

9.0 PUBLIC INVOLVEMENT

9.1 SOLICITATION LETTERS



Project Team at June 2005 public meeting in Tulsa

Solicitation letters requesting input to the Phase II process were distributed to 24 different public agencies and other concerned groups. The recipients were requested to respond within 14 days and forward their comments or concerns. Upon receipt of comments, issues requiring action or special attention were incorporated into the Master Plan. Copies of the distributed solicitation letters and responses are provided in Appendix B. Table 9.1-1 identifies the recipients and summarizes the agency comments received.

Table 9.1-1  
Solicitation Letter Summary

Recipient	Distribution Date	Response Date	Comments
Senator Jim Inhofe	12/01/2004	NR	N/A
Representative John Sullivan	12/01/2004	NR	N/A
Representative Dan Boren	12/01/2004	NR	N/A
Senator Tom Coburn	12/01/2004	NR	N/A
Richard Green - EPA	12/01/2004	NR	N/A
Don Klima - Advisory Council on Historic Preservation	12/01/2004	NR	N/A
Bob Blackburn - Oklahoma Historical Society	12/01/2004	12/23/2004	Concerns regarding impact on National Register of Historic Places eligible properties in Tulsa County, eligible properties not yet assessed and possible archeological sites. Field reviews may be necessary.

**Table 9.1-1, continued**  
**Solicitation Letter Summary**

Recipient	Distribution Date	Response Date	Comments
Mike Thralls – Oklahoma Conservation Commission	12/01/2004	NR	N/A
Jerry Brabander – US Fish & Wildlife Service	12/01/2004	NR	N/A
Steve Thompson – Oklahoma Department of Environmental Quality	12/01/2004	NR	N/A
Robert Brooks – Oklahoma Archeological Survey	12/01/2004	12/13/2004	Requires additional information and exact location of areas involved. Requests project area be plotted on USGS topographic map.
Kathy Peter – US Geological Survey	12/01/2004	NR	N/A
Gary Bishop – Natural Resources Conservation Service	12/01/2004	12/20/2004	Concerns about Prime Farmland subject to the Prime Farmland Provision Act. Requires that Form AD-1006 be completed.
Darrell Dominick – US Department of Agriculture	12/01/2004	NR	N/A
Gary McAdams – Wichita and Affiliated Tribes of Oklahoma	12/01/2004	NR	N/A

NR – No Response, N/A – Not Applicable

**Table 9.1-1, continued**  
**Solicitation Letter Summary**

Recipient	Distribution Date	Response Date	Comments
Richard Allen – Cherokee Nation of Oklahoma	12/01/2004	NR	N/A
Joyce Bear – Muscogee (Creek) Nation	12/01/2004	NR	N/A
Anthony Whitehorn – Osage Nation	12/01/2004	12/15/2004	Possible religious and/or cultural significance to Osage Tribe. Requests that if artifacts are found, construction should be halted so evaluations can be made.
Emman Spain – Seminole Nation	12/01/2004	NR	N/A
Micky Webb – City of Bixby	12/01/2004	NR	N/A
James Twombly – City of Broken Arrow	12/01/2004	12/28/2004	No issues
L. Calhoun – City of Sand Springs	12/01/2004	NR	N/A
Mayor – City of Tulsa	12/01/2004	NR	N/A
City Manager – Jenks	12/01/2004	NR	N/A

NR – No Response, N/A – Not Applicable

## 9.2 PUBLIC MEETINGS

Phase II activities continued the intensive effort established in Phase I regarding public participation. As with Phase I, a series of meetings was conducted to maintain the transparency of the master planning process and involve the public in the ongoing evolution of the Arkansas River Master Plan. Two distinct sets of



June 2005 public meeting breakout session

public meetings, in January and in June 2005, were held for Phase II, totaling eight meetings. Prior to each set of meetings, press releases were issued to the local media outlets identifying the meeting dates/locations and the purpose/content of the public meetings. During the week of the meetings, abbreviated media alerts were issued to the media outlets. Copies of the media releases and recipient lists for both sets of meetings are provided in Appendix G.

The first series of meetings was conducted in late January 2005 to convey the preliminary findings of the opportunities/constraints, ecological, and hydraulic/hydrology analyses. Meetings were held from 6:00 – 8:00 PM. The January 2005 meetings were planned for each community along the river and occurred on the following dates:

- January 25, 2005 – Tulsa/Jenks
- January 26, 2005 – Broken Arrow / Bixby
- January 27, 2005 – Sand Springs

The second series of public meetings was conducted in mid-June 2005 to unveil the preliminary conceptual plans and provide updated findings on the analysis of low water dams and ecological issues. Meetings were held from 6:00 – 8:00 PM. One meeting was held in each of the five communities on the following dates:

- June 13, 2005 – Jenks
- June 14, 2005 – Bixby
- June 15, 2005 – Tulsa
- June 16, 2005 – Sand Springs
- June 17, 2005 – Broken Arrow

The format for all meetings consisted of a brief overview/update of project activities via a short presentation. Following the presentation, attendees were invited to visit break-out stations to discuss specific project issues with members of the project team. Several mechanisms to obtain comments were utilized including discussions with team members, written comment forms, and a project-specific email address. In general, most meeting attendees

were very interested and supportive of the project. Copies of presentation materials used during the January and June public meetings are provided in Appendices H and I, respectively. Copies of the attendance rosters from the January and June public meetings are provided in Appendices J and K, respectively.

### 9.3 PUBLIC COMMENTS

Through mid-July 2005, over 35 comments via email and approximately 15 hand-written/faxed comments were received. The following summarizes these comments:

- Several comments were received concerning dams on the River and their potentially negative impact on fishing; including hybrid creation, hatcheries, stocking, and trading with other states.
  - Many of these comments expressed the need for specific studies concerning fish habitat and economic impact.
- Several comments requested direct access, for example, on the web, to the Master Plan information shown & discussed at the public meetings.
- A few comments were received regarding concerns over safety and noise associated with new residential trails.
- A few comments addressed whether the River would be safe and suitable for swimming and other non-motorized recreational craft/activities.
- There were several comments concerning taxes and funding.
- Several comments pertained to a specific issue or a specific recommendation, including:
  - Incorporating useful and large wildlife corridors/preserves and raptor habitats.
  - Connecting/interconnecting the trails all the way to Broken Arrow; Trails should be wide enough and designed to simultaneously accommodate pedestrians/runners and bicycles.
  - Water taxis in Crow Creek could run from downtown Tulsa all the way to Jenks Bridge.

- Multiple comments pertained to enhancing transportation for access to the River, especially Riverside Drive.
- There should be ample parking, especially to accommodate usage surges during weekends and special events.
- Suburban-style strip malls should be avoided as a development element.
- Development near the River should be publicly accessible areas, like community commercial, as opposed to residential which would tend to restrict access to the River.
- More water should be allowed into the Arkansas River, perhaps from Keystone Lake.
- The Bixby area should get more attention.
- The 'Bixby overlook' should be changed to an amphitheater.
- The 170-acre Star Center in Sand Springs should be considered/incorporated into the Master Plan.
- The Master Plan should address flooding in Crow Creek.
- The Riverview Neighborhood is a potentially historic community and should not be a 'potential development area.'
- A Tulsa planner provided 16 specific ideas.
- Tour boat/water taxi noise generally should be limited.
- The proposed baseball stadium near 21st-23rd St. should be changed to some other type of 'magnet' item.
- A portion of the River should be channelized for potential hydraulic and development benefits.
- More comfortable fishing facilities should be provided.
- Several adjacent property owners requested more specific information as to how their property fits into the Master Plan.
- The Mayor of Sand Springs provided positive comments about the Master Plan.

Copies of all written/emailed comments are provided in Appendix L.

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## 10.0 FUNDING MECHANISMS AND BUDGET PROJECTIONS

The Greater Tulsa Area communities recognize that the Arkansas River Corridor is an important natural resource that could be developed to stimulate immense private investment and greatly improve the quality of life for current and future generations.

The Phase I study addressed privately and publicly owned property within the river corridor and identified potential conservation, development, and redevelopment sites. The Phase II study assesses the feasibility of specific sites, identifies funding measures and mechanisms, and continues the public involvement effort to develop a Master Plan. This section includes a discussion of National Economic Development (NED) and National Ecosystem Restoration (NER) objectives, a general description of the project area, habitat constraints and opportunities, and additional studies that will be required.

### 10.1 NED AND NER OBJECTIVES

Federal objectives under NED and NER were required to be addressed in the Arkansas River Master Plan. Goals for NED and NER include:

- Identifying the USACE existing federal authorities that affect the project area.
- Identify which authorities are most likely to provide funding for projects within the subject site provided that a legitimate Federal interest is found.
- Coordinate with the USACE, INCOG, and representatives from local municipalities and development interests to review the applicability of various funding streams relative to Master Plan goals and objectives.
- Define the conditions that need to exist before any proposed projects within the corridor could garner significant Federal participation.

Table 10.1-1 addresses the continuing authorities that could be used to further USACE participation in the future phases of the Plan.

**Table 10.1-1**  
**Funding Sources – Corps of Engineers Continuing Authorities**

Funding Source	Title/Participants	Project Scope	Financial Information
Section 206 of the Water Resources Development Act of 1996	Aquatic Ecosystem Restoration. Non Federal Participants, State and local Governments.	Restoration of a degraded aquatic ecosystem structure, function, and dynamic processes to a less degraded, more natural condition.	<u>Study Costs:</u> Preliminary Restoration Plan (\$100,000) is 100% Federal; Ecosystem Restoration Report is 65% Federal and 35% non-federal. <u>Project Costs:</u> Maximum federal cost of \$5,000,000
Section 22, Water Resources Development Act of 1974	Planning Assistance to States. States/Tribes/Local Governments	To assist states, local governments, and other non federal entities in the preparation of comprehensive plans for the development, utilization and conservation of water and related resources.	<u>Study Costs:</u> 50% Federal; 50% non-Federal; \$500,000 limit annually per State/Tribe
Section 208, Flood Control Act of 1954	Clearing and Snagging Projects. Non federal partners.	Provides for channel clearing and excavation, with limited embankment construction, by use of materials from the clearing operation.	<u>Study Costs:</u> First \$40,000 is 100% Federal. Amount over \$40,000 is 65% Federal and 35% non-Federal <u>Project Costs:</u> Non-Federal pay is 35% of total project cost with 5% in cash. Maximum federal cost of \$500,000



**Table 10.1-1**  
**Funding Sources – Corps of Engineers Continuing Authorities**

Funding Source	Title/Participants	Project Scope	Financial Information
Section 14, Flood Control Act of 1946	Emergency Streambank and Shoreline Protection. Non-Federal partners.	To prevent erosion damage to public facilities by the emergency construction or repair of stream bank and shoreline.	<u>Study Costs:</u> First \$40,000 is 100% Federal; over \$40,000 is 65% Federal and 35% non-Federal. <u>Project Cost:</u> Non-Federal pay is 35% of total project cost with 5% in cash. Maximum Federal costs of \$1,000,000
Section 1135, Water Resources Development Act of 1986	Small Ecosystem Restoration	Restoration of a degraded ecosystem through modification to Corps structures, operations; or implementation of mitigation measures in affected areas	<u>Study Cost:</u> Preliminary Restoration Plan (\$100,000) is 100% Federal. Ecosystem Restoration Report is 75% Federal and 25% non-Federal. <u>Project Cost:</u> Non-Federal pay is 25% of total project cost. Maximum Federal cost of \$5,000,000.
Section 205, Flood Control Act of 1948	Small Flood Control Projects	Provides for local protection from flooding by the construction or improvement of flood control works (non structural measures and flood warning systems).	<u>Study Cost:</u> First \$100,000 is 100% Federal. Amount over \$100,000 is 50% Federal and 50% non-Federal. <u>Project Cost:</u> Non-Federal pay is 35% of total project cost with 5% in cash. Maximum Federal costs of \$7,000,000
Section 206 of the Flood Control Act of 1960	Floodplain Management Services	Provides full range of technical services and planning guidance that is needed to support effective floodplain management.	<u>Study Cost:</u> 100% Federal for services to state, regional and local governments, Indian Tribes, and other non-Federal public agencies. Services to other Federal agencies and the private sector on a 100% cost recovery basis

## 10.2 OTHER FEDERAL FUNDING MECHANISMS

A variety of other funding mechanisms may be available for implementation of projects identified in the Master Plan. Many other Federal agencies administer funding programs that provide

assistance to development/redevelopment/restoration projects. The following Federal agencies should be considered as potential funding mechanisms:

- NRCS/Farm Service Agency – provides a variety of programs to landowners. The Red Slough Wildlife Management Area in McCurtain County, OK is an excellent example of a successful partnership between landowners and the NRCS. The project involved reclamation of farmland and the creation of wetland, bottomland hardwood, and prairie habitats. Similar types of projects could be implemented in more rural areas of the River corridor. NRCS available to assist landowners with conservation/restoration include:
  - Conservation Reserve Program (CRP) – landowners can receive annual rental payments and cost-share assistance to establish long-term resource conserving covers on eligible farmland.
  - Commodity Credit Corporation (CCC) – makes annual rental payments based on the agriculture rental value of the land and provides cost-share assistance for establishing approved conservation districts.
  - Conservation Security Program (CSP) – financial and technical assistance to promote the conservation and improvement of soil, water, air, energy, plant and animal life, and other conservation on Tribal and private working lands.
  - Resource Conservation and Development Program (RC&D) – accelerates the conservation, development, and utilization of natural resources, improves the general level of economic activity, and enhances the environmental and standard of living in RC&D areas.
  - Soil and Water Conservation Assistance (SWCA) – provides cost share and incentive payments to farmers and ranchers to voluntarily address threats to soil, water, and related natural resources, including grazing land, wetlands, and wildlife habitat.
  - Environmental Quality Incentives Program (EQIP) – offers financial and technical assistance to promote agricultural production and environmental quality as compatible goals.

- Stewardship Incentives Program (SIP) – technical and financial assistance to encourage non-industrial private forest landowners to keep their lands and natural resources productive and healthy.
- Forestry Incentives Program (FIP) – cost-share for tree planting, timber stand improvements, and related practices on non-industrial private forest lands.
- Grassland Reserve Program (GRP) – program to offer landowners the opportunity to protect, restore, and enhance grasslands on their property.
- EPA, Department of Housing and Urban Development, and USDA – offers a variety of grants, loans, and tax incentives that can be applied to Brownfield redevelopment projects.
- USFWS – provides assistance to complete small projects which benefit fish passage
- Economic Development Administration of the US Department of Commerce – provides funding for projects and programs that create wealth and promotes business development.

### 10.3 NON FEDERAL FUNDING MECHANISMS

Various funding resources are available from state agencies for economic development, planning, community revitalization, trails, infrastructure projects, and housing projects. Agencies with funding available include:

- Oklahoma Department of Commerce
- Oklahoma Department of Transportation
- Oklahoma Tourism and Recreation Department
- Oklahoma Water Resources Board
- Oklahoma Department of Wildlife Conservation

There are also a wide range of non-governmental funding sources available to citizens, businesses, non-profit organizations and other project proponents. Some examples include:

- The Green Communities Initiative – offers financing, grants, and technical assistance to developers to build low-income housing.

- Local Initiative Funding Partners, a partnership program between the Robert Wood Johnson Foundation and local grantmakers, supports innovative, community-based projects designed to improve the health and healthcare for society's most vulnerable people.
- The National Trust Small Deal Fund has been developed by the National Trust for Historic Preservation's for-profit subsidiary. Funds are applied to small historical tax credit projects generating from \$200,000 to \$650,000 in tax credit equity.
- The Tony Hawk Foundation offers grants to support skate parks in low-income communities.
- Nike's Bowerman Track Renovation Program provides matching cash grants of up to \$50,000 to community-based, youth-oriented organizations that seek to refurbish or construct running tracks.

#### **10.4 TAX INCREMENT FINANCING DISTRICTS**

Tax increment financing (TIF) districts are an economic development tool that allows communities to borrow against anticipated new tax revenues within a specified geographic area, or district, to generate the funds that are used to finance the public improvements that will result in the additional anticipated revenues. TIF Districts could likely be established to facilitate economic development in several locations throughout the corridor. TIF Districts are often most effective in blighted urban areas with a large economic development potential; however, their use is not limited to these types of areas. The Sand Springs riverfront, the west bank of Zink Lake, the Jenks/South Tulsa riverfront, and the Bixby riverfront may be suitable locations for TIF Districts.

#### **10.5 RIVER DEVELOPMENT AUTHORITY**

The Master Plan has identified many exciting opportunities and difficult challenges associated with the proposed plans within the project corridor. There is a strong need for a governing entity or entities to provide a coordinating role in the future planning, implementation, and management of the River. Oversight will be required for the proper implementation of the Master Plan to

ensure that a balance of riverfront restoration, development, recreation, natural resource management, and community utilization is achieved and maintained throughout the 42-mile corridor. Riverfront development in other areas of the country in numerous cases occurs under the guidance of autonomous entities, usually identified as development authorities. There are many examples throughout the country where such entities have been an effective tool in guiding riverfront planning and development.

The following summaries provide examples of regional scenarios where communities have focused on River corridor development. As you will note some have established River Development Authorities to accomplish their specific riverfront development goals while others have not.

#### **10.5.1 OKLAHOMA CITY RIVERFRONT REDEVELOPMENT AUTHORITY, OK**

The Oklahoma City Riverfront Redevelopment Authority (OCRRA) was formed in 1985 with the primary mission of planning and managing development and redevelopment projects along the North Canadian River - now the Oklahoma River - in Oklahoma City, Oklahoma. It is governed by a nine-member Board of Trustees appointed by the Mayor of Oklahoma City. The OCRRA is a self-funded trust obtaining its funding through various industrial activities and special events. These funds are mostly applied to administrative costs for the trust. Capital costs must be obtained through other means such as public/private partnerships. The OCRRA is capable of establishing water use policies and riverfront zoning; however, no mechanisms are currently in place to provide for enforcement of the policies.

#### **10.5.2 TRINITY RIVER AUTHORITY, TX**

The Trinity River Authority (TRA) is an independent political subdivision created by the Texas Legislature. The TRA extends from the Dallas-Ft. Worth area to Houston, Texas and encompasses parts of three counties. It is governed by a Board of Directors that is appointed by the Governor with guidance and approval from the State Senate. Members are selected from within the geographic political subdivision. The TRA serves three primary functions including 1) master planning, 2) serving as a local sponsor for

federal water projects, and 3) providing potable water and wastewater treatment services or any other services authorized by the state legislature. The TRA is capable of providing tax exempt financing related to wastewater and potable water projects and industrial air/water pollution control projects. The TRA currently supplies potable water to approximately 10 million people and sells biosolids from wastewater treatment facilities as affordable and abundant fertilizer. The TRA owns the water rights to the federal lakes in fulfillment of its local sponsor role, and manages recreation facilities along the waterway.

The TRA does not have state or federal appropriations, but operates on revenues from the services it provides. Any project or operating profits are returned to the customers. Its fiscal year 2004 budget totaled \$138 million.

### **10.5.3 YUMA RIVERFRONT DEVELOPMENT TEAM, AZ**

Although no river authority exists in Yuma, Arizona, a Riverfront Development Team (RDT) has been established for the Colorado River and consists solely of City employees. The RDT works closely with the Yuma Crossing Natural Heritage Board, which primarily handles cultural resources oversight and other resource preservation/protection services along the Colorado River. The City of Yuma funds riverfront development for parks and other small public projects; public-private partnerships are established for larger developments. A recently approved Master Plan is in place and several re-development projects are currently underway.

### **10.5.4 KANSAS CITY PORT AUTHORITY, MO**

Riverfront development along the Missouri River in the Kansas City, Missouri area is overseen by the Kansas City Port Authority. The Port Authority was established by the City Council as a political subdivision of the State. The Port Authority resides within the Economic Development Corporation of the State. Its primary mission is economic development, with particular emphasis on the riverfront. The governing body is composed of seven board members, five of which are appointed by the mayor. The remaining two board members include one representative from waterborne commerce, and one representative from the City Planning and Development Department. The Authority has the power of

condemnation, can enter into contracts, and can issue bonds. A Riverfront Redevelopment Plan has been generated to serve as the master plan.

#### **10.5.5 OMAHA, NE**

The City of Omaha, Nebraska and neighboring Council Bluffs, Iowa have been very active in riverfront development along the Missouri River. Recent projects have been undertaken by Creighton University, the United States General Services Administration, and the National Parks Service. All planning and development activities in these cities have occurred without a river authority organization. Projects have been undertaken through public-private partnerships and coordination with the City planning and economic development staff.

#### **10.5.6 WICHITA, KS**

The City of Wichita, Kansas reflects many planning and development efforts along the Arkansas River. Examples of recent projects include shopping and dining complexes and plans for a riverwalk and convention center along the River. All activities are being conducted without a centrally focused river authority. Project activities are coordinated with the City of Wichita and Sedgwick County planning and economic development divisions. Projects are typically funded by City bond money, tax increment financing, or private investments.

#### **10.5.7 MEMPHIS, TN**

Riverfront development in the City of Memphis is overseen by the Riverfront Development Corporation. It is a corporation under contract to the City of Memphis to plan, promote, and coordinate the development and operation of riverfront amenities. Public/private partnerships are designed to implement projects according to the master plan.

#### **10.5.8 CHATTANOOGA, TN**

The successful Tennessee Riverpark in Chattanooga has been undertaken without a development authority. A master plan was created in 1985 to guide the riverfront development. Development

activities have been a cooperative effort of the City, Hamilton County, State and Federal governments, local foundations, RiverValley Partners, and private citizens.

### 10.5.9 TULSA, OK

The River Parks Authority (RPA), created by the City of Tulsa and Tulsa County, already possesses some of the core characteristics and responsibilities that are typically required of a river development authority (RDA). The RPA has been in place since 1974 and is charged with maintaining, preserving, and developing the Arkansas River and adjacent lands in Tulsa County for the purposes of economic and cultural benefit. It is governed by a seven member Board of Trustees with three members each appointed by the City of Tulsa and Tulsa County, and member appointed by the Tulsa Metropolitan Area Planning Commission. The RPA is funded by the City of Tulsa, Tulsa County, proceeds from public events, private contributions, and utility easement earnings. Its annual budget is approximately \$1.2 million. The RPA currently owns over 800 acres of land adjacent to the river. The RPA also leases and maintains substantial additional lands owned by the City of Tulsa for river parks purposes. The lands owned or leased by RPA are almost exclusively located in the City of Tulsa.

The RPA has an established history of riverfront development and management that includes recreation and limited commercial elements. It also has a well-established relationship with the River communities, residents, local agencies, and the private sector. It is possible that creation of a separate RDA could result in conflicting responsibilities or limitations to RPA's current mission. Rather than create a new river authority, the role and moniker of the RPA might be expanded to include some of the additional responsibilities that would be necessary to comprehensively address the overall needs of the River and the Plan.

### 10.5.10 CONCLUSIONS/RECOMMENDATIONS

In determining appropriate roles and responsibilities, several factors must be considered. Stakeholder involvement is one such factor. There are numerous stakeholders in the Arkansas River Corridor, as noted in this Master Plan, including recreational users, industrial users, and a variety of local, State, and Federal agencies. Included in



this group of stakeholders are federal agencies such as the USACE, Tulsa District, USFWS, and the ODWC; five municipal governments (Bixby, Broken Arrow, Jenks, Sand Springs, and Tulsa); Tulsa County; two levee districts; River Parks Authority; INCOG; municipal and regional planning agencies (Tulsa Metropolitan Area Planning Commission, et al), and several major industrial entities. Management of the river must be sensitive to the missions of each stakeholder.

To successfully implement the community's vision for the River Corridor to its maximum potential it is important to have broadly accepted and clearly defined roles and responsibilities for the various entities involved. Oversight and coordination of the operational complexities associated with the proposed low water dams, and establishing and enforcing policy level guidelines associated with future use and development of the River are critical policy issues. Key roles and responsibilities also include the following:

- Planning oversight for future projects and activities;
- Protection of appropriate buffer zones along the corridor through ownership or easements;
- Policy-making and enforcement of water use and safety policies
- Land use policies, zoning ordinances, and design guidelines
- Parks, trails, open space and recreational usage plans and operational policies;
- Financing authority including issuance of bonds;
- Property acquisition/ownership;
- Marketing/promotion of the river corridor, and
- Management for special events.

Possible division of roles and responsibilities might include:

- **INCOG** providing overall coordination of River Corridor planning and policy formulation, as well as technical support/assistance to various entities in pursuing plan implementation;
- **Local municipalities and Tulsa County** enacting and enforcing land use policies, zoning and local design guidelines; reviewing/approving development plans; providing capital and operating resources;

- **Corps of Engineers**, in partnership with sponsoring localities, assisting in planning, designing, and constructing major cost-share civil works including the high priority low water dams; as well as ecosystem restoration and related projects;
- **River Parks Authority** serving as the premier operating entity for parks, trails, public lands, and public facilities in the corridor; marketing/promotion of the river corridor; management of special events; providing contract services; and policy development/consultation for local governments in the corridor.

Due to the need to coordinate operating policies of low water dams in the corridor it is recommended that responsibility for operating and maintaining the low water dams to be constructed and the retrofitted Zink dam should be vested in one organization. The existing Zink Dam was constructed by the City of Tulsa and is maintained and operated by the RPA. Identified priority low water dams recommended by this plan are located in the upper reach of the River in the City of Sand Springs and in the middle reach of the River connecting south Tulsa and the City of Jenks. In light of the fact that locations of the anticipated low water dams encompass three municipalities as well as portions of unincorporated Tulsa County it is recommended that operating and management responsibilities for the low water dams be assigned to the RPA along with resources to provide such services.

Currently, the RPA does not possess the capability to establish and enforce policies along the River, nor does it possess the financial means to carry out a broader mission that it would be charged with if its role and responsibilities were expanded. This study recommends that a Blue Ribbon Committee including representatives of key stakeholders in the Corridor review the existing financing and regulatory powers of the RPA and determine if any additional authority is necessary and appropriate to enhance implementation of the River Corridor Plan and accomplish its mission. If RPA's mission is broadened, representation on the Board of Trustees should also be broadened to include, at a minimum, direct representation for the remaining communities in the corridor. Further evaluation should also address potential new revenue streams for the RPA, and the need for other responsibilities not addressed above.

**10.6 BUDGET PROJECTIONS**

One component of the Phase II effort is to address budget projections for a variety of public improvements identified by the USACE and INCOG. Planning level estimates have been generated for these improvements based on current costs, and are presented in Table 10.6-1.

**Table 10.6-1**  
**Budget Projections**  
 (Based on 2005 Dollar Value)

Improvement	Unit of Measure	Range of Estimate (in thousands of Dollars)	
		High	Low
<b>Existing Bridge Improvements</b>			
Railings	Mile	1,750	337
Lighting, decorative poles	Each	2.5	0.75
Lighting, underside	Per bridge	1,500	75
Pedestrian Lane	Mile	750	350
<b>Streetscaping/Landscaping of Scenic Roadways</b>			
Native/Rural Landscape	Mile	149	N/A
Streetscaping	Mile	579	N/A
New Paved Trails 10' wide	Mile	250	115
Lighting	Each	2.5	0.75
Decorative Towers w/Laser Lights	Each	1,500	750
<b>Park Amenities</b>			
Baseball Fields	Each	150	90
Soccer Fields	Each	150	90
Sports Complexes	Each	9,000	6,000
Parking Lots	Acre	145	95
Tennis Courts	Each	50	25
Lighting Fields	Each	150	90
Picnic Areas (Assume 20 covered picnic tables per site)	Each	350	200
Pavilions 120' by 60'	Each	350	180
<b>Potential Baseball Stadium in Millions of Dollars</b>			
AA Ballpark, 10,000 seat capacity	Each	40	25

N/A – Not available

Budget projections for the two proposed low water dams and for the rehabilitation of Zink Lake are also included in Phase II. Table

10.6-2 presents an estimate of probable construction costs for the typical low water dam concepts identified in Section 8.1 and 8.2, the Sand Springs Main Street Dam and the Creek Turnpike Dam, respectively. This cost table applies to each of these dams. This cost would also apply to the low water dam near the I-44 Bridge. Although this low water dam would be shorter than the two proposed dams, there would not be a significant reduction in costs.

**Table 10.6-2**  
**Estimate of Probable Construction Costs – Typical Low Water Dam – 4 Gate Sections**

Summary of Costs (Based on 2005 Dollar Value)		
Item	Description	Estimated Costs
1	Excavation and Backfill	\$ 48,000
2	Concrete	4,260,000
3	Bascule & Sluice Gates with Controls	6,600,000
4	Water Diversion & Control	77,000
5	Slope Protection (Temporary & Permanent)	90,000
6	Architectural Amenities	25,000
7	Miscellaneous Work to Complete	555,000
8	Contractor Mobilization and Demobilization	13,000
	Subtotal	\$ 11,668,000
	Contingencies (15%)	1,750,500
	Construction Cost	\$ 13,418,500
	General Construction Costs & Site Administration (8%)	1,073,500
	Contractor Insurance and Bonds	175,000
	Contractor Overhead & Profit (10%)	1,450,000
	Engineering, Legal, & Administrative (10%)	1,342,000
	Total Project Costs	\$ 17,459,000

Note: Values Rounded Up for Presentation

Table 10.6-3 presents an estimate of probable construction costs to retrofit Zink Dam with additional gates. The cost estimate includes one gate section consisting of two sets of 100-foot bascule gates.

**Table 10.6-3**  
**Estimate of Probable Construction Costs - Add Gate Section to Zink Dam**

Summary of Costs (Based on 2005 Dollar Value)		
Item	Description	Estimated Costs
1	Excavation and Backfill	\$ 5,800
2	Concrete	75,000
3	Bascule & Sluice Gates with Controls	1,100,000
4	Water Diversion & Control	38,500
5	Slope Protection (Temporary & Permanent)	11,500
6	Architectural Amenities	8,000
7	Miscellaneous Work to Complete	62,000
8	Contractor Mobilization and Demobilization	12,500
	Subtotal	\$ 1,313,300
	Contingencies (15%)	197,000
	Construction Cost	\$ 1,510,300
	General Construction Costs & Site Administration (8%)	121,000
	Contractor Insurance and Bonds	175,000
	Contractor Overhead & Profit (10%)	151,000
	Engineering, Legal, & Administrative (10%)	151,000
	Total Project Costs	\$ 2,108,300

Note: Values Rounded Up for Presentation

### 10.6.1 BRIDGES AND ROADWAY IMPROVEMENTS

Phase II includes cost estimates for several proposed bridges and roadway improvements identified in Phase I. The following cost estimates were developed using current day costs, and address construction costs only, unless otherwise specified. Factors that have not been considered in the cost estimates include right-of-way and easement purchase; residential, commercial, and industrial relocation; utility relocation; and environmental issues or mitigation measures. The following general assumptions were used to develop the costs:

- Vehicular bridges were estimated at \$100 per square foot, with two 14 foot lanes, two 12 foot lanes, and a dedicated pedestrian/bike lane.
- Pedestrian bridges were estimated at \$200 per square foot and 10 feet wide.
- Approach costs – Vehicular approach costs were estimated using \$20 per square foot.
- Bridge span length was calculated at 110% of the floodway width.

The cost estimates are as follows:

- **Gateways**
  - Costs for gateways can vary greatly depending upon the scale, choice of materials, and lighting. The estimated cost for the gateway concept illustrated in this master plan is approximately \$350,000 per set, including materials and installation.
- **Lighting for 11<sup>th</sup> Street and 21<sup>st</sup> Street Bridges**
  - The range of costs for lighting the underside of each bridge could vary between \$75,000 and \$1,500,000 based upon the types and number of fixtures used.
- **Sand Springs Main Street Low Water Dam Pedestrian Bridge**
  - Total length – 2,500 feet
  - Bridge length – 1,620 feet
  - Approach length – 880 feet
  - *Total estimated cost – \$3,400,000*

- **Creek Turnpike Low Water Dam Pedestrian Bridge**
  - Total length – 2,400 feet
  - Bridge length – 1,620 feet
  - Approach length – 780 feet
  - *Total estimated cost – \$3,400,000*
  
- **177<sup>th</sup> West Avenue Bridge (Four lane vehicular bridge with dedicated bike/pedestrian lane)**
  - Total length – 4,300 feet
  - Bridge length – 2,570 feet
  - Bridge width – 66 feet
  - Approach length – 1,730 feet
  - Approach width – 62 feet
  - *Total estimated cost – \$19,200,000*
  
- **Gilcrease Expressway Bridge**
  - The most recent published cost estimate for the Gilcrease Expressway Bridge has been estimated at *\$27,000,000* based on the City of Tulsa draft functional plans.
  
- **41<sup>st</sup> Street Bridge (Four lane vehicular bridge with dedicated bike/pedestrian lane)**
  - Total length – 2,800 feet
  - Bridge length – 1,800 feet
  - Bridge width – 66 feet
  - Approach length – 1,000 feet
  - Approach width – 62 feet
  - *Total estimated cost – \$13,100,000*
  
- **Yale Avenue Bridge**
  - The most recent published cost estimate for the Yale Bridge has been estimated at *\$33,000,000*, based upon information from Infrastructure Ventures.
  
- **193<sup>rd</sup> East Avenue Bridge (Four lane vehicular bridge with dedicated bike/pedestrian lane)**
  - Total length – 7,600 feet
  - Bridge length – 2,000 feet
  - Bridge width – 66 feet
  - Approach length – 5,600 feet
  - Approach width – 62 feet
  - *Total estimated cost – \$20,100,000*



- **Sand Springs – Main Street Extension**
  - The most recent published cost estimate from INCOG identifies a project cost of ***\$3,500,000*** for construction of approximately 5,000 feet of roadway.
  
- ***Broken Arrow – Aspen Avenue Extension***
  - Total length – 1,600 linear feet
  - Use – \$500 per linear foot
  - ***Total estimated cost – \$800,000***

Table 10.6.1-1 provides a cost estimate for the proposed Riverside Drive West. Planning level costs were identified for a four lane divided boulevard concept with a 30-foot median. The length was derived based upon the assumption that the boulevard would begin at 71<sup>st</sup> Street and continue north on the route depicted in Phase I to the 11<sup>th</sup> Street Bridge approach. The costs presented in the table below reflect estimated construction costs only, and do not include right-of-way, utility relocation, or other costs associated with potential environmental requirements near industrial properties.

**Table 10.6.1-1  
Estimate of Probable Costs for Riverside Drive West**

Improvement	Cost per linear foot
Grading	\$124
Paving	\$332
Drainage	\$200
Sidewalks	\$80
Landscaping	\$208
<b>Total</b>	<b>\$944</b>
Total estimated length	31,000 linear feet
<b>Total estimated cost</b>	<b>\$29,300,000</b>
<small>Note: The cost presented above reflects construction costs only. There would be significant costs associated with right-of-way and utility relocations that are not reflected in this cost estimate. These items would need to be analyzed in detail to provide a more thorough cost estimate.</small>	

Table 10.6.1-2 presents the estimated costs for the proposed traffic calming elements and improvements for the one mile and one-half mile intersections along Riverside Drive between 21<sup>st</sup> Street and I-44. Cost estimates were based upon the conceptual sketches and

Final Arkansas River Corridor Phase II Master Plan and Pre-Reconnaissance Study descriptions included in Phase I as well as physical observation of the area.

**Table 10.6.1-2**  
**Estimate of Probable Costs for Riverside Drive Intersection Improvements**

Improvement	Estimated Costs
<b>Major Intersection Improvements (21<sup>st</sup>, 31<sup>st</sup>, and 41<sup>st</sup> Streets)</b>	
Demolition	\$50,200
Grading	\$23,000
Paving	\$239,600
Drainage	\$30,000
Sidewalk on east side	\$14,000
Landscaping	\$74,400
Traffic Control	\$60,000
Plaza	\$18,500
<b>Total for each intersection</b>	<b>\$509,700</b>
<b>Mid-Crossing Improvements (approx. 26<sup>th</sup>, 36<sup>th</sup>, and 46<sup>th</sup> Streets)</b>	
Demolition	\$38,900
Grading	\$22,300
Paving	\$227,400
Drainage	\$30,000
Sidewalk on east side	\$14,000
Plaza	\$8,800
Landscaping	\$73,800
<b>Total for each intersection</b>	<b>\$415,200</b>
<b>Replace Pedestrian Bridge over Riverside Drive</b>	
Demolition of existing bridge	\$100,000
New truss bridge	\$280,000
Slope walls	\$18,000
Miscellaneous	\$20,000
<b>Total</b>	<b>\$418,000</b>

Table 10.6.1-3 provides an estimated total cost for all proposed improvements to Riverside Drive between 21<sup>st</sup> Street and I-44. The table presents a summary of the costs previously described in Table 10.6.1-2 in combination with the estimated costs to reconstruct the existing roadway throughout this same area. For cost estimating purposes a four lane boulevard-style roadway with a variable median was considered.

**Table 10.6.1-3**  
**Cost Summary for All Riverside Drive Improvements from 21<sup>st</sup>**  
**Street to I-44**

<b>Improvement</b>	<b>Cost Estimate</b>
Four lane boulevard (12,630 feet at \$663 per linear foot)	\$8,370,000
Major intersection improvements (3 intersections at \$509,700 each)	\$1,530,000
Mid crossing improvements (3 intersections at \$415,200)	\$1,250,000
Replace pedestrian bridge over Riverside Drive	\$420,000
<b>Total</b>	<b>\$11,570,000</b>
Note: The cost presented above reflects construction costs only. There would be significant costs associated with right-of-way and utility relocations that are not reflected in this cost estimate. These items would need to be analyzed in detail to provide a more thorough cost estimate.	

For planning purposes, the following assumptions can be made to identify some additional costs beyond the construction costs presented above:

- An average of 8% can be estimated for design costs (engineering, architecture, survey, geotechnical, etc)
- An average of 6% can be estimated for supervisor, inspection, and overhead (SIOH)

## 11.0 CONCLUSIONS AND RECOMMENDATIONS

The following provides a brief summary of conclusions for the Phase II Master Plan;

### 11.1 STUDY AREA CONDITIONS

- The project corridor lies within the Oklahoma/Texas Plains ecoregion and contains two primary vegetative associations, cottonwood/willow association and oak/hickory association.
- A wide variety of land uses exists throughout the project corridor.
- The corridor has a rich cultural history and contains artifacts that date back to prehistoric times.
- Oil and aviation played a vital role in the growth of the Tulsa area economy during the modern era.
- A well-developed network of utilities and transportation corridors serve the project area.

### 11.2 HABITAT ASSESSMENT/ECOSYSTEM RESTORATION

- Many important species rely on the Arkansas River Corridor for critical habitat. Several federal and state protected species exist in the project corridor.
- Opportunities exist for ecosystem restoration throughout the corridor.
- Fish migration is an important issue to consider in the planning process.
- The Arkansas River has been included in the listing of *Oklahoma Sensitive Waters and Watersheds Harboring Endangered and Threatened Species and Their Critical Habitat of Concern*. As such, developments along the project corridor are subject to consultation with the USFWS and ODWC and a 100-foot riparian buffer.

### **11.3 HYDRAULICS AND HYDROLOGY**

- Sand Springs Main Street and Creek Turnpike are the top two proposed locations for low water dams based on engineering analysis and water quality modeling.
- A growing local interest is occurring regarding a low water dam near the I-44 Bridge. This dam is technically feasible, but would need to be shorter to avoid impacts to the kayaking area below Zink Dam.
- Low water dams would negatively impact hydraulics and/or water quality in three of the eight potential dam locations.

### **11.4 OPPORTUNITIES AND CONSTRAINTS**

- Many opportunities and constraints exist throughout the corridor. These issues are incorporated into the conceptual planning process addressed in Section 8.0.

### **11.5 CONCEPTUAL PLANS**

- Detailed information regarding conclusions and recommendations is presented in each of the Phase II conceptual plans. Specifics for each plan are addressed in Section 8.0.

### **11.6 PUBLIC INVOLVEMENT**

- Many different public information activities were implemented. Two distinct sets of public meetings were conducted for Phase II. The public was generally supportive of the planning process and the conceptual plans developed for Phase II.

### **11.7 FUNDING MECHANISMS AND BUDGET PROJECTIONS**

- A wide range of funding mechanisms are available to utilize federal, state, and private funds for development, restoration, and reuse.
- Consideration should be given to the development of a River Development Authority and TIF districts.

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## 11.8 RECOMMENDED STUDIES

In conversations with various federal, state, and local government officials, a variety of potential future activities and studies were discussed. These studies, to be completed by their respective agencies, would address the potential impact of the dams and other projects before their construction. This will assist in all aspects of avoidance, impact minimization, and mitigation. Such studies might include the following:

- Habitat Assessments for existing planned restoration projects.
- Fish movement through the corridor according to the dams design to accommodate fish passage.
- The effects of dams on the creation of new sand bars.
- Angling benefits of striped bass fisheries in the pools.
- Golden Alga blooms in the pools.
- Amount of food available to terns nesting on artificial islands.
- Paddlefish – concerns and design constraints.
- Impact on striped bass collection point below Zink Dam.
- How will maintenance be funded?
- Locations for angling access areas.
- Field surveys performed in the reach of each dam location to provide detailed topographic information concerning the locations.
- Preliminary geotechnical explorations made within the general area of the proposed low water dams to establish the foundation conditions for each Tier 1 low water dam.
- The feasibility of each Tier 1 low water dam determined, considering all factors of commercial and economic development, maintenance, etc.
- Detailed baseline water quality/sediment assessment/study of the 42-mile corridor; study should address the qualitative and quantitative impacts of the various point and important nonpoint source discharges.
- NEPA impact assessment/impact statement to address planning, environmental, and socioeconomic issues of the plan and proposed design activities.

12.0 GLOSSARY

100-Year Floodplain	Area adjoining river, stream or watercourse which is covered by water in the event of a 100-year flood. A 100-year flood is a flood with a recurrence interval of 100 years, or a 1% annual chance.
350-Year Storm	Storm event with a recurrence interval of 350 years.
Algal Blooms	Rapid, excessive growth of algae within a waterbody; can adversely impact water quality.
Backwater Elevation	Upstream water elevations due to obstructions or restrictions in flow downstream.
Bank Stabilization	Prevention of soil erosion of river or stream banks using mechanical (structural) and/or vegetative measures.
Bascule Gate	Device necessary for releasing debris build-up due to water control structures; reduces amount of dam maintenance typically required for sediment removal.
Base Flood	100-year flood; recurrence interval of every 100 years or an annual probability of 1% or less.
Biosolids Treatment Facility	Facility that processes municipal sanitary sewer waste sludge for disposal or reuse.

Bivalve	Aquatic mollusk with a laterally compressed body and a shell consisting of two halves connected by an elastic ligament; includes clams, oysters, scallops and mussels.
Bottomland Forests	Wooded, low-lying areas located in floodplains, riparian zones or drainageways.
Cascade Weir	Water control structure with a stair-stepped shape; weir height determines amount of discharge from water pool. Water tumbling over the stair steps creates turbulence and oxygenates the water.
Confluence	Meeting of two or more streams.
Constant Pool	Permanent body of water by flow restrictions or other physical channel properties.
Critical Habitat	Specific areas in the geographical region which contain physical or biological features essential for the conservation of threatened and endangered species.
Delineation	Determination of the extents of; includes determining the extents of a floodplain or wetland.
Dissolved Oxygen	Concentration of molecular oxygen dissolved in water; basic water quality parameter and critical to the aquatic environment.



Ecoregion	Large areas of land that contain a geographically distinct combination of natural communities that share species and ecological dynamics, environmental conditions and have beneficial, sustainable interaction.
Ecosystem	Naturally occurring combination of organisms living within the same environment.
Ecosystem Restoration	Returning an ecosystem to its approximate original condition prior to disturbance.
Fauna	Animals characteristic of a region or environment.
Fish Passage	Fish travel upstream and downstream through river or stream obstructions for the purposes of feeding, spawning or migration.
Flood Insurance Study	Study performed for the Federal Emergency Management Agency that establishes and delineates flood risk areas and floodplains for development of flood insurance rates and maps.
Floodway	Areas within a waterbody with deepest and fastest flows during periods of flooding; not available for construction or development.

Flora	Plants characteristic of a region or environment.
Foraging Habitat	Areas essential to animals due to physical and biological factors necessary for securing of food.
Frontage	Front face of a building or land adjacent to a building, street or waterbody.
Gateway	Formal entrance into a distinct or different cultural area.
Golden Algae ( <i>Prymnesium parvum</i> )	Freshwater species of algae that typically occurs in estuarine waters; known to cause massive fish and bivalve kills by releasing toxins during harmful algal blooms.
Grade-Separated Interchange	Separation of the intersection of two modes of transportation, typically roadways, by a difference in elevation.
Herbaceous Vegetation	Non-woody, low-growing plants; includes grasses and herbs.
Hydraulic Operator	Mechanical component of low-water dams necessary for controlling gate heights and flow conditions.
Hydraulics	Study of liquid flow within a controlled system.
Hydrology	Study of the properties, distribution and circulation of water throughout Earth.

Infrastructure	Framework of public works necessary to support civilization; includes transportation and utility networks.
Mitigation	Reduction of adverse impacts on the environment.
Mixed-Use Development	Property development composed of both commercial and residential uses.
Mudflats	Flat, muddy areas within waterbodies caused by the depositing of sediments from rivers or streams; submerges during periods of high flows and provides habitat primarily for migratory birds.
Nutrient Load	Amount of nutrients, primarily nitrogen and phosphorus, that enter a water system; high nutrient loads can adversely impact water quality.
Nutrient Recycling	Removal of nutrients from water due to chemical processes or plant and microorganism uptake.
Ogee Weir	Water control structure with an "S" shape; weir height determines amount of discharge from water pool.
Pathogen	Disease-causing microorganisms; typically found in water due to fecal contamination.
Pier Nose	Upstream face of the pier.

Pier Tail	Downstream face of the pier.
Prairie	Land with primarily herbaceous vegetation cover and minimal variation in topography.
Promenade	Raised walkway along a waterbody primarily used for casual strolling or recreational purposes.
Retail Frontage	Addition of retail business(s) to the frontage of buildings or structures.
Riparian	Relating to the environment and ecosystem of areas bordering streams, lakes and rivers; riparian areas provide erosion control and significantly affect the aquatic environment.
Sediment	Soil particles transported by fluid flow; within water, soil particles from erosion are transported downstream until settling.
Sediment Filtration	Removal of sediments from water by vegetation; plants act as filter media which remove sediments in addition to the removal of sediments via gravity settling.
Sediment Transport	Movement of soil particles by fluid flow within a waterbody.
Shade Trellises	Frame-like structure used as a support for growing plants and providing shade.

Sluice Gate	Panels within a structure that can be adjusted to control water elevation and flows.
Spillway	Structure that conveys normal and/or flood flows thereby protecting the structural integrity of the dam.
Sub-reach	Tributary, branch or section of a larger river network.
Subsurface Hydrology	Study of water distribution and circulation underground.
Threatened and Endangered Species	An animal or plant species at risk of becoming extinct throughout all or a significant portion of its range.
Total Dissolved Solids	Combined concentration of solid chemical compounds that are dissolved in water; common water quality parameter.
Total Maximum Daily Load	Limit of the total amount of a specific contaminant that can enter a water system; established by governmental agencies.
Trailhead	Beginning or start of a trail or path usually with amenities including parking, restrooms, drinking fountains, shelters, and benches.
Turbidity	Light-transmitting properties of water; relative measure of suspended and colloidal matter and common water quality parameter.

Upland Forests	Wooded areas located outside of the floodplain; provide natural buffers to riparian areas and aquatic habitat.
Waste Assimilation	Removal of contaminants or wastes by biological, physical and chemical processes.

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