



# COLORADO RIVER GREENWAY SOURCEBOOK

Prepared for the City of San Luis Rio Colorado, Sonora, Mexico  
as part of the River Sisters Initiative





**EL LABORATORIO**

Solving problems by building community  
Building community by solving problems



AYUNTAMIENTO DE  
SAN LUIS RÍO COLORADO

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**Cover:**

Top photo - San Luis Río Colorado families enjoying the Colorado River during the 2014 pulse flow event.  
Bottom photo - The Colorado River flowing under the San Luis bridge during the spring of 2014.

San Luis Río Colorado, Sonora, Mexico  
March, 2018.

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## Executive Summary

It was an historic 2014 pulse flow of freshwater from the Morelos Dam on the Colorado River that inspired a surge of interest in the opportunities for creating a public space along the urban edges of the river in the city of San Luis Río Colorado, Sonora.

The Colorado River is the lifeline of the southwestern United States and northwest Mexico. However, the damming of the river together with increased demand for river water has resulted in a dry channel for much of the Colorado River in Mexico. The pulse flow was planned for environmental benefit, imitating natural springtime flows; the social benefit was unexpected.

This guide describes the process for creating a greenway in the river's federally controlled channel separating San Luis Río Colorado from the municipality of Mexicali, Baja California. As envisioned, this park would provide ready access and recreational opportunities to nearby residents and visitors.

Through the leadership of the city of San Luis Río Colorado, directed by Mayor José Enrique Reina Lizárraga, a workshop was convened in November 2017 to explore important questions about the future park and to articulate the values and principles that would guide its creation. The workshop brought together more than thirty local experts, including from government, academia, civil society, and the Cocopah Indian Tribe community, as well as U.S. leaders from the Colorado River headwaters.

The values they identified, and for which they articulated design principles, point to the importance of promoting, throughout the creation and management of the greenway:

- » **Respect**
- » **Identity**
- » **Recovery**
- » **Social Cohesion**
- » **Responsibility**

Workshop participants suggested a sampling of preliminary design ideas to use in soliciting public input about the future park. These ideas included: introducing additional pulse flows for recreation and restoration; incorporating aspects of the Cocopah culture in the park's design; using native plants for reforestation and landscape design; creating opportunities for birdwatching, bicycling, and hiking; constructing an observation tower with zipline; and building a signature amphitheater, to be called El Acuífero ("The Aquifer"), as a sister amphitheater to Red Rocks Amphitheater (Denver). The launch of the park project was set for August 2018.



Mexicali-San Luis Rio Colorado Highway

Colorado River

Arizona,  
USA

Baja California, MX

Colorado River  
Greenway

San Luis Rio Colorado,  
Sonora, MX



## INTRODUCTION

The Colorado River is the source of life for the southwestern United States and northwestern Mexico. The Colorado River Basin spans the states of Colorado, Wyoming, Utah, Nevada, New Mexico, Arizona and California in the United States, and the states of Baja California and Sonora in northern Mexico, until it reaches the Sea of Cortez. However, with the construction of dams, together with increasing demand of the river's water, has resulted in a dry riverbed for much of the Colorado River in Mexico. In 2012, for the first time in history, two governments came together under a binational agreement, called Minute 319 to, among other things, release fresh Colorado River water from Morelos Dam to imitate the natural spring pulses for the benefit of the environment. Beyond the important ecological benefits generated, the 2014 "pulse flow"—especially in the urban stretches of the river—unexpectedly proved the extraordinary ability of the Colorado River to inspire a rebirth in the people of San Luis Rio Colorado.

The pulse flow inspired a groundswell of interest in opportunities for people to have ready access and to enjoy the urban reaches of the Colorado River. Even though the riverbed is dry again, a civil society-led initiative has surged and strengthened to unify efforts to reclaim the urban reaches of the Colorado River for the benefit of all of the communities of San Luis Rio Colorado.

Accordingly, city leadership from San Luis Rio Colorado, led by Mayor Reina, convened a workshop on November 8-9 of 2017, to bring together more than thirty local experts and representatives from government, academia, civil society, and the Cocopah Tribe, as well as US leaders from the headwaters of the Colorado River Basin. This workshop was designed to explore the possibilities for a greenway or linear park near the federal bridge to enhance both natural ecosystems and the surrounding community.

The November 2017 workshop had the following goals:

1. Use the kick-off greenway charrette to help prepare a larger group of people to be able to help conduct future charrettes with the public.
2. Facilitate the workshop participants' creation of a Colorado River Greenway Sourcebook, based on the input of all workshop participants, that includes the following sections:
  - » Vision and Values
  - » Guiding Principles
  - » Preliminary integral design ideas
  - » Timeline and Planning

The two-day workshop included site reconnaissance, presentations by numerous stakeholders, and breakout and plenary sessions.



The project is located in the federal channel of the Colorado River, contiguous to the City of San Luis Rio Colorado, Sonora, and the municipality of Mexicali, Baja California.

◀ Photo 1: Map of proposed Colorado River Greenway site.

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We would like to thank Mayor Enrique Reina and the people of San Luis Rio Colorado for their genuine and invaluable support. The lead facilitators and coordinators take full responsibility for any errors found in this Sourcebook, and the authorship and participation of the above entities in the workshop does not imply their agreement with, or endorsement of, all the values, guidelines, or preliminary design ideas presented in this document. For further information, please contact:

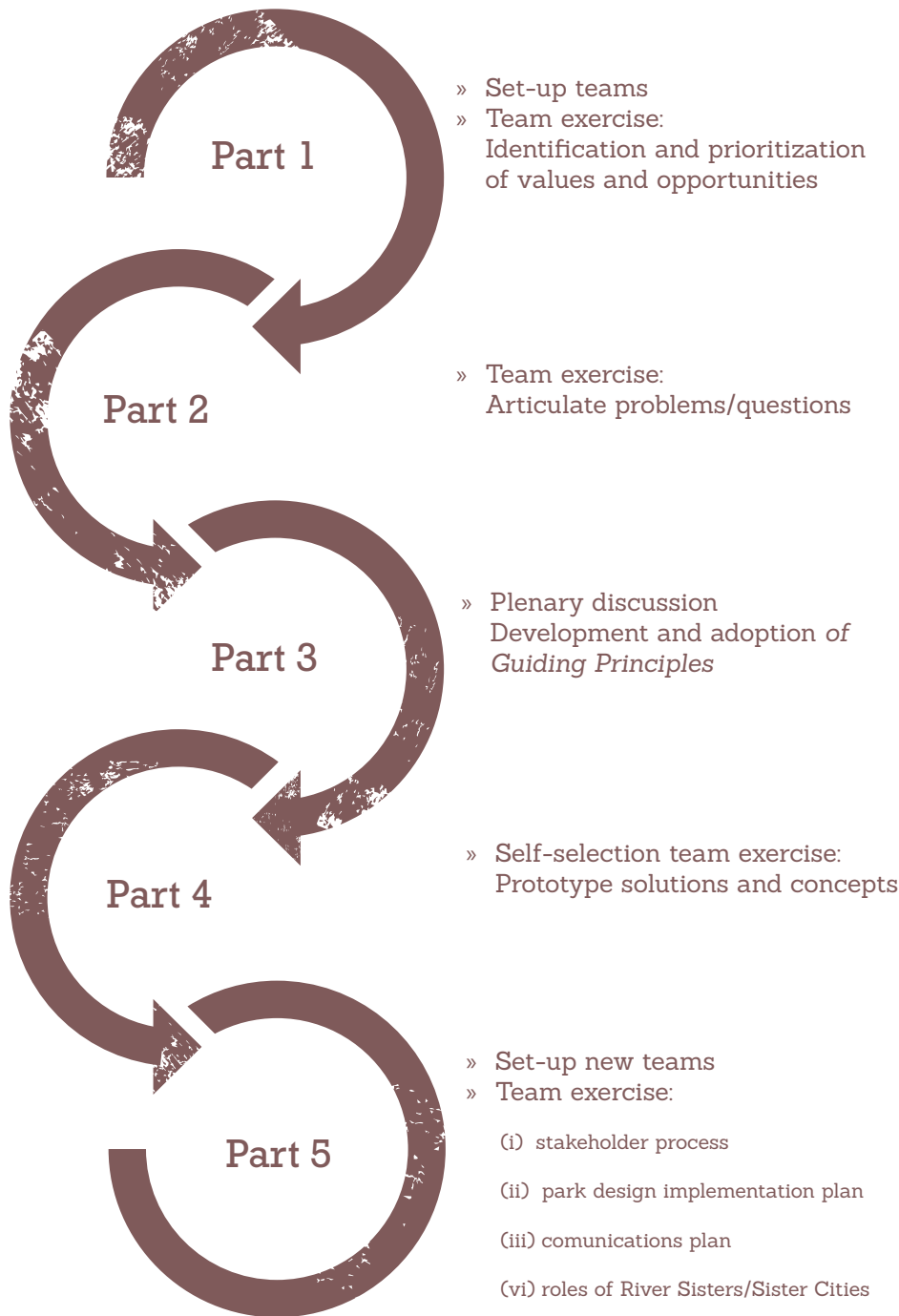
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# 1 . NOVEMBER 8-9, 2017 SAN LUIS RIO COLORADO WORKSHOP ORGANIZATION

## Kick-off workshop flow



◀ Photo 2: Laguna Grande restoration site reconnaissance (Colorado River, Baja California), during workshop session.

## 2. VALUES AND GUIDING PRINCIPLES

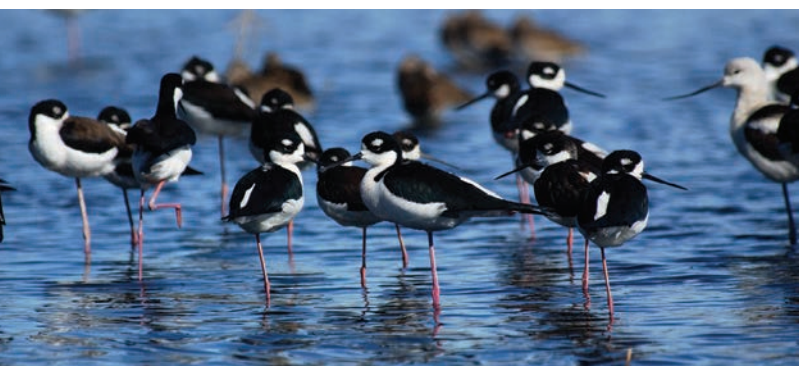
We asked the community questions designed to uncover the primary guiding principles and the values that should be central to this project, guiding both the design process and the final park design. What are the most important values that need to be represented in the park design, or that should help guide the design process?

### Value: Respect

Question: How can the creation of a greenway support the stewardship of the river, culture, and sustainable development of the city?

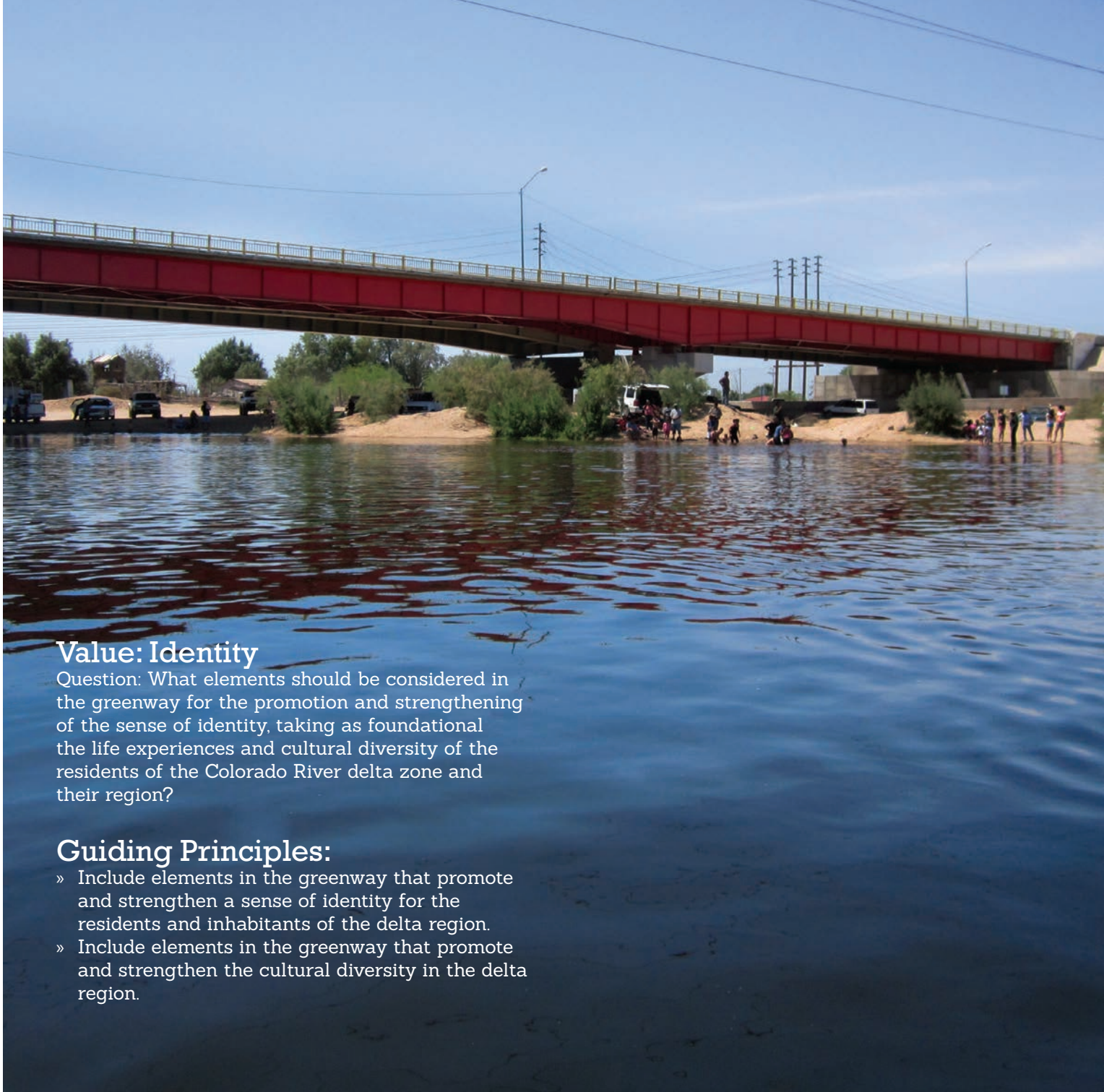
### Guiding Principles:

- » Manage the park to rescue ecosystem, river, and cultural and historical health.
- » Manage the park to support the cultures of the river users.
- » Manage the park to support the sustainable development of the city and the delta region.



▲ Photo 3: Colorado River channel during base flow deliveries, between Sonora and Baja California.

◀ Photo 4: The black-necked stilt (*Himantopus mexicanus*) is one of the shorebirds that lives in the wetlands of the Colorado River Delta.



## Value: Identity

Question: What elements should be considered in the greenway for the promotion and strengthening of the sense of identity, taking as foundational the life experiences and cultural diversity of the residents of the Colorado River delta zone and their region?

## Guiding Principles:

- » Include elements in the greenway that promote and strengthen a sense of identity for the residents and inhabitants of the delta region.
- » Include elements in the greenway that promote and strengthen the cultural diversity in the delta region.

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Photo 5: The Colorado River flowing under the San Luis bridge during the 2014 pulse flow. ▲

Photo 6: Amelia Chan and Pedro Buitimea, representatives of the Cocopah Tribe, during the workshop. (third and fifth from left). ►





### Value: Rescue

Question: What are the strategies for a greenway to contribute to the recovery of the river and its cultures?

### Guiding Principles:

- » Create and maintain the greenway with strategies that contribute to the recovery of the river.
- » Create and maintain the greenway with strategies that contribute to the recovery of the cultures associated with the river.



▲ Photo 7: Reforestation activities in the Miguel Aleman restoration site.

◀ Photo 8: Release of the pulse flow from Morelos Dam in 2014.

## Value: Social Cohesion

Question: For whom and how should social cohesion be sought in the population of the Colorado River delta?

### Guiding Principles:

- » Create and maintain the greenway to empower poor and marginalized communities to enjoy the available opportunities.
- » Create and maintain the greenway to advance the wellbeing of all.
- » Create and maintain the greenway in a way that is inclusive to the plurality of communities in the region.
- » Create and maintain the greenway in a way that promotes fidelity and trust between residents of the delta and the whole Colorado River Basin.



Photo 9: San Luis Rio Colorado families enjoying the Colorado River during the 2014 pulse flow. ▲

Photo 10: Holy Week celebrations on the Colorado River Greenway site in 2014. ►





## Value: Responsibility

Questions:

Who has the responsibility, from the source to the Sea of Cortez, for creating and sustaining the greenway?

How can the legacy of the Colorado River from source to sea be acknowledged and reflected?

## Guiding Principle:

Design and manage the greenway in a way that demonstrates to all residents of the Colorado River Basin the shared responsibility of protecting and celebrating the legacy of the River.



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▲ Photo 11: Saltgrass marsh at the mouth of the Colorado River in the High Gulf of California.

◀ Photo 12: Bird observation hut in the Colorado River.



# 3. PRELIMINARY DESIGN IDEAS

The following are initial ideas generated at the workshop to elicit public response. Additional research would be necessary to determine the viability of any of these design concepts.

## Freshwater flows for recreation and restoration

- » Ensure diverse water sources to secure the volumes of water necessary to maintain native vegetation and recreational environmental services in the area.
- » Water use in the region should be optimized, through surface and groundwater planning.

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Photo 13: Aerial view of the Colorado River at the San Luis ▲ bridge during the 2014 pulse flow.

Photo 14: Water releases for environmental purposes for the ► restoration of native vegetation.

Photo 15: Mexican Colorado River water releases from More- ▼ los Dam, USA.





## River, beach, and other types of active and passive recreation

A number of land and freshwater recreation activities are proposed as an integral part of the design of the greenway:

- » Canoe and kayak activities
- » Open space family recreation at the banks of the river
- » Depiction or narration of the natural history of the Colorado River with images
- » Sports fishing
- » Ecotourism tours and environmental interpretation
- » Experiential environmental education service projects for reforestation and management of native plant community gardens
- » Placed-based storytelling
- » Nature trails



▲ Photo 16: Canoeing through the Colorado River Limitrophe zone, Mexico.

◀ Photo 17: Ecotourism activities in the Laguna Grande restoration site.

▼ Photo 18: Family recreation in the banks of the Colorado River.



## Vision of the Cocopah Community

The integration of the vision, perspectives and traditions of local Cocopah culture is an essential part for the design of the greenway. Several elements were recommended, including:

- » Installation of traditional Cocopah huts and gazebos, planted with vegetation from the region.
- » Incorporation into the greenway's architectural designs traditional Cocopah designs, such as ceremonial beadwork pectorals and other crafts.
- » Interpretive Center celebrating the origins, stories, and contributions of Cocopah Tribe (past, present, future).

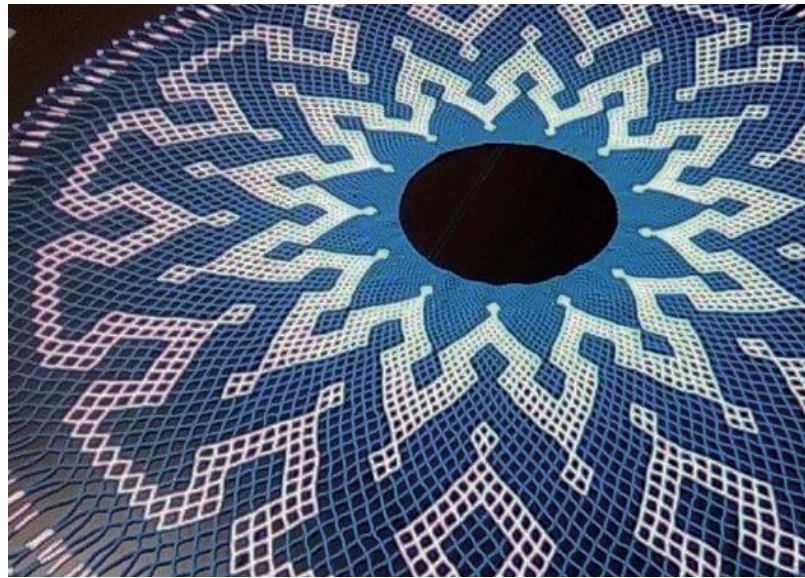


Photo 19: Traditional Cocopah hut, made with native vegetation. ▲

Photo 20: Ceremonial chaquira beadwork pectorals, traditional Cocopah community crafts. ▶

Photo 21: Amelia Chan, cultural representative of the Cocopah Tribe-Pozas de Arvizu. ▼





## Reforestation and Community Gardens with Native Plants

The Colorado River Greenway is being proposed as a site that, while providing recreational and cultural opportunities for the city, will also help to recover the area's ecological functions, creating habitat for wildlife through reforestation with native plants.

Native vegetation is better adapted to survive the high temperatures and arid conditions in the area, strengthening the sustainable design of the park.

Reforestation with native forests is proposed, with higher density of trees, as well as gardening areas, to improve the aesthetics of the park, using a palette of plant species from the region.



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▲ Photo 22: Blooming Palo Verde tree, one of the native species with high ecological and aesthetic value.

◀ Photo 23: Botanic garden example, with drought-tolerant, low water use native species.

▼ Photo 24: Native tree forest (poplar and willow) in the Miguel Aleman restoration site.



## Bird Watching, Bikeways and Trails

In addition to fresh-water related recreational activities, other activities are proposed to reconnect the people to nature and the Colorado River:

- » Birdwatching, through guided tours
- » Bikeways to traverse the greenway and to connect the greenway to other city zones of interest
- » Trails and gazebos



Photo 25: Birdwatching group in the Las Arenitas Wetland. ▲

Photo 26: Example of bikeway integrated into the landscape and restoration project. ▶

Photo 27: Gateway Park in Yuma, AZ with interpretative trails, gazebos, and beach area for enjoying the Colorado River. ▼



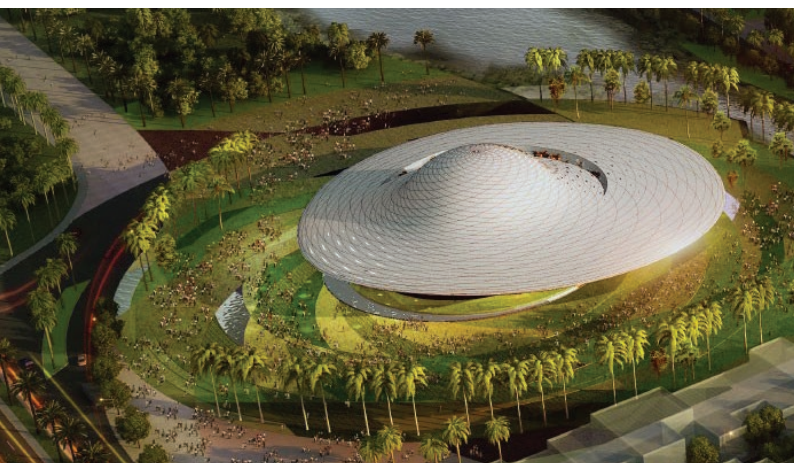
## Zipline



## Renewable Energy



## Acuífero (“The Aquifer,” sister amphitheater to Red Rocks Amphitheatre (Denver)

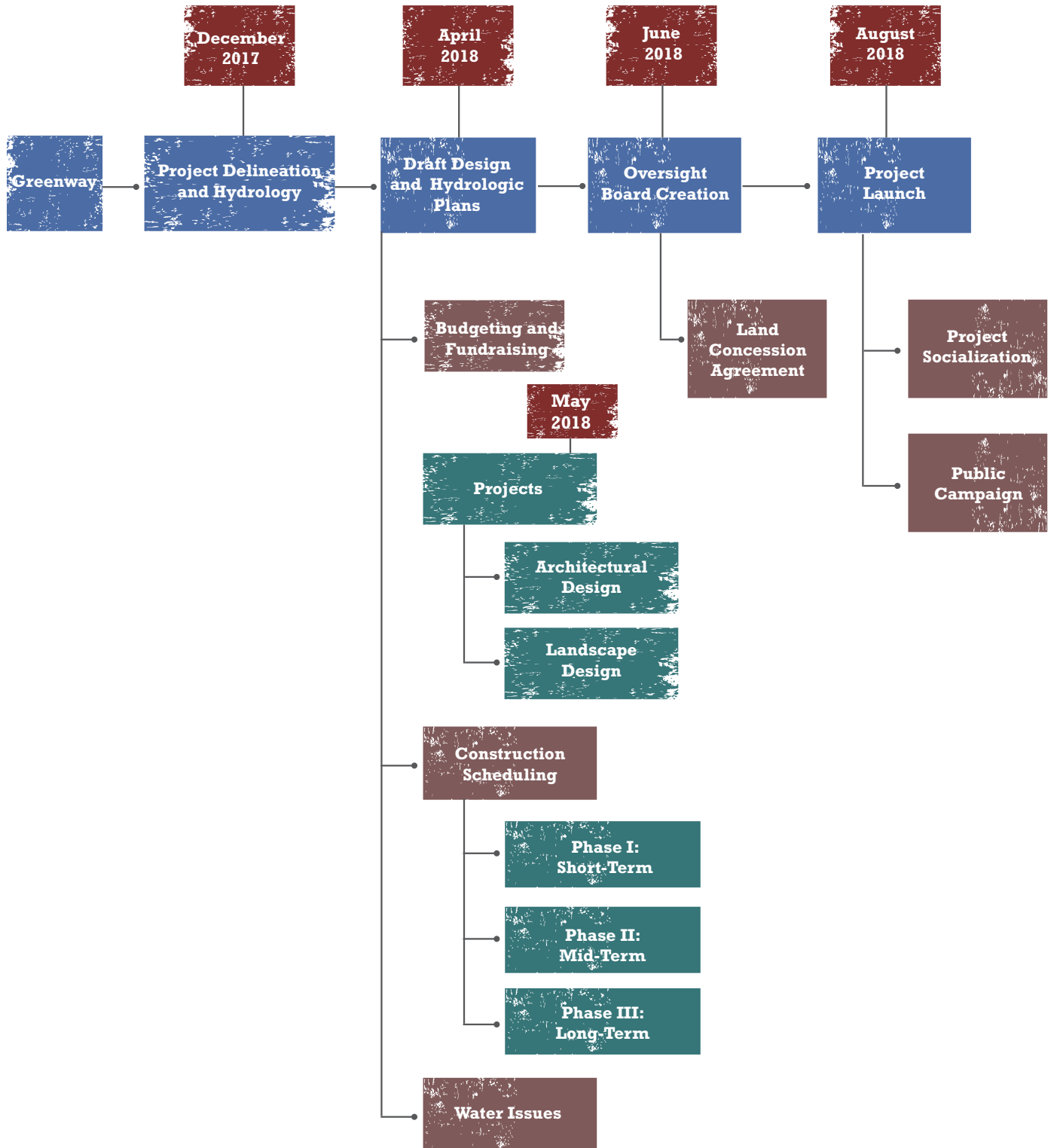


## Observation Tower



- ▲ Photo 28: Observation towers as greenway amenities for the observation of birds and the landscape
- ◀ Photo 29: Ziplines can be a recreational activity in the Greenway.
- ◀ Photo 30: Installation of solar panels is recommended as a sustainability and education strategy.
- ◀ Foto 31. Mazatán Museum Design, by Fernando Romero, as inspiration for the Greenway’s El Acuífero Amphitheatre.

# 4. CRITICAL PATH



## APPENDIX A: WORKSHOP OBJECTIVES

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### Objectives of the design workshop

1. Use the kick-off greenway charrette to help prepare a larger group of people to be able to help conduct future charrettes with the public.
2. Identify clearly: possible initial concepts of the greenway for the site; as well as greenway planning, implementation and administration question.

### Work product of the workshop: Colorado River Greenway Sourcebook

Each section of the Sourcebook will be produced in the workshop by the participants, including:

- » Vision and Values
- » Guiding Principles
- » Preliminary design ideas
- » Planning itinerary (for park design)
- » November 2017 workshop participants and process





## APPENDIX B: BRAINSTORMING GUIDELINES FOR FUTURE COMMUNITY ASSESSMENTS

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### Guidelines

1. Defer judgement
2. Encourage wild ideas
3. Build from ideas of others
4. Stay focused on the topic and question presented
5. Have one conversation at a time
6. Be visual
7. Quantity over quality

- 1. Defer judgement.** You never know where a good idea is going to come from. The key is to make everyone feel like they can say the idea on their mind and allow others to build on it.
- 2. Encourage wild ideas.** Wild ideas can often give rise to creative leaps. In thinking about ideas that are wacky or out there, we tend to think about what we really want without the constraints of technology or materials.
- 3. Build on the ideas of others.** Being positive and building on the ideas of others take some skill. In conversation, we try to use “and” instead of “but.”
- 4. Stay focused on the topic.** Try to keep the discussion on target, otherwise you can diverge beyond the scope of what you’re trying to design for.
- 5. One conversation at a time.** Your team is far more likely to build on an idea and make a creative leap if everyone is paying full attention to whoever is sharing a new idea.
- 6. Be visual.** In live brainstorms we write down on Post-its and then put them on a wall. Nothing gets an idea across faster than drawing it. It doesn’t matter if you’re not Rembrandt!
- 7. Go for quantity.** Aim for as many new ideas as possible. In a good session, up to 100 ideas are generated in 60 minutes. Crank the ideas out quickly and build on the best ones.





## APPENDIX C: SAMPLE MEETING OUTLINE

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### POSSIBLE PUBLIC MEETING FORMAT

1. Welcome
2. Purpose of this meeting is to ask your input on the design and management of a lineal park on the Colorado River.
3. How many of you remember what the river looked like at the bridge in the spring of 2014? The incredible turnout. (Show photo.)
4. Did you know that the pulse flow was created for ecological health reasons, and only after the public's dramatic response people realized how important the flow was for people and community?
5. Since then a groundswell of interest has developed for finding ways of creating a park within the urban reaches of the river.
6. In November, Mayor Reina convened a workshop with more than 30 local experts and representatives from government, academia, civil society, and the Cocopah Tribe to begin initial explorations of the possibilities for a greenway or lineal park near the federal bridge for the enhancement of nature and community.
7. Today we will be presenting the outcomes of that workshop and asking for your input.
8. Present values and design principles from workshop. Ask public meeting participants for additional values they would like to see reflected in the creation of the park.
9. Have participants vote on their top three choices and brainstorm design principles for any newly proposed values that are top vote-getters.
10. In break-out groups, brainstorm potential prototypes that could respond to the priority design principles.
11. Record all public input.

## APPENDIX D: NEWS ARTICLES

### Working on a Greenway Project

Environmentalists, civil society, members of the Cocopah ethnic group, universities, professional colleges, government authorities and officials public that work in dependencies related to the care for the environment and natural resource management have come together to agree on the creation of a Colorado River Greenway for the city.

Architect Nancy Saldaña Navarro, as a civil society representative, announced that a Wednesday through Thursday workshop was held to address the project which, if realized, will be the region's first greenway.

In addition to residents of San Luis, people from Denver interested in the development of this important project, with whom the local community had contact following the "pulse flow," also participated in the workshop.

The workshop participants had the opportunity to visit the city's wastewater treatment plant, the artificial wetland being built, the reforestation zones of "Laguna Grande" and the colony of Miguel Alemán, from the Mexicali valley, and below the Colorado River bridge.

Nancy Saldaña stressed that greenways are a worldwide concept, and that San Luis Río Colorado's is intended to start on the dividing line between Mexico and United States, that is, from the metal fence to the south, one side of the riverbed; for approximately 3 kilometers until reaching the siphon area.

By Gloria Negrete  
Friday November 10, 2017  
San Luis Tribune

On this project people are working together from this municipality and from Denver, declaring themselves sister cities, united by the Colorado River. Hence the interest in coordinating efforts to make possible the greenway in San Luis and also well as another sister one contemplated for Colorado.

A guide will be produced from the activities carried out in this workshop, for the planning and design of the project, which is expected to be ready by July, so in this way start with the management of the financial resources required to execute it.

She mentioned that the mayor of San Luis Rio Colorado, Enrique Reina Lizárraga, who attended the workshop, has shown interest in supporting and participating actively in the project, evidencing the commitment to join this effort and to make the necessary arrangements so that funds are allocated to complete this work and bring it into existence.

The greenway will have among others, marked hiking trails, areas for family recreation, bicycle paths, areas to admire nature, spaces to learn about regional history, places for artistic and cultural expressions, said Nancy Saldaña.



## HOW YOU CAN SUPPORT THIS AND OTHER RIVER SISTERS PROJECTS

We welcome your ideas and other support to help create the greenway in San Luis Río Colorado and to develop more of the potential of the River Sisters Initiative across the entire Colorado River Basin, the lifeline of the southwestern United States and northwest Mexico, and a resource of global significance.

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**Solving problems by building community  
Building community by solving problems**



AYUNTAMIENTO DE  
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