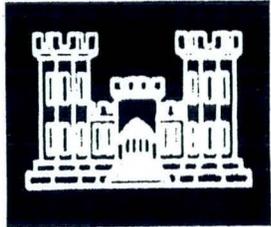
Corps of Engineers Presentation and March 3, 1999 Letter.



INTRODUCTION

ARMY CORPS OF ENGINEERS PLANNING PROCESS





REQUIRED
CONGRESSIONAL ACTION

- **STUDY PHASE**

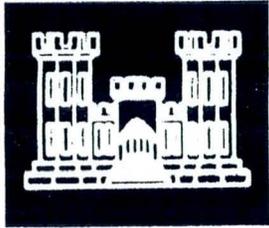
- Reconnaissance
- Feasibility

- Congressional authorization & appropriation

- **CONSTRUCTION PHASE**

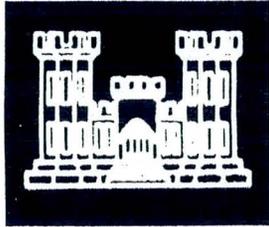
- Design
- Construction

- Congressional authorization & appropriation



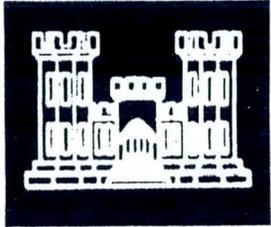
RECONNAISSANCE STUDY SCOPE

- May investigate a single problem
 - Navigation, flood control, storm damage prevention, or ecosystem restoration
- Or, can investigate multiple problems
- Comprehensive watershed studies
 - With the potential of spin-off reconnaissance studies



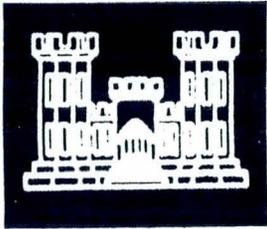
EXPEDITED RECONNAISSANCE STUDY

- Must be done with less detail and for less money
- Verify/understand water resource problems
- Use existing, readily available data
- Coordinate with sponsor and federal, state and local agencies



RECONNAISSANCE STUDY PURPOSE

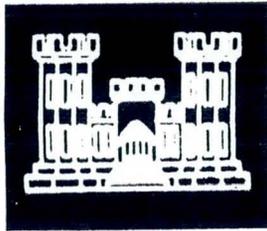
- Define water resources problems and identify solutions
- Decide whether there is a federal interest in solving the problems
- Identify a local sponsor
- Prepare a project study plan



RECONNAISSANCE PHASE GOALS

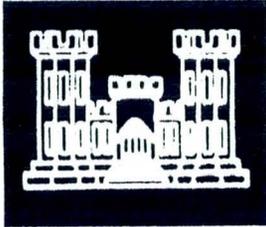
Develop and present sufficient information to determine whether at least one alternative is capable of meeting the criteria for a feasibility study

* (Study is fully paid for by the corps)



RECONNAISSANCE PHASE PRODUCTS

- Project study plan (psp)
 - Scope, schedule and cost are used by the corps and local sponsors for decision making
- Appraisal document
- Letter of intent
- Feasibility cost-sharing agreement



FEASIBILITY PRODUCT

- FEASIBILITY REPORT which becomes the congressional authorizing document for construction funds
 - Recommends action
 - Includes a cost estimate for the action
 - Includes an EIS



DEPARTMENT OF THE ARMY
U.S. Army Corps of Engineers
WASHINGTON, D.C. 20314-1000

REPLY TO
ATTENTION OF:

3 MAR 1999

CECW-PE

MEMORANDUM FOR MAJOR SUBORDINATE COMMANDS AND DISTRICT COMMANDS

SUBJECT: Planning Guidance Memorandum 99-01 -- Reconnaissance Phase Guidance

1. Purpose. This letter provides implementation guidance for the reconnaissance phase. The objective is to streamline procedures for completing the reconnaissance phase. This guidance will be incorporated into the next revision of ER 1105-2-100, Guidance for Conducting Civil Works Planning Studies. This memorandum supersedes Planning Guidance Letter 96-3.
2. Applicability. This memorandum applies to all reconnaissance studies initiated in or after Fiscal Year 2000 and is optional for all Fiscal Year 1999 reconnaissance studies
3. Reconnaissance Study Tasks. The Reconnaissance Study phase shall accomplish the following six essential tasks:
 - a. Determine if the water resource problem(s) warrant Federal participation in feasibility studies. Defer comprehensive review of other problems and opportunities to feasibility studies;
 - b. Define the Federal interest based on a preliminary appraisal consistent with Army policies, costs, benefits, and environmental impacts of identified potential project alternatives;
 - c. Complete a 905(b) Analysis (Reconnaissance Report);
 - d. Prepare a Project Study Plan (PSP);
 - e. Assess the level of interest and support from non-Federal entities in the identified potential solutions and cost-sharing of feasibility phase and construction. A letter of intent from the local sponsor stating the willingness to pursue the cost shared feasibility study described in the PSP and to share in the costs of construction is required; and
 - f. Negotiate and execute a Feasibility Cost Sharing Agreement (FCSA).
4. Reconnaissance Study Requirements.
 - a. The Reconnaissance Study will address the requirements of Section 905(b) of the WRDA 86, as amended. This provision requires that the reconnaissance study will include an analysis of the

CECW-PE

SUBJECT: Planning Guidance Memorandum 99-01 - Reconnaissance Phase Guidance

Federal interest, costs, benefits, environmental impacts of proposed action(s), and an estimate of the costs of preparing the feasibility report.

b. The expedited reconnaissance study will generally cost no more than \$100,000 and should be completed as expeditiously and efficiently as possible. By law, the duration of the reconnaissance phase shall normally be no more than 12 months and in all cases is to be limited to eighteen months.

c. The concept of developing a project study plan (PSP) to guide the feasibility study is an essential task in the Reconnaissance Phase and is critical to cost shared feasibility study negotiations. The PSP will be the initial component of the Project Management Plan (PMP). The PSP supports the FCSA and is the district's management document. The PSP shall be developed in accordance with guidance provided in EC 1105-2-208. The requirement to submit the PSP to HQUSACE for approval as stated in Paragraph 7 of EC 1105-2-208 is rescinded. However, upon completion of the PSP, two copies shall be submitted to Headquarters, attention CECW-P for information. Divisions will ensure that the PSP receives appropriate QA/QC review.

d. Existing, readily-available data should be used during the Reconnaissance Study. Sponsor, other agency, State, and local government sources of available data will be used to the maximum extent possible.

e. The accomplishment of Tasks 3a and 3b, shall be based on professional and technical judgement, utilizing an experienced study team. Special attention will be given to identifying the problem, project purposes, types of outputs, and whether the intended project purpose and/or likely outputs are consistent with Army/Corps implementation and budgetary policies.

f. Sound judgment and limited analytical approaches should be employed during the Reconnaissance Study and the principles of Principles and Guidelines (P&G) justification will be followed. However, following the detailed procedures for conducting economic and environmental analyses, as outlined in P&G and Corps regulations based on P&G, is not required. Economic and environmental investigations should be limited to assessments of benefits and costs of a limited number of potential solutions, in sufficient detail to indicate that Corps participation is warranted. The economic assessment should describe the existing conditions, and potential magnitude and types of benefits from proposed actions. Likewise, the environmental assessment should describe existing conditions, effects of potential measures, and the likely requirement for mitigation.

g. To keep the Reconnaissance Study focused, costs low, and duration short, the following items are not required as part of the reconnaissance studies: (1) development and formalized displays of detailed cost estimates (such as MCACES); (2) detailed engineering and design studies and data gathering; (3) detailed environmental resources evaluations; (4) optimization and benefit-cost

CECW-PE

SUBJECT: Planning Guidance Memorandum 99-01 - Reconnaissance Phase Guidance

analyses; (5) detailed real estate information; (6) report preparation; (7) formal coordination with other Federal and state agencies; and (8) other studies not directly needed to support the essential tasks required in paragraph 2 above.

h. As part of the Section 905(b) (WRDA 86) Analysis, the district will describe the major feasibility phase assumptions that will provide the basis for the study, discussion of alternatives that will be considered, and estimate of feasibility study cost and schedule. The Section 905(b) (WRDA 86) Analysis format that is enclosed provides the minimum requirements for Headquarters review and approval, and a sample set of assumptions.

5. Reconnaissance Phase Procedures.

a. A Section 905(b) (WRDA 86) Analysis, as described in paragraph 3 above, is to be used as the basis for making the decision to proceed or to not proceed into the feasibility phase. The Section 905(b) (WRDA 86) Analysis should be submitted to HQUSACE for review and approval as early as possible in the reconnaissance phase. The PSP discussions with the non-Federal sponsor should be initiated at the start of the study phase and should be continuous throughout the study phase.

b. After Headquarters approval of the 905(b) analysis and letter of intent and upon completion of PSP negotiation and approval of any requested deviations to the model FCSA, the district may execute the Feasibility Cost Sharing Agreement, which would then conclude the reconnaissance phase and initiates the feasibility phase.

6. Cost Limits. The \$100,000 expedited reconnaissance study is an important means to initiate quality feasibility studies more quickly and at less cost. However, the \$100,000 expedited reconnaissance studies may not be the most effective means to initiate every feasibility study. Districts may request exceptions to the \$100,000 cost limit of the Expedited Reconnaissance Study. The justifications for exceptions must be submitted with the request to CECW-P for review and approval.

7. Implementation. This guidance letter is effective immediately.

FOR THE COMMANDER:

Encls


RUSSELL L. FUHRMAN
Major General, USA
Director of Civil Works

Section 905(b) (WRDA 86) Analysis

1. STUDY AUTHORITY. Include the full text of principal resolution(s) and/or other study authorities. Provide study funding summary including budget and appropriation history.
2. STUDY PURPOSE.
3. LOCATION OF PROJECT/CONGRESSIONAL DISTRICT.
4. DISCUSSION OF PRIOR STUDIES, REPORTS AND EXISTING WATER PROJECTS.
5. PLAN FORMULATION.
 - a. Identified problems: Provide assessment of water and related land resources problems and opportunities specific to the study area. The following information is required: (1) Existing conditions; (2) Expected future conditions; (3) Planning constraints and planning objectives; and (4) Concise statements of specific problems and opportunities with emphasis on problems warranting Federal participation in the feasibility study.
 - b. Alternative plans: Description and discussion of the likely array of alternatives to be developed in the feasibility phase.
 - c. Preliminary evaluation of alternatives: Description and discussion of the likely benefits, costs, and environmental impacts and outputs for each alternative analyzed.
6. FEDERAL INTEREST. Define the Federal interest based on a preliminary appraisal consistent with Army policies, costs, benefits, and environmental impacts of identified potential project alternatives.
7. PRELIMINARY FINANCIAL ANALYSIS. The 905(b) analysis should be accompanied by a letter of intent from the local sponsor stating its willingness to pursue the feasibility study described in the 905(b) analysis and to share in its cost and the cost of project construction.
8. SUMMARY OF FEASIBILITY STUDY ASSUMPTIONS. The summary will describe the normal assumptions used for formulation, evaluation, coordination, and reporting procedures described in ER 1105-2-100, ER 200-2-2, and related planning phase guidance. The summary should highlight any anticipated deviations from the normal feasibility phase requirements. See Attachment I for a sample set of feasibility study assumptions.
9. FEASIBILITY PHASE MILESTONES. See Attachment II for a sample list of milestones.
10. FEASIBILITY PHASE COST ESTIMATE. See Attachment III for a sample cost estimate table.

11. RECOMMENDATIONS. Recommend whether to continue to a feasibility study or not, based on consistency with Army and budgetary policies and likelihood of a project meeting criteria for Federal participation in project implementation.

12. POTENTIAL ISSUES EFFECTING INITIATION OF FEASIBILITY PHASE. Discussion on any potential issues which may affect the initiation of the feasibility phase or project implementation.

13. VIEWS OF OTHER RESOURCE AGENCIES (if known).

14. PROJECT AREA MAP

(District Engineer Signature Block)

Enclosure

Sample Assumptions Pertaining to an Environmental Restoration Feasibility Study

1. The resulting document will be a combined EIS/EIR prepared by the local sponsor combined (but not integrated) with the Feasibility Report prepared by the Corps. The Feasibility Report will rely heavily on the NEPA/CEQA document as a reference.
2. The document will address the project as an independent project that does not rely on other projects (describe), but which could benefit from other projects through an accelerated realization of the anticipated environmental outputs.
3. The schedule assumes that ongoing activities (describe) will result in a clean enough site for R/E to assign a land value appropriate for some type of highest and best use in order to predict how the properties will ultimately be zoned.
4. The schedule assumes that the property will be available for wetland restoration (as scheduled) by January 2000.
5. The Feasibility Report will be based on a package of engineering information provided by the Local Sponsor. An Engineering Appendix will not be prepared by the Corps. The engineering information provided by the Local Sponsor will be reviewed by the relevant district sections. The schedule assumes that no additional engineering analysis will be necessary, and that no major revision to the engineering package will be needed.
6. A Draft Coordination Act Report may not be ready by August 1. The Fish and Wildlife Service may be able to prepare a Planning Aid Letter, in which F&W issues and concerns are identified, in time for circulation with the draft report. A HEP analysis will be conducted by FWS and the resulting Habitat Units will be used by the Corps to quantify the environmental output of the proposed project.
7. An MCACES will be performed on the selected plan providing an analysis suitable for a feasibility level study.
8. An approved real estate gross appraisal will not be required for the draft feasibility report.
9. There will be only one conference before the AFB. Due to the need for expedited reviews. The AD FR/EIS/EIR will be provided to HQ before the District and sponsor completes their review of the documents. Issues from the conference will be provided to HQ before the AFB.
10. QC certification of the AFB package (AD FR/EIS/EIR) will not be provided prior to the AFB conference, but will be provided at the conference.
11. The FCSA will be signed after the Public Meeting.

12. There will be no AFB Decision Conference as the decision to have an AFB conference has already been made.

13. An incremental analysis of some sort will be performed by the Corps on information provided by the local sponsor in order to display cost vs. ecological output (benefits). The Feasibility Report will not contain a detailed economics analysis as there are no traditional economic outputs anticipated.

14. Four increments will be analyzed:

- a. Wetland restoration without the use of dredged material.
- b. Placement of dredged material to accelerate wetland restoration.
- c. Wetland restoration at the project site and State Lands properties without the use of dredged material.
- d. Placement of dredged material at the State Lands property using dredged material to accelerate wetland restoration.

15. All alternatives except the no action alternative will have a goal of creating a mix of 20 percent seasonal wetland and 80 percent tidal marsh. This ratio is a result of interagency input.

16. The report will assume that construction will last a maximum of ten years, after which the levee will be breached regardless of remaining capacity.

17. The report will not address the costs or impacts of the transportation of dredged material into the site. Those costs will be addressed for specific dredging projects. Because the cost of transportation to the site (including unloading) will be less than the cost of ocean disposal, the transportation and unloading costs will be funded by the specific dredging projects. The report will address the site preparation, placement of material, and the levee breaching, as well as O&M and monitoring of the completed project.

18. The schedule assumes that the local sponsor is willing to go along with it and they do not have their own list of conditions that conflict with ours. Discussions on this issue are currently underway.

19. The schedule assumes that the FCSA will be signed prior to HQ approval of the PSP. We need to have HQ concurrence on this ahead of time. The local sponsor is willing to sign the FCSA at this stage provided they agree with the conditions of the draft PSP. At this time we are requesting permission to proceed in this manner.

Sample Environmental Restoration Feasibility Study Milestones

| | |
|--|------------------|
| Notice of Intent/ Notice of Initiation of Feasibility Study | February 20 |
| NOI published in FR/Public Notice NOP circulated | February 27 |
| Preliminary draft PSP | March 6 |
| Supervisory and QC review of PDPSP | March 9 - 11 |
| Joint EIS/EIR Scoping Meeting - Public Workshop | March 18 |
| PDPSP reviewed and approved by sponsor Response to QC comments. | March 18 - 20 |
| FCSA signed | March 24 |
| ADFR and ADEIS complete | June 1 |
| Read ahead info for AFB (including admin documents*) to HQ | June 2 |
| M7/M8 - Pre-AFB Conference with sponsor | June 11 |
| Alternative Formulation Briefing | June 25 |
| ADFR and ADEIS review/comment/revision | June 1 - July 24 |
| Print DFR and DEIS | July 27 - 31 |
| Transmit DFR and DEIS to HQ and mail to public/M11 | August 3 |
| District submits final report to Division | Jan 99 |
| Division Commander's public notice. Final report submitted by Division to HQ. Initiation of Washington level review. | March 99 |

*Admin documents made available to HQ; QC and identification of issues to be developed after 11 June pre-AFB meeting between District and sponsor.

FEASIBILITY STUDY COST ESTIMATE EXAMPLE

| MAJOR WORK ITEMS | STUDY COST |
|------------------------------------|------------|
| COST SHARING FOR FEASIBILITY STUDY | |
| TOTAL STUDY COSTS | |
| 50% FEDERAL SHARE | |
| Public Involvement | |
| Environmental Studies | |
| Economic Studies | |
| Project Management | |
| Engineering | |
| Real Estate Studies | |
| Model Studies | |
| Review Contingency | |
| TOTAL FEDERAL SHARE | |
| 50% SPONSOR SHARE | |
| IN-KIND SERVICES | |
| Public Involvement | |
| Environmental Studies | |
| Economic Studies | |
| Project Management | |
| Engineering | |
| Real Estate Studies | |
| Model Studies | |
| Review Contingency | |
| Subtotal | |
| CASH FUNDS | |
| TOTAL SPONSOR SHARE | |

Councilman Jim Cavanaugh's Organizational Presentation.

*

Funding
To Be looked
Ext. Comm. Committee

Organizational Structure

- Hierarchy
 - Top level (Single entity)
 - Organizational leaders
 - Influential in accessing funds
 - Stakeholder
 - Second level (Multiple entities accountable to top level)
 - Technical experts
 - Stakeholders

Top Level

- Senior Representative from:
 - Flood Control
 - State (Game & Fish, Land??)
 - County (Supervisor)
 - Affected Cities (City Manager)
 - Federal (Corps, BLM??)
 - Environmentalist

Top Level (Cont.)

- Non-Organizational Representatives:
 - Two disinterested citizens from applicable communities
 - One Affected Landowner

Name of Top Level

- Senior El Rio Coordinating Committee
- El Rio Advisory Group
- Etc.

Why, One Committee With Overall Authority ??

- Provides an integrating and controlling element in a complex program
- Provides a strong voice capable of choosing among competing priorities but still under the El Rio flag
- Provides a coordinated strategy with buy-in by all senior level participants, who are able to hold the assigned organization accountable for his/her decision

Why, One Committee With Overall Authority ?? (Cont.)

- Provides a continuing, uninterrupted presence in a long term program
- Provides a presence with expedient access to funding authority
- Demonstrates unquestioned senior leadership commitment to those who possess financial resources
- Curtail negative perceptions that derail effectiveness

Duties of Senior Committee

- Agree on overall strategy
- Agree on major tasks and ascertain funding requirements
- Identify committee requirements and form committees
- Appoint members to committees
- Identify proposed funding sources

Duties of Senior Committee (2)

- Seek funding
- Task committees to execute programs
- Receive periodic briefings and continue to direct taskings

Senior Committee is NOT

- A source of funding, but is in position to determine need, find source, minimize wasteful effort, and request funding with credibility
- Able to commit assigned organizations without qualification, but is in a position to facilitate organizational cooperation

Example Committees

- Flood Control and Water Flow
- Riparian Habitats
- Restoration
- Recreation
- Water Quality, Recharge, and Potability
- Finance
- Marketing
- Publicity
- Volunteer solicitation and Control (Manpower)

What Now !

- Several members of this vision group decide if we want an organizational structure with a hierarchy.
- If so, form the structure
- Request senior leadership concurrence and commitment

What Now !

- Decide if El Rio needs a full time executive officer to provide requisite administration, control, and coordination of the voluminous activities for this long term effort or does FCDMC (or other org.) wish to carry on the functions.

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List of Stakeholders.

LIST OF STAKEHOLDERS

Maricopa County Board of Supervisors

Flood Control Advisory Board

City of Avondale

City of Buckeye

City of Goodyear

Buckeye Irrigation Company

Maricopa County Department of Parks and Recreation

Maricopa County Department of Planning and Development

Maricopa County Department of Transportation

Flood Control District of Maricopa County

Arizona State House of Representatives

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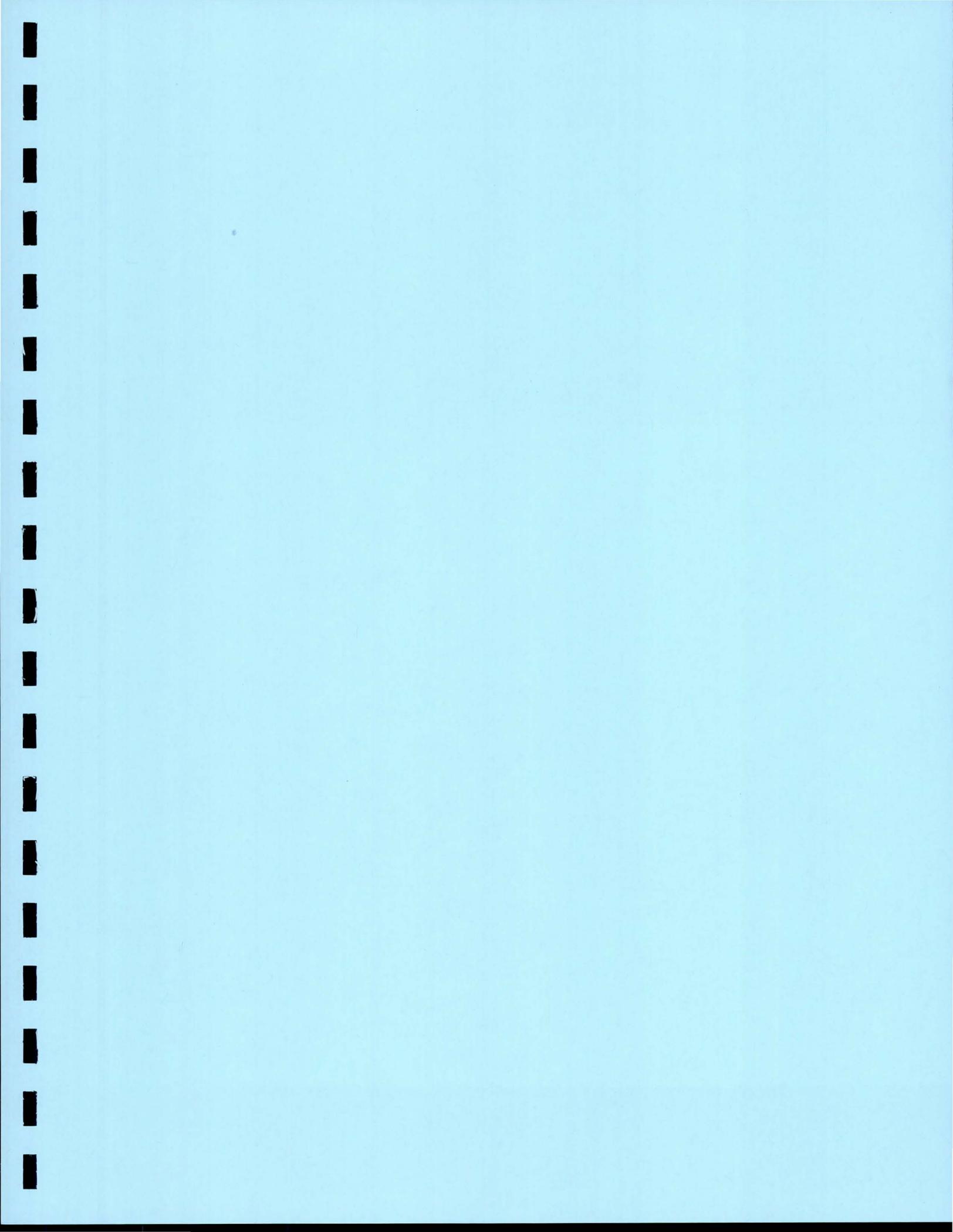
U.S. Army Corps of Engineers

U.S. Bureau of Land Management

Gila River Indian Community

Local Interest

- Sun Chase
- King Ranch
- Phoenix International Raceway



DRAFT
ENVIRONMENTAL STUDY

Gila River from the Confluence of the Salt River
Downstream to Gillespie Dam

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Table 4. Inventory of major perennial flora of the floodplain and adjacent upland.

Key to Legend

| | | | |
|--------------|-------------------|----------------|----------------|
| Tamarisk (T) | Desert Upland (L) | Common (C) | Beneficial (+) |
| Mesquite (M) | Desert Wash (W) | Negligible (O) | Adverse (-) |
| Saltbush (S) | Scrub (B) | Rare (R) | |
| Cattail (K) | Uncommon (U) | Abundant (A) | |

| Common Name | Scientific Name | Major Plant Community Affiliation | Abundance | Impact of Significant Flow Increase | Impact of Significant Flow Decrease |
|--------------------|---------------------------------|-----------------------------------|-----------|-------------------------------------|-------------------------------------|
| Catclaw | <i>Acacia greggii</i> | TMW | U | - | - |
| Pickleweed | <i>Allenrolfea occidentalis</i> | SB | C | - | - |
| Four-wing saltbush | <i>Atriplex canescens</i> | TSL | C | - | - |
| Big saltbush | <i>Atriplex lentiformis</i> | TSB | C | - | - |
| Desert saltbush | <i>Atriplex polycarpa</i> | MSLB | C | long + term | - |
| Seepwillow | <i>Baccharis glutinosa</i> | T | U | - | - |
| Desert broom | <i>Baccharis sarothroides</i> | TMSWB | C | long + term | - |
| Bebbia | <i>Bebbia juncea</i> | W | U | 0 | 0 |
| Saguaro | <i>Carnegiea gigantea</i> | L | U | 0 | 0 |
| Desert hackberry | <i>Celtis pallida</i> | MW | U | - | - |
| Blue paloverde | <i>Cercidium floridum</i> | W | C | 0 | 0 |
| Foothill paloverde | <i>Cercidium microphyllum</i> | L | C | 0 | 0 |
| Desert willow | <i>Chilopsis linearis</i> | MW | U | - | - |
| Gray thorn | <i>Condalia lycioides</i> | LW | U | 0 | - |
| Hedgehog cactus | <i>Echinocereus</i> spp. | L | U | 0 | 0 |
| Brittle bush | <i>Encelia farinosa</i> | L | C | 0 | 0 |
| Mormon tea | <i>Ephedra</i> spp. | L | U | 0 | 0 |
| Barrel cactus | <i>Ferocactus</i> spp. | L | U | 0 | 0 |
| Ocotillo | <i>Fouquieria splendens</i> | L | U-C | 0 | 0 |
| | <i>Franseria ambrosioides</i> | TW | U-C | - | - |

| Common Name | Scientific Name | Major Plant Community Affiliation | Abundance | Impact of Significant Flow Increase | Lot of Significant Flow Decrease |
|------------------------|--------------------------------|-----------------------------------|-----------|-------------------------------------|----------------------------------|
| Triangle bursage | <i>Franseria doltoides</i> | I. | C-A | 0 | 0 |
| White bursage | <i>Franseria dumosa</i> | L | C-A | 0 | + |
| Burrobrush | <i>Hymenoclea monogyra</i> | TW | C | - | + |
| Desert lavender | <i>Hyptis emoryi</i> | L | U | 0 | 0 |
| Range ratany | <i>Krameria parvifolia</i> | L | U-C | 0 | 0 |
| Creosote bush | <i>Larrea tridentata</i> | L | A | 0 | + |
| Desert thorn | <i>Lycium</i> spp. | TMSLW | U-C | - | + |
| Fishhook cactus | <i>Mammillaria</i> spp. | L | U | 0 | 0 |
| Tree tobacco | <i>Nicotiana</i> spp. | TW | U | 0 | - |
| Ironwood | <i>Olneya tesota</i> | MW | U-C | - | - |
| Cholla or prickly pear | <i>Opuntia</i> spp. | L | C | 0 | 0 |
| Mistletoe | <i>Phoradendron</i> spp. | MLW | U | - | - |
| Arrowweed | <i>Pluchea sericea</i> | TSB | U | - | - |
| | | | | long + term | |
| Cottonwood | <i>Populus fremontii</i> | T | R | - | - |
| Mesquite | <i>Prosopis juliflora</i> | TMSW | C | - | - |
| Screwbean | <i>Prosopis pubescens</i> | TMSW | U | - | - |
| Willow | <i>Salix</i> spp. | T | R | - | - |
| Greasewood | <i>Sarcobatus vermiculatus</i> | SB | C | - | - |
| Bulrush | <i>Scirpus olneyi</i> | K | R | - | - |
| Jojoba | <i>Simmondsia chinensis</i> | L | U-C | 0 | 0 |
| Seepweed | <i>Suaeda torreyana</i> | TSB | C | - | - |
| | | | | long + term | |
| Athel | <i>Tamarix aphylla</i> | T | U | - | - |
| Tamarisk (saltcedar) | <i>Tamarix pentandra</i> | TMSB | A | - | - |
| | | | | long+ term | |
| Cattail | <i>Typha</i> spp. | K | R | - | - |
| | | | | long + ?term | |

Table 5. Inventory of birds in the study area.

to Legend

= Common
 = Irregular
 = Uncommon
 = Accidental

F = Fall
 R = Resident
 Sp = Spring
 S = Summer

V = Vistant
 W = Winter
 * = Breeding
 ** = Predicted
 R = Resident

- = Species which will be lost or greatly reduced in number if water and/or riparian vegetation were not present.

| <u>COMMON NAME</u> | <u>SCIENTIFIC NAME</u> | <u>REMARKS</u> (See also Appendix A) |
|---------------------------|----------------------------------|--------------------------------------|
| Red Grebe | <u>Podiceps caspicus</u> | - UWV |
| Red-billed Grebe | <u>Podilymbus podiceps</u> | *- UR |
| White Pelican | <u>Pelecanus erythrorhynchos</u> | - IV |
| Double-crested Cormorant | <u>Phalacrocorax auritus</u> | - USpFT |
| Great Blue Heron | <u>Ardea herodias</u> | - CT & WV 1 |
| Green Heron | <u>Butorides virescens</u> | *- CR |
| Common Egret | <u>Casmerodius albus</u> | - USpFT |
| Snowy Egret | <u>Leucophoyx thula</u> | - CSpFT |
| Black Crowned Night Heron | <u>Nycticorax nycticorax</u> | - UT |
| Least Bittern | <u>Ixobrychus exilis</u> | *- USR 2 |
| American Bittern | <u>Botaurus lentiginosus</u> | - UT 3 |
| Wood Ibis | <u>Mycteria americana</u> | - IV |
| White-faced Ibis | <u>Plegadis chihi</u> | - CSpFT |
| Least Spoonbill | <u>Ajaia ajaja</u> | - A 4 |
| Canada Goose | <u>Branta canadensis</u> | - CWV |
| Whooping Goose | <u>Chen hyperborea</u> | - UWV |
| Black-bellied Tree Duck | <u>Dendrocygna autumnalis</u> | - USR |
| Worm-eating Warbler | <u>Anas platyrhynchos</u> | - CWV |
| Blue-winged Teal | <u>Anas strepera</u> | -** UWV |
| Green-winged Teal | <u>Anas Acuta</u> | - CWV |
| Blue-winged Teal | <u>Anas carolinensis</u> | - CWV |
| Common Noddy | <u>Anas discors</u> | - USpFT |
| American Coot | <u>Anas crecca</u> | - CWV |
| American Widgeon | <u>Mareca americana</u> | - CWV |
| Greater Scaup | <u>Spatula clypeata</u> | - CWV |
| Wood Duck | <u>Aix sponsa</u> | - A 5 |

| <u>COMMON NAME</u> | <u>SCIENTIFIC NAME</u> | <u>REMARKS</u> |
|-----------------------------------|-----------------------------|----------------|
| Redhead | <u>Aythya americana</u> | - UWV |
| Ring-necked Duck | <u>Aythya collaris</u> | -** |
| Canvasback | <u>Aythya valisineria</u> | - UWV |
| Lesser Scaup | <u>Aythya affinis</u> | - UWV |
| Bufflehead | <u>Bucephala albeola</u> | - UWV |
| Oldsquaw | <u>Clangula hyemalis</u> | - A |
| Ruddy Duck | <u>Oxyura jamaicensis</u> | -* UR |
| Common Merganser | <u>Mergus Merganser</u> | - UWV |
| Red-breasted Merganser | <u>Mergus serrator</u> | - USpFT |
| Turkey vulture | <u>Cathartes aura</u> | * UR |
| Black vulture | <u>Coragyps atratus</u> | IV |
| Goshawk | <u>Accipiter gentilis</u> | A |
| Sharp-shinned Hawk | <u>Accipiter striatus</u> | - UWV |
| Cooper's Hawk | <u>Accipiter cooperii</u> | - UWV |
| Red-tailed Hawk | <u>Buteo jamaicensis</u> | * CR |
| Swainson's Hawk | <u>Buteo swainsoni</u> | USpT |
| Rough-legged Hawk | <u>Buteo lagopus</u> | A |
| Harris' Hawk | <u>Parabuteo unicinctus</u> | ? |
| Marsh Hawk | <u>Circus cyaneus</u> | CWV |
| Osprey | <u>Pandion haliaetus</u> | - USpFT |
| Prairie Falcon | <u>Falco mexicanus</u> | * UR |
| Peregrine Falcon | <u>Falco peregrinus</u> | - UWV |
| Pigeon Hawk | <u>Falco columbarius</u> | UT |
| Sparrow Hawk | <u>Falco sparverius</u> | * CR |
| Gambel's Quail | <u>Lophortyx gambelii</u> | * CR |
| Sandhill Crane | <u>Grus canadensis</u> | - IWV |
| Clapper Rail (endangered species) | <u>Rallus longirostris</u> | -* USR? |
| Virginia Rail | <u>Rallus limicola</u> | -* UR |
| Sora | <u>Porzana carolina</u> | -* UWV(R?) |
| Common Gallinule | <u>Gallinula chloropus</u> | -* CR |
| American Coot | <u>Fulica americana</u> | -* CR |
| Killdeer | <u>Charadrius vociferus</u> | -* CR |
| Common Snipe | <u>Capella gallinago</u> | - CWV |
| Spotted Sanderpiper | <u>Actitis macularia</u> | - CWV |
| Solitary Sandpiper | <u>Tringa solitaria</u> | - USpFT |
| Greater Yellowlegs | <u>Totanus melanoleucus</u> | - UWV |
| Lesser Yellowlegs | <u>Totanus flavipes</u> | - USpFT |

| | <u>COMMON NAME</u> | <u>SCIENTIFIC NAME</u> | <u>REMARKS</u> | |
|----|---------------------------|---------------------------------|----------------|----|
| | Pectoral Sanderpiper | <u>Erolia melanotos</u> | - UFT | |
| | Bairds Sandpiper | <u>Erolia bairdii</u> | - UFT | |
| | Least Sandpiper | <u>Erolia minutilla</u> | - CWV | |
| | Long-billed Dowitcher | <u>Limnodromus scolopaceus</u> | - CSpFT | |
| | stilt Sandpiper | <u>Micropalama himantopus</u> | - A | 15 |
| 6 | Western Sandpiper | <u>Ereunetes mauri</u> | - USpFT | |
| | American Avocet | <u>Recurvirostra americana</u> | - USpFT | 16 |
| | Black-necked Stilt | <u>Himantopus mexicanus</u> | -* USR | 17 |
| | Wilson's Phalarope | <u>Steganopus tricolor</u> | - CSpFT | |
| | Northern Phalarope | <u>Lobipes lobatus</u> | - USpFT | 18 |
| | Ring-billed Gull | <u>Larus delawarensis</u> | -** | |
| 7 | Bonaparte's Gull | <u>Larus philadelphia</u> | - USpFT | 19 |
| | Common Tern | <u>Sterna hirundo</u> | - A | 20 |
| 8 | White-winged Dove | <u>Zenaida asiatica</u> | -* CSR | 21 |
| | Mourning Dove | <u>Zenaidura macroura</u> | -* CR | 22 |
| | Ground Dove | <u>Columbigallina passerina</u> | -* UR | |
| 9 | Inca Dove | <u>Scardafella inca</u> | -* CR | |
| 10 | Yellow-billed Cuckoo | <u>Coccyzus americanus</u> | -* USR | |
| | Roadrunner | <u>Geococcyx californianus</u> | * CR | |
| | Barn Owl | <u>Tyto alba</u> | -** | |
| | Screech Owl | <u>Otus asio</u> | -*? R? | 23 |
| | Great Horned Owl | <u>Bubo virginianus</u> | -** | |
| | Burrowing Owl | <u>Speotyto cunicularia</u> | * UR | |
| | Lesser Nighthawk | <u>Chordeiles acutipennis</u> | * CSR | |
| | White-throated Swift | <u>Aeronautes saxatalis</u> | UIV | |
| | Black-chinned Hummingbird | <u>Archilochus alexandri</u> | -* CSR | |
| 11 | Costa's Hummingbird | <u>Calypte costae</u> | * CSR | |
| 12 | Anna's Hummingbird | <u>Calypte anna</u> | -*? U? | 24 |
| 13 | Rufous Hummingbird | <u>Salasphorus rufus</u> | - UFT | |
| 14 | Belted Kingfisher | <u>Megaceryle alcyon</u> | - UWV | |
| | Yellow-shafted Flicker | <u>Colaptes auratus</u> | A | 25 |
| | Red-shafted Flicker | <u>Colaptes cafer</u> | - CWV | |
| | Gilded Flicker | <u>Colaptes chrysoides</u> | -* UR | |
| | Gila Woodpecker | <u>Centurus uropygialis</u> | -* CR | |
| | Ladder-backed Woodpecker | <u>Dendrocopos scalaris</u> | -* UR | 26 |

| <u>COMMON NAME</u> | <u>SCIENTIFIC NAME</u> | <u>REMARKS</u> |
|---------------------------|--|-----------------------|
| Western Kingbird | <u>Tyrannus verticalis</u> | -* CSR |
| Cassin's Kingbird | <u>Tyrannus vociferans</u> | - UT |
| Wied's Crested Flycatcher | <u>Myiarchus tyrannulus</u> | -* USR |
| Ash-throated Flycatcher | <u>Myiarchus cinerascens</u> | -* CSR |
| Black Phoebe | <u>Sayornis nigricans</u> | -* UR |
| Say's Phoebe | <u>Sayornis saya</u> | IWV |
| Empidonax Flycatchers | <u>Empidonax spp.</u> | - |
| Western Wood Pewee | <u>Contopus sordidulus</u> | - CS _{sp} FT |
| Vermilion Flycatcher | <u>Pyrocephalus rubinus</u> | - UW7 |
| Horned Lark | <u>Eremophila alpestris</u> | CW7 |
| Violet-green Swallow | <u>Tachycineta thalassina</u> | CS _{sp} FT |
| Tree Swallow | <u>Iridoprocne bicolor</u> | US _{sp} FT |
| Rough-winged Swallow | <u>Stelgidopteryx ruficollis</u> | -* USR |
| Barn Swallow | <u>Hirundo rustica</u> | CS _{sp} FT |
| Cliff Swallow | <u>Petrochelidon pyrrhonota</u> | -* USR |
| Purple Martin | <u>Progne subis</u> | UT |
| Scrub Jay | <u>Aphelocoma coerulescens</u> | IWV |
| Common Raven | <u>Corvus corax</u> | * UR |
| Verdin | <u>Auriparus flaviceps</u> | * CR |
| House Wren | <u>Troglodytes aedon</u> | - UWV |
| Bewick's Wren | <u>Thryomanes bewickii</u> | - UWV |
| Cactus Wren | <u>Campylorhynchus brunneicapillus</u> | *CR |
| Long-billed Marsh Wren | <u>Telmatodytes palustris</u> | -* UR |
| Rock Wren | <u>Salpinctes obsoletus</u> | * UR |
| Mockingbird | <u>Mimus polyglottos</u> | -* UR |
| Bendire's Thrasher | <u>Toxostoma bendirei</u> | * UR |
| Curve-billed Thrasher | <u>Toxostoma curvirostre</u> | * CR |
| Crissal Thrasher | <u>Toxostoma dorsale</u> | -* CR |
| Sage Thrasher | <u>Oreoscoptes montanus</u> | IWV |
| Robin | <u>Turdus migratorius</u> | - IWV |
| Hermit Thrush | <u>Hylocichla guttata</u> | - WV? |
| Western Bluebird | <u>Sialia mexicana</u> | - IWV |
| Mountain Bluebird | <u>Sialia currucoides</u> | IWV |
| Black-tailed Gnatcatcher | <u>Polioptila melanura</u> | -* UR |
| Ruby-crowned Kinglet | <u>Regulus calendula</u> | - CWV |
| Water Pipit | <u>Anthus spinoletta</u> | - CWV |

| | <u>COMMON NAME</u> | <u>SCIENTIFIC NAME</u> | <u>REMARKS</u> | |
|----|-----------------------------|--------------------------------------|----------------|------|
| | Phainopepla | <u>Phainopepla nitens</u> | *? SR? | 34 |
| | Loggerhead Shrike | <u>Lanius ludovicianus</u> | * UR | |
| | Starling | <u>Sturnus vulgaris</u> | -* CR | 35 |
| | Bell's Vireo | <u>Vireo belli</u> | -* USR | 36 |
| | Solitary Vireo | <u>Vireo solitarius</u> | -* USpFT | |
| | Warbling Vireo | <u>Vireo gilvus</u> | - USpFT | |
| | Orange-crowned Warbler | <u>Vermivora celata</u> | - UWV | |
| | Nashville Warbler | <u>Vermivora ruficapilla</u> | - USpFT | |
| | Lucy's Warbler | <u>Vermivora luciae</u> | -* USR | 37 |
| | Yellow Warbler | <u>Dendroica petechia</u> | -* USR | |
| | Audubon's Warbler | <u>Dendroica auduboni</u> | - CWV | |
| | Black-throated Gray Warbler | <u>Dendroica nigrescens</u> | - USpFT | |
| | Townsend's Warbler | <u>Dendroica townsendi</u> | - USpFT | |
| | MacGillivray's Warbler | <u>Oporornis tolmiei</u> | - CSpFT | |
| | Yellowthroat | <u>Geothlypis trichas</u> | -* USR | |
| 29 | Yellow-breasted Chat | <u>Icteria virens</u> | -* CSR | |
| | Wilson's Warbler | <u>Wilsonia pusilla</u> | - CSpFT | |
| | English Sparrow | <u>Passer domesticus</u> | -* CR | |
| | Eastern Meadowlark | <u>Sturnella magna</u> | - UWV | 38 |
| | Western Meadowlark | <u>Sturnella neglecta</u> | -* CR | |
| | Yellow-headed Blackbird | <u>Xanthocephalus xanthocephalus</u> | CR -* | 39 |
| | Red-winged Blackbird | <u>Agelaius phoeniceus</u> | -* CR | 40 |
| 31 | Hooded Oriole | <u>Icterus cucullatus</u> | -* USR | 41 |
| | Bullock's Oriole | <u>Icterus bullockii</u> | -* USR | 41 & |
| | Brewer's Blackbird | <u>Euphagus cyanocephalus</u> | - CWV | |
| | Boat-tailed Grackle | <u>Cassidix mexicanus</u> | -* UR | 42 |
| | Brown-headed Cowbird | <u>Molothrus ater</u> | -* CR | 43 |
| | Bronzed Cowbird | <u>Tangavius aeneus</u> | -* SR | 41 |
| | Western Tanager | <u>Piranga ludoviciana</u> | CSpFT | |
| | Cardinal | <u>Richmondia cardinalis</u> | -* CR | |
| 32 | Black-headed Grosbeak | <u>Pheucticus melanocephalus</u> | - CSpFT | |
| | Blue Grosbeak | <u>Guiraca caerulea</u> | -* CSR | |
| | Lazuli Bunting | <u>Passerina amoena</u> | - ISpFT | |
| 33 | House Finch | <u>Carpodacus mexicanus</u> | -* CR | |
| | Lesser Goldfinch | <u>Spinus psaltria</u> | -* UR | |
| | Lawrence's Goldfinch | <u>Spinus lawrencei</u> | - IWV | |

| <u>COMMON NAME</u> | <u>SCIENTIFIC NAME</u> | <u>REMARKS</u> |
|------------------------|----------------------------------|----------------|
| Green-tailed Towhee | <u>Chlorura chlorura</u> | - CWV |
| Rufous-sided Towhee | <u>Pipilo erythrophthalmus</u> | - UWV |
| Abert's Towhee | <u>Pipilo aberti</u> | -* CR |
| Lark Bunting | <u>Calamospiza melanocorys</u> | UWV |
| Savannah Sparrow | <u>Passerculus sandwichensis</u> | - CWV |
| Vesper Sparrow | <u>Poocetes gramineus</u> | CWV |
| Lark Sparrow | <u>Chondestes grammacus</u> | CWV |
| Black-throated Sparrow | <u>Amphispiza bilineata</u> | * UR |
| Sage Sparrow | <u>Amphispiza belli</u> | CWV |
| Slate-colored Junco | <u>Junco hyemalis</u> | - A |
| Oregon Junco | <u>Junco oreganus</u> | - UWV |
| Gray-headed Junco | <u>Junco caniceps</u> | - UWV |
| Chipping Sparrow | <u>Spizella passerina</u> | - UWV |
| Brewer's Sparrow | <u>Spizella breweri</u> | CWV |
| White-crowned Sparrow | <u>Zonotrichia leucophrys</u> | CWV |
| Lincoln's Sparrow | <u>Melospiza lincolni</u> | - UWV |
| Song Sparrow | <u>Melospiza melodia</u> | -* CR |

Table 6. Inventory of reptiles and amphibians in the study area.

Legend for Tables 5 through 7

+ = Enhancement to species populations
 - = Detrimental to species populations
 0 = Probably no effect on species populations
 A = Abundant

C = Common
 U = Uncommon
 R = Rare
 B = Breeding

* = Unlikely to occur in study area
 ** = Rare and/or endangered

Decrease Flow = Presumed decrease in density of vegetation

Increase Flow = Presumed increase in density of vegetation but no large-scale flooding or overflow

Flooding = Presumed periodic covering of floodplain by water and/or scouring floods that do considerable damage to vegetation

| Scientific Name | Common Name | Relative Abundance | Aquatic or Riparian Dependency | Effect on Numbers of Individuals | | | |
|-------------------------------|---------------------|--------------------|--------------------------------|----------------------------------|---------------|---------------|--------------|
| | | | | Eliminate Flow | Decrease Flow | Increase Flow | Flooding |
| <u>Ambystoma tigrinum</u> | Tiger Salamander | ? | Absolute (B) | - | - | + | + |
| <u>Scaphiopus couchi</u> | Couch's Spadefoot | C | Absolute (B) | - | - | + | + |
| <u>Scaphiopus hammondi</u> | Western Spadefoot | C? | Absolute (B) | - | - | + | + |
| <u>Bufo cognatus</u> | Great Plains Toad | C | Absolute (B) | - | - | + | + |
| <u>Bufo alvarius</u> | Colorado River Toad | C | Absolute (B) | - | - | + | + |
| <u>Bufo woodhousei</u> | Woodhouse's Toad | C? | Absolute (B) | - | - | + | + |
| <u>Bufo punctatus</u> | Red-spotted Toad | C | Absolute (B) | - | - | + | + |
| <u>Rana pipiens</u> | Leopard Frog | C | Absolute (B) | - | - | + | + |
| <u>Rana catesbeiana</u> | Bullfrog | C | Absolute (B) | - | - | + | + |
| <u>Kinosternon sonoriense</u> | Sonora Mud Turtle | U? | Absolute (B) | - | - | + | + |
| <u>Gopherus agassizii</u> | Desert Tortoise | + | None | 0 | 0 | 0 | - |
| <u>Trionyx spiniferus</u> | Texas Softshell | U? | Absolute (B) | - | - | + | + |
| <u>Coleonyx variegatus</u> | Banded Gecko | U? | None (B) | 0 | 0 | 0 | - |
| <u>Sauromalus obesus</u> | Chuckwalla | * | None | 0 | 0 | 0 | - If present |
| <u>Dipsosaurus dorsalis</u> | Desert Iguana | U? | None | 0 | 0 | 0 | - |

| Scientific Name | Common Name | Relative Abundance | Aquatic or Riparian Dependency | Effect on Numbers of Individuals | | | |
|----------------------------------|---------------------------|--------------------|--------------------------------|----------------------------------|---------------|---------------|--------------|
| | | | | Eliminate Flow | Decrease Flow | Increase Flow | Flooding |
| <u>Holbrookia texana</u> | Greater Earless Lizard | C | None (B) | 0 or +? | 0 | 0 | - |
| <u>Holbrookia maculata</u> | Lesser Earless Lizard | U | None | 0 | 0 | 0 | - |
| <u>Crotaphytus wislizeni</u> | Leopard Lizard | * | None | 0 | 0 | 0 | -if present |
| <u>Crotaphytus collaris</u> | Collared Lizard | * | None | 0 | 0 | 0 | -if present |
| <u>Sceloporus magister</u> | Desert Spiny Lizard | U | None (B) | 0 | 0 | 0 | - |
| <u>Sceloporus clarki</u> | Sonora Spiny Lizard | U | None (B) | - | - | + | - |
| <u>Urosaurus ornatus</u> | Tree Lizard | C | Slight (B) | - | - | + | - |
| <u>Uta stansburiana</u> | Side-blotched Lizard | C | None (B) | - | 0 | 0 | - |
| <u>Phrynosoma solare</u> | Regal Horned Lizard | U | None | ? | 0 | ? | - |
| <u>Cnemidophorus tigris</u> | Western Whiptail | A | None (B) | - | - | + | - |
| <u>Heloderma suspectum</u> | Gila Monster | * | None | - | - | + | - If present |
| <u>Leptotyphlops humilis</u> | Western Blind Snake | U | Slight (B) | - | - | + | - |
| <u>Phyllorhynchus decurtatus</u> | Spotted Leaf-nosed Snake | * | None | ? | ? | - | - If present |
| <u>Masticophis flagellum</u> | Coachwhip | C | None (B) | - | - | + | - |
| <u>Masticophis bilineatus</u> | Sonora Whipsnake | U | Slight | - | - | + | - |
| <u>Diadophis punctatus</u> | Regal Ring-necked Snake | * | Moderate | - | - | + | -if present |
| <u>Salvadora hexalepis</u> | Desert Patch-nosed Snake | * | None | ? | ? | ? | -if present |
| <u>Pituophis melanoleucus</u> | Gopher Snake | C | None (B) | - | - | + | - |
| <u>Arizona elegans</u> | Glossy Snake | U | None (B) | - | - | + | - |
| <u>Lampropeltis getulus</u> | Common Kingsnake | U | Slight (B) | - | - | + | - |
| <u>Rhinocheilus lecontei</u> | Long-nosed Snake | C | None (B) | - | ? | ? | - |
| <u>Thamnophis maroianus</u> | Checkered Garter Snake | C | Moderate (B) | - | - | + | 1? |
| <u>Thamnophis cyrtopsis</u> | Black-necked Garter Snake | C+ | Strong | - | - | + | 1? |

Chionactis occipitalis western Ground Snake U
 Western Shovel-nosed Snake
 None (B) 0 0 -2 1?

| Scientific Name | Common Name | Relative Abundance | Aquatic or Riparian Dependency | Effect on Numbers of Individuals | | | |
|--------------------------------|------------------------------------|--------------------|--------------------------------|----------------------------------|---------------|---------------|----------|
| | | | | Eliminate Flow | Decrease Flow | Increase Flow | Flooding |
| <u>Chilomeniscus cinctus</u> | Banded Burrowing Snake | * | None | 0 | 0 | - | - |
| <u>Tantilla planiceps</u> | Desert Black-headed Snake | ? | Moderate (B) | - | ? | + | - |
| <u>Thamnophis eques</u> | Mexican Garter Snake | U | Strong (B) | - | - | + | +? |
| <u>Hypsiglena torquata</u> | Night Snake | C | None (B) | - | - | + | - |
| <u>Trimorphodon lambda</u> | Lyre Snake | * | Slight (B) | ? | 0 | 0 | - |
| <u>Micruroides euryxanthus</u> | Arizona Coral Snake | U | None (B) | ? | ? | ? | - |
| <u>Crotalus atrox</u> | Western Diamond-backed Rattlesnake | C | None (B) | - | - | + | - |
| <u>Crotalus molossus</u> | Black-tailed Rattlesnake | ? | Slight | - | - | + | - |
| <u>Crotalus cerastes</u> | Sidewinder | * | None (B) | +? | +? | ? | - |
| <u>Crotalus scutulatus</u> | Mohave Rattlesnake | C | None (B) | - | - | + | - |

Table 7. Inventory of mammals in the study area.

| Scientific Name | Common Name | Relative Abundance | Aquatic or Riparian Dependency | Effect on numbers of Individuals | | | |
|----------------------------------|------------------------------|--------------------|--------------------------------|----------------------------------|---------------|---------------|----------|
| | | | | Eliminate Flow | Decrease Flow | Increase Flow | Flooding |
| <u>Notiosorex crawfordi</u> | Desert Shrew | U | None (B) | - | ? | ? | - |
| <u>Macrotus californicus</u> | California Leaf-nosed Bat | ? | None ? Foraging Sites | - | - | + | 0 or + |
| <u>Myotis yumanensis</u> | Yuma Myotis | C | " | - | - | + | 0 or + |
| <u>Myotis velifer</u> | Cave Myotis | ? | " | - | - | + | 0 or + |
| <u>Myotis californicus</u> | California Myotis | ? | " | - | - | + | 0 or + |
| <u>Pipistrellus hesperus</u> | Western Pipistrelle | C | " | - | - | + | 0 or + |
| <u>Eptesicus fuscus</u> | Big Brown Bat | ? | " | - | - | + | 0 or + |
| <u>Lasiurus cinereus</u> | Hoary Bat | ? | " | - | - | + | 0 or + |
| <u>Euderma maculata</u> ** | Spotted Bat | R | " | - | - | + | 0 or + |
| <u>Antrozous pallidus</u> | Pallid Bat | C | " | - | - | + | 0 or + |
| <u>Tadarida brasiliensis</u> | Mexican Free-tailed Bat | U | " | - | - | + | 0 or + |
| <u>Eumops perotis</u> | Western Mastiff Bat | U | " | - | - | + | 0 or + |
| <u>Lepus californicus</u> | Black-tailed Jack Rabbit | C | None (B) | - | 0 | 0 | - |
| <u>Sylvilagus auduboni</u> | Desert Cottontail | C | Slight (B) | - | - | + | - |
| <u>Citellus variegatus</u> | Rock Squirrel | U | None | - | 0 | 0 | - |
| <u>Ammospermophilus harrisi</u> | Harris' Antelope Squirrel | U | None | +? | +? | 0 | - |
| <u>Spermophila tereticauda</u> | Round-tailed Ground Squirrel | C | None (B) | -? | 0 | 0? | - |
| <u>Thomomys bottae</u> | Valley Pocket Gopher | C | Slight (B) | - | - | + | - |
| <u>Perognathus longimembris</u> | Little Pocket Mouse | * | None | ? | 0? | 0? | - |
| <u>Perognathus amplus</u> | Arizona Pocket Mouse | C | None (B) | 1? | 0 | 0 | - |
| <u>Perognathus penicillatus</u> | Desert Pocket Mouse | ? | None (B) | + | + | - | - |
| <u>Perognathus intermedius</u> | Rock Pocket Mouse | * | None | + | + | 0 | - |
| <u>Dipodomys merriami</u> | Merriam's Kangaroo Rat | C | None (B) | + | + | - | - |
| <u>Dipodomys ordi</u> | Ord's Kangaroo Rat | ? | None (B) | + | + | - | - |
| <u>Dipodomys deserti</u> | Desert Kangaroo Rat | * | None | + | + | - | - |
| <u>Castor canadensis</u> | Beaver | R | Absolute | - | - | + | +? |
| <u>Onychomys torridus</u> | Southern Grasshopper Mouse | U? | None | ? | ? | ? | - |
| <u>Reithrodontomys merulotis</u> | Western Harvest Mouse | U? | None | - | - | + | - |
| <u>Peromyscus eremicus</u> | Cactus Mouse | + | None | 1? | 1? | - | - |
| <u>Peromyscus maniculatus</u> | Deer Mouse | A? | None (B) | - | - | + | - |

| Scientific Name | Common Name | Relative Abundance | Aquatic or Riparian Dependency | Effect on Numbers of Individuals | | | |
|---------------------------------|-------------------------|--------------------|--------------------------------|----------------------------------|---------------|---------------|----------|
| | | | | Eliminate Flow | Decrease Flow | Increase Flow | Flooding |
| <u>Sigmodon hispidus</u> | Hispid Cotton Rat | U | Slight | - | - | + | +? |
| <u>Neotoma albigula</u> | White-throated Wood Rat | * | None? | 0 | 0 | 0 | - |
| <u>Neotoma lepida</u> | Desert Wood Rat | * | None | 0 | 0 | 0 | - |
| <u>Ondatra zibethicus</u> | Muskrat | U | Absolute (B) | - | - | + | + |
| <u>Mus musculus</u> | House Mouse | U? | None | 0? | 0 | 0? | 0 or- |
| <u>Erethizon dorsatum</u> | Porcupine | U | Moderate | - | - | + | -? |
| <u>Canis latrans</u> | Coyote | C | None (B) | - | - | + | - |
| <u>Vulpes macrotis</u> | Kit Fox | U | None | 0 | 0 | 0 | - |
| <u>Urocyon cinereoargenteus</u> | Gray Fox | * | Slight | - | - | + | - |
| <u>Bassariscus astutus</u> | Ringtail | * | None | - | - | + | - |
| <u>Procyon lotor</u> | Raccoon | C | Strong(B) | - | - | + | -? |
| <u>Nasua narica</u> | Coati | * | None? | - | - | + | - |
| <u>Taxidea taxus</u> | Badger | U? | None(B) | - | 0? | 0? | - |
| <u>Spilogale putorius</u> | Spotted Skunk | * | None | - | - | + | - |
| <u>Mephitis mephitis</u> | Striped Skunk | C | None(B) | - | - | + | - |
| <u>Mephitis macroura</u> | Hooded Skunk | * | None | - | - | + | - |
| <u>Conepatus mesoleucus</u> | Hog-nosed Skunk | * | None | - | - | + | - |
| <u>Felis onca</u> | Jaguar | * | None? | 0 | 0 | 0 | 0 |
| <u>Felis pardalis</u> | Ocelot | * | None? | 0 | 0 | 0 | 0 |
| <u>Felis concolor</u> | Mountain Lion | R | None | - | 0 | 0 | - |
| <u>Lynx rufus</u> | Bobcat | U | None(B) | - | - | + | - |
| <u>Tayassu tajacu</u> | Javelina | U | Slight? | - | - | + | - |
| <u>Odocoileus hemionus</u> | Mule Deer | U | Slight | - | 0 | 0 | - |
| <u>Odocoileus virginianus</u> | White-tailed Deer | U | Slight | - | 0 | 0 | - |

Table 8. Inventory of fish in the study area.

| Scientific Name | Common Name | Effect on Numbers of Individuals | | | |
|-------------------------------------|--------------------------|----------------------------------|------------------|------------------|----------|
| | | Eliminate Flow | Decrease Flow | Increase Flow | Flooding |
| NATIVE SPECIES | | | | | |
| <u>Gila elegans</u> ** | Boneytail Chub | | | | |
| <u>Gila robusta</u> | Roundtail Chub | | | | |
| <u>Gila intermedia</u> | Gila Chub | | | | |
| <u>Meda fulgida</u> ** | Gila Spinedace | | | | |
| <u>Plagopterus argentissimus</u> ** | Woundfin | | | | |
| <u>Ptychochellus lucius</u> ** | Colorado River Squawfish | | | | |
| <u>Agosia chrysogaster</u> | Longfin Dace | | | | |
| <u>Rhinichthys osculus</u> | Speckled Dace | | | | |
| <u>Tiaroga cobitis</u> ** | Loach Minnow | | | | |
| <u>Catostomus insignis</u> | Gila Sucker | - | - | + | + |
| <u>Catostomus latipinnis</u> | Flannelmouth Sucker | | | | |
| <u>Pantosteus clarki</u> | Gila Mountain | - | - | + | - |
| <u>Xyrauchen texanus</u> ** | Razorback Sucker | | | | |
| <u>Cyprinodon macularius</u> | Desert Pupfish | | | | |
| <u>Poeciliopsis occidentalis</u> ** | Gila Topminnow | | | | |
| INTRODUCED SPECIES | | | | | |
| <u>Dorosoma petenense</u> | Threadfin Shad | - | - | + | + |
| <u>Cyprinus carpio</u> | Carp | - | - | + | + |
| <u>Carassius auratus</u> | Goldfish | - | - | + | + |
| <u>Notemigonus crysoleucas</u> | Golden Shiner | - | - | + | + |
| <u>Notropis lutrensis</u> | Red Shiner | - | - | + | + |
| <u>Pimephales promelas</u> | Flathead Minnow | - | - | + | + |
| <u>Ictalurus punctatus</u> | Eastern Channel Catfish | - | - | + | + |
| <u>Ictalurus melas</u> | Black Bullhead | - | - | + | + |
| <u>Ictalurus natalis</u> | Yellow Bullhead | - | - | + | + |
| <u>Poecilia latipinna</u> | Ballfin Molly | - | - | + | + |
| <u>Poecilia mexicana</u> | Mexican Molly | - | - | + | + |
| <u>Lebistes reticulatus</u> | Guppy | - | - | + | + |
| <u>Xiphophorus variatus</u> | Variegated Platyfish | - | - | + | + |

| Scientific Name | Common Name | Effect on numbers of Individuals | | | |
|-------------------------------|---------------------|----------------------------------|---------------|---------------|----------|
| | | Eliminate Flow | Decrease Flow | Increase Flow | Flooding |
| <u>Gambusia affinis</u> | Mosquitofish | - | - | + | + |
| <u>Micropterus salmoides</u> | Largemouth Bass | - | - | + | + |
| <u>Lepomis macrochirus</u> | Bluegill | - | - | + | + |
| <u>Lepomis microlophus</u> | Redear Sunfish | - | - | + | + |
| <u>Lepomis cyanellus</u> | Green Sunfish | - | - | + | + |
| <u>Pomoxis nigromaculatus</u> | Black Crappie | - | - | + | + |
| <u>Tilapia mossambica</u> | Mossambique Tilapia | - | - | + | + |