Creating a Complete Los Angeles River Greenway For All

STORIES AND GUIDANCE

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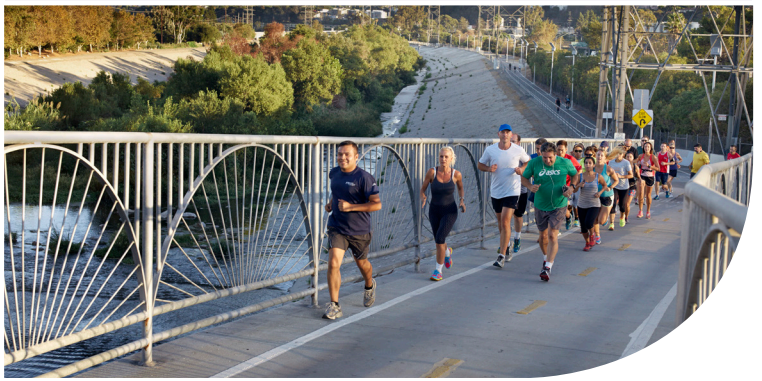
ACCESS

PARKS

PATHWAYS

BRIDGES



UCLA Luskin School *of* Public Affairs

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LA RIVER GREENWAY GUIDE

ABOUT AND AUTHORSHIP

The UCLA Luskin Center for Innovation presents *Creating a Complete Los Angeles River Greenway: Stories and Guidance* (Guide) to recognize the achievements of those who have successfully developed portions of the Los Angeles River (LA River) greenway while providing advice to those interested in promoting a continuous greenway in their community. This Guide features 14 case studies of small and large projects that have improved community access to the LA River and/or created parks, pathways, or bridges along it. We include considerations for how to: develop clear project goals, strategic partnerships, and reasonable timelines; engage and empower community members; develop creative project designs; determine accurate project costs; consider funding options; effectively coordinate with numerous permitting agencies and private land owners; and sustain long-term project operations and maintenance.

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Please refer to the acknowledgment section at the end of each chapter for the names of specific individuals who generously shared their time to provide crucial information and thoughtful feedback for this report.

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DISCLAIMER

The UCLA Luskin Center appreciates the contributions of the many project proponents and reviewers that we name in the acknowledgments sections. This Guide does not, however, necessarily reflect their views. Any errors are those of the authors.

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Introduction

SUMMARY

Quietly pulsing through 51 miles of industrial lots, open space areas, and residential neighborhoods with a wide range of income levels and ethnic groups, the Los Angeles River (LA River) is a vast natural resource with unrealized potential to benefit the public. Long hidden in plain sight, the LA River is now center stage in discussions of open space and recreation, active transportation, regional watershed management, ecosystem restoration, climate resilience, and public art transforming the Los Angeles region.

Figure 1 – 1: *The LA River snakes its way through a diverse and densely-populated LA County.*

Enthusiasm among a broad group of stakeholders is growing around visions for the LA River, including those for a continuous, comprehensive, and accessible greenway. This document defines a complete LA River greenway as an active transportation, open space, and recreational corridor involving a network along both sides of the 51-mile river of: 1) community access points, 2) parks and other green spaces, 3) pedestrian, bike, and equestrian paths; and 4) bridges for non-motorized use.

People of all ages can enjoy the LA River and its greenway. There are parks and trails for exercise, bike paths for commuting, bridges for connecting communities, and places to stop, meet friends, or observe wildlife. An expanded greenway network could result in numerous social, health, transportation, and environmental benefits for the region.

Greenway projects have been and will continue to be forged by the initiative of local communities, nonprofits, and local governments. Several grassroots and government organizations have already blazed a trail to build greenway projects along the LA River, yet the documentation of their stories and lessons learned has been limited—until now.

UCLA's Luskin Center for Innovation presents Creating a Complete Los Angeles River Greenway: Stories and Guidance (Guide) to recognize the achievements of those who have successfully developed portions of the river greenway and to provide advice to those interested in advancing a continuous greenway in their community. This Guide features 14 case studies of small and large projects that have improved community access to the LA River and/or created

Figure 1 – 2: *The LA River greenway provides diverse users with opportunities for recreation often not accessible to them in their communities.*

Credit: Andrew Pasillas

parks, pathways, or bridges along the river. We identify commonly reported development challenges and offer suggestions on how to overcome them. We include considerations for how to: develop clear project goals, strategic partnerships, and reasonable timelines; engage and empower community members; develop creative project designs; determine accurate project costs; consider funding options; effectively coordinate with numerous permitting agencies and private land owners; and sustain long-term project operations and maintenance.

Figure 1 – 3: *The Trust for Public Land celebrates the groundbreaking of the Los Angeles River and Aliso Creek Confluence Park project alongside LA City and County officials and local residents in Reseda.*

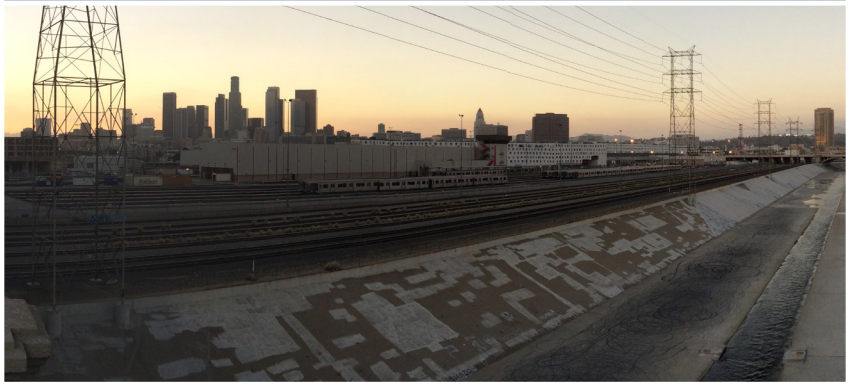
Credit: Andrew Pasillas

BACKGROUND

For thousands of years, before being settled by the Spanish in the late 1700s, the land surrounding the LA River was home to the Tongva people. The LA River naturally ran wild and unpredictably, changing course over time and regularly flooding. This seasonal flooding supported a thriving agricultural sector through natural irrigation and the deposit of rich sediments from the San Gabriel Mountains.

Even after the arrival of the Spanish and then American settlers, for centuries the simplest and most effective approach to avoiding flood damage was to locate infrastructure and development outside a river's floodplain. However, once the Los Angeles Aqueduct was completed in 1913, the City of Los Angeles no longer depended on the LA River as a main source of water and by the 1930s, housing development began to encroach upon the floodplain, increasing flood risk from the often meandering river.

Figure 1 – 5: *Nearly 300 feet in width along certain stretches, the concrete channelized LA River is often inaccessible and unwelcoming.*



Credit: Andrew Pasillas

In response to devastating flooding in 1938, the U.S. Army Corps of Engineers straightened, deepened, paved, and channelized the LA Riverbed and banks, creating a "water freeway," for transporting storm water and treated wastewater to the sea. The channelization of the 51-miles of the LA River was completed in 1960. For most of the 20th century, the river was viewed merely from a flood control perspective, rather than as a resource for the public's use and enjoyment.

Figure 1 – 4: *Some stretches of the LA River, such as the stretch pictured here in the Elysian Valley, provide a glimpse of what the natural habitat may have once looked like.*

Credit: Andrew Pasillas

An Alternative Vision to Reconnect with the Los Angeles River

Since the mid-1980s, an alternative vision of the LA River has emerged: one that seeks to reclaim its potential as part of the public commons and a recreational asset accessible to all. However, this is not a new idea. The Olmsted-Bartholomew Plan was quietly released in 1930. It charted how Los Angeles lacked parks and laid out detailed plans for parks, pathways, and other open space that Los Angeles could grow around. Among other things, the plan proposed protecting the still living river as a part of a network of connected open spaces. However, the Los Angeles Chamber of Commerce, which commissioned the study, never made the report widely available.

Fast forward to 1985, when poet and environmentalist Lewis MacAdams and a few friends cut a hole in a chain-link fence and descended into the LA Riverbed, beginning a crusade to bring life back to the LA River. In the decades since, community, nonprofit, and government entities have worked in various capacities to transform the LA River from a single purpose piece of infrastructure—as a flood-control channel—to a public amenity that generates many other benefits. Community leaders helped instigate the resurgence of environmental work along the LA River and in the region. Dorothy Green, a water quality activist, formed the nonprofit Heal the Bay while Lewis MacAdams established the nonprofit organization, Friends of the Los Angeles River (FOLAR).

FOLAR, North East Trees, The Trust for Public Land, The River Project, and other nonprofits have contributed to neighborhood-scale projects along the LA River. Local, regional, state, and federal agencies—including the City of Los Angeles; Los Angeles County; California Coastal Conservancy; the Mountains Recreation and Conservation Authority; and the U.S. Army Corps of Engineers—have also made significant contributions to greenway development.

Figure 1 – 6: *Rattlesnake Park in the Elysian Valley features the Great Heron Gates, an artistic access point designed by a local artist to portray LA River wildlife.*

Credit: Andrew Pasillas

OVERCOMING CHALLENGES

In recent years, progress toward revitalization of the LA River has gained tremendous momentum. However, obstacles continue to impede the transformation. Attempts to propose, design, and implement projects within the LA River corridor are constrained by physical barriers, use agreements, and complicated ownership structures. For over seven decades, LA River-adjacent development has involved heavy rail and highway transportation, major drainage and sewage conduits, electrical utility infrastructure, and industrial activities. This infrastructure cannot be easily moved, making greenway development challenging. The LA River runs through more than a dozen municipalities, and intersects with many county, state, and federal government easements. The puzzling assemblage of title ownership, leases, rights-of-way, and use agreements reflects the geographic complexity of the Los Angeles region. For more information, see the section on governance and jurisdictional issues.

Due to the physical and administrative fragmentation of the LA River described above, LA River revitalization has been implemented to date on a project-by-project basis, with temporary coordination between project proponents. This piecemeal approach and complicated patchwork of property entitlements constrains the size and scope of potential public benefit projects within the LA River corridor. This is reflected in the current status of the greenway: linear pathways along the LA River are divided into discontinuous segments with varying degrees of public access, landscaping, and recreational amenities.

The Guide's focus on individual projects is not necessarily an endorsement of a project-by-project approach to LA River revitalization. Instead, our aim is to accurately document what has happened in the past to help inform and inspire future efforts that over time may become ever more transformative.

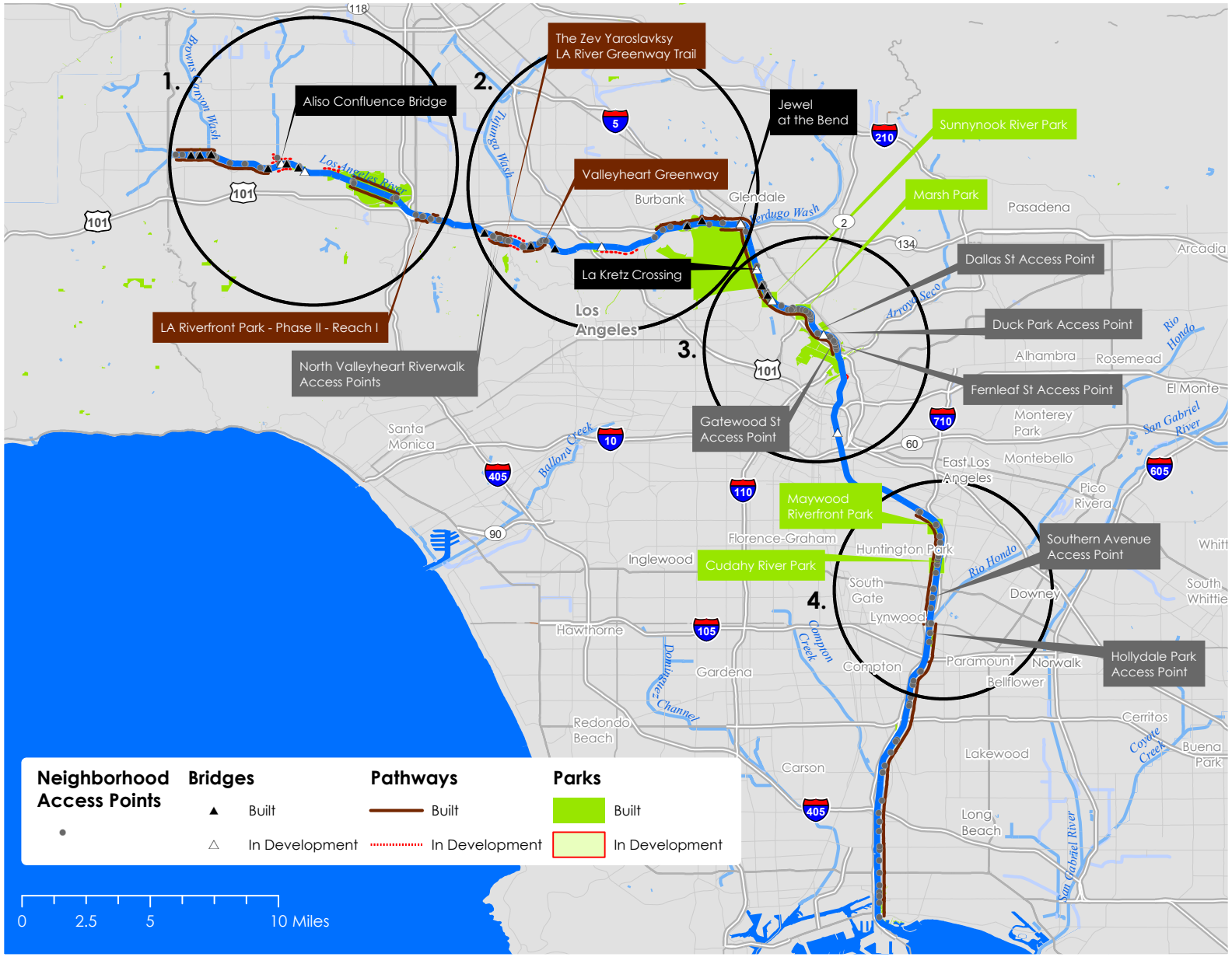
To kick-off this research project, UCLA created a comprehensive database of existing access points, parks, pathways, and bridges along the LA River.[1] To do so, we extensively analyzed sites using Google Earth and verified the information via site visits. We also incorporated information from various LA River greenway project mapping and database resources provided by the City of Los Angeles' LARiverWorks in the Office of Mayor Eric Garcetti.

The following series of maps show the distribution of existing and under development greenway projects along the LA River. The first map (Figure 1 – 7) shows all 51 miles of the LA River, giving an overview of project locations along the greenway. The following maps (Figures 1-9 through 1-13) then zoom into four sections along the upper and lower parts of the LA River that we have called out for illustrative purposes. The labeled projects on the maps are the case studies we highlight in this Guide.

Projects along the LA River appear well distributed in the overview map. However, the zoomed in maps reveal the inequities in LA River project placement. For example, Figure 1 – 9 shows a three mile gap in pathway connectivity on the south side of the LA River while Figure 1 – 10 shows a six mile gap. Figure 1 – 12 shows a dense distribution of greenway features but they are concentrated entirely along the west bank. Similarly, Figure 1 – 13 shows a moderate distribution of amenities, but they are found only along one side of the LA River.

[1] While we aimed to create the most up to date maps at the time of publication, greenway efforts are fluid and ongoing, meaning that these maps may not be comprehensive. The maps are meant to give an overview of the LA River greenway landscape to assist in informing future prioritization of projects.

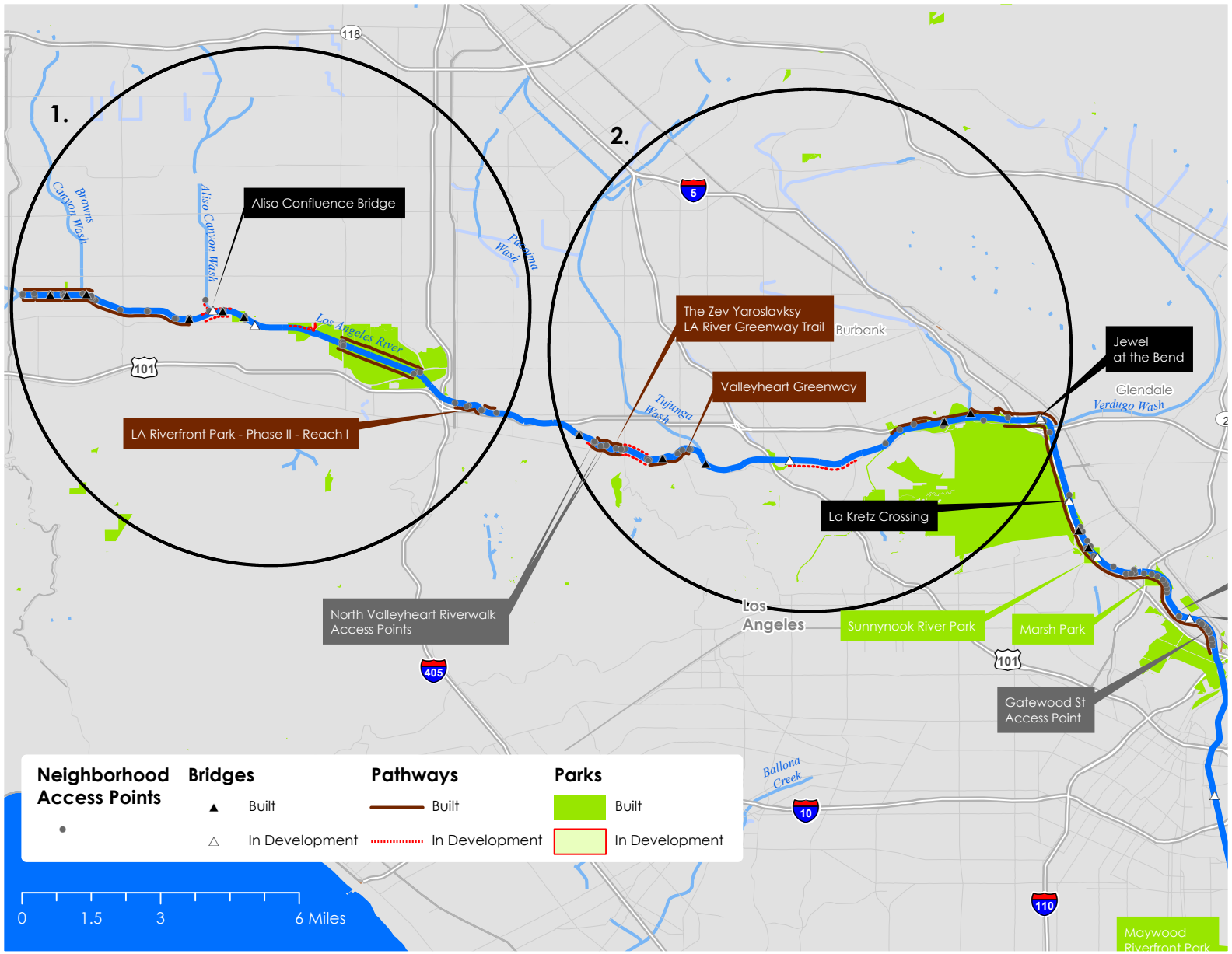
Figure 1 – 7: *Greenway projects along the 51 miles of the LA River are inequitably distributed.**



* *Labels indicate the case study projects featured in this Guide.*

Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

Figure 1 – 8: *Map of a portion of the upper LA River and its greenway features (identifying what we are calling sections 1 and 2). * Labels indicate the case study projects featured in this Guide.**



* Labels indicate the case study projects featured in this Guide.

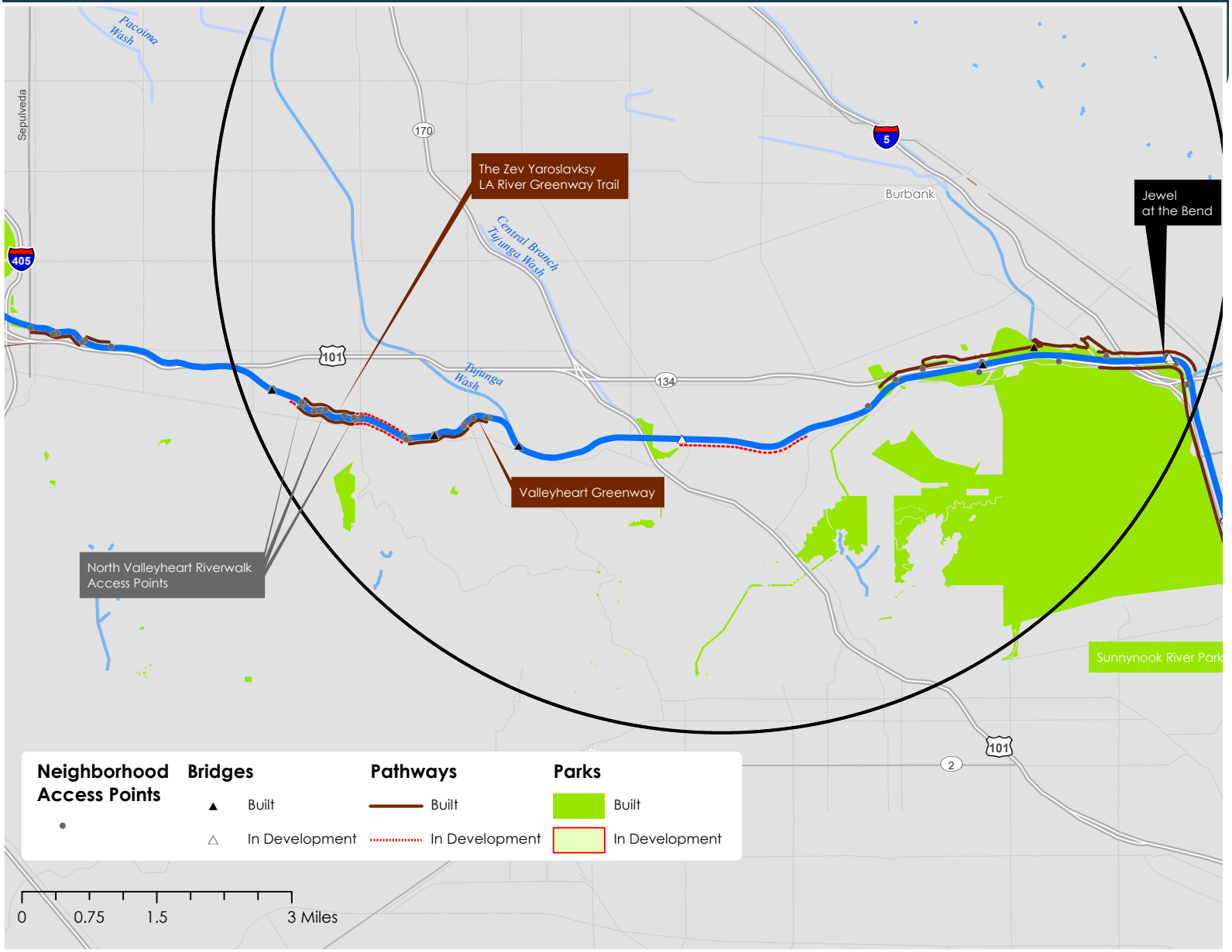
Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

Figure 1 – 9: *Map of Section 1. The upper LA River has multiple greenway amenities but pathways are fragmented.**

** Labels indicate the case study projects featured in this Guide.*

Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

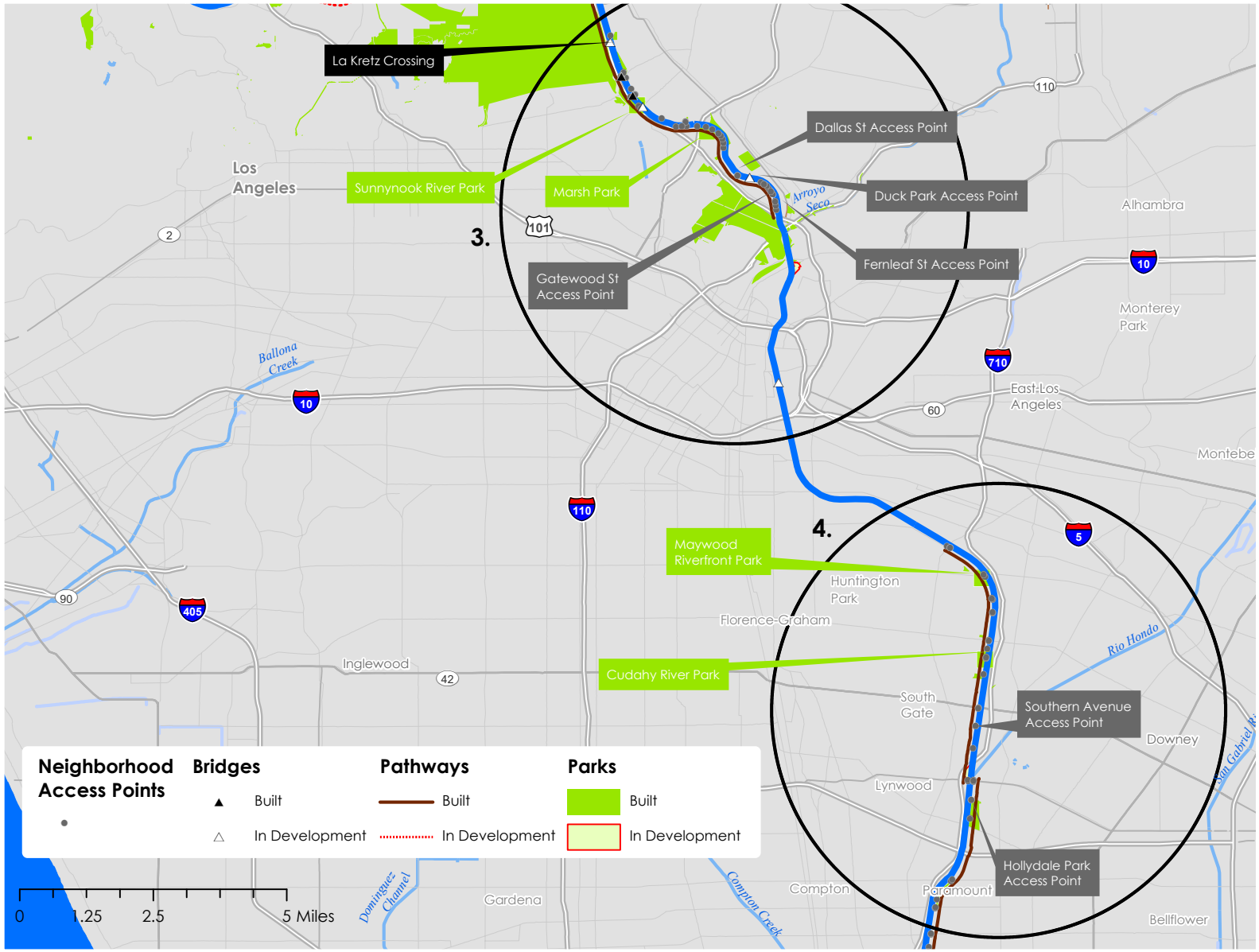
Figure 1 – 10: *Map of section 2. There is a six mile gap in pathway connectivity.**



** Labels indicate the case study projects featured in this Guide.*

Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

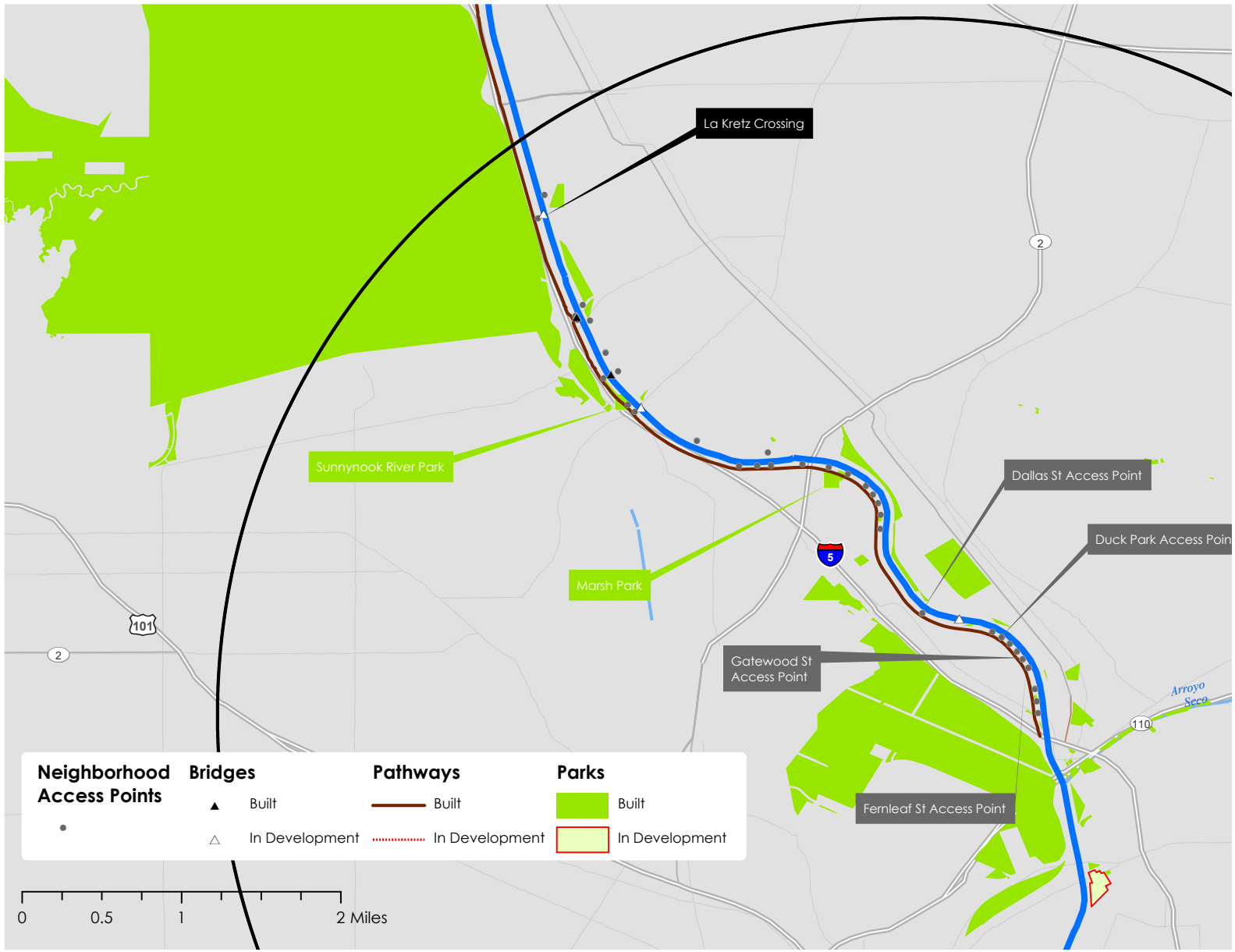
Figure 1 – 11: *Map of a portion of the lower LA River (identifying what we are calling sections 3 and 4).**



* *Labels indicate the case study projects featured in this Guide.*

Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

Figure 1 – 12: *Map of Section 3, exhibiting the concentration of greenway features on only one side of the LA River and the lack of bridges to connect the two sides.**



* *Labels indicate the case study projects featured in this Guide.*

Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

Figure 1 – 13: *Map of Section 4, showing the concentration of amenities on one side of LA River or the other.**

** Labels indicate the case study projects featured in this Guide.*

Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

Importance of Access to the LA River

The maps on the previous pages illustrate that while there have been many greenway projects implemented to date, there are also many development gaps underscoring inequities. For instance, all bridges for non-motorized use and the majority of parks are located in the "upper", northern half of the LA River above the City of Vernon, in places such as northeast Los Angeles. While substantial work has taken place, within the boundaries of the City of Los Angeles, the "lower", southern segment of the LA River from the City of Vernon to the City of Long Beach has not shared a similar level of grassroots, municipal, state, or federal attention and resources. This is despite the fact that many communities along the lower portion of the LA River have a disproportionate need for more park and open space. This has created the problem of unequal access and use of the LA River as a community asset.

In the transit-poor, notoriously decentralized context of Los Angeles County, an uninterrupted greenway would link diverse neighborhoods and provide an active transportation and recreational corridor that people of all income levels could use. Specifically, the greenway would create feasible and cost effective alternatives to automotive travel and improve local connectivity to transit. It would also create new recreational opportunities in park-poor areas and connect to historically separated destinations, such as parks and playgrounds. Businesses would be drawn to these amenities, spurring economic development opportunities along a community destination hub.

Figure 1 – 14: *The Dominguez Gap Wetlands project was completed in the City of Long Beach in 2008 and is one of the few multi-benefit revitalization efforts along the lower LA River.*

Credit: Henry McCann

Figure 1 – 15: *Spoke Bicycle Café, a LA River-adjacent local business in the Elysian Valley, has created an inclusive social space for greenway users to enjoy the LA River and build community.*

Credit: Andrew Pasillas

Importance of Equitable Access to the Table

To date, many LA River revitalization efforts have used a collaborative but top-down approach, much of which is necessary given the highly technical and expensive nature of the work. But a lot of stakeholders would like to see improved processes whereby the public can better engage and influence big decisions. This Guide is designed to educate and empower community members to help take river revitalization into their own hands. We underscore the importance of holistic, community-driven, and collaborative planning. Community-driven planning can ensure that projects maximize benefits to the local community. It could also help to avoid potential unintended consequences, like housing displacement. In particular, this is currently a topic of fierce debate in an 11-mile stretch of the LA River just north of downtown LA. This area is expected to receive a large infusion of public monies that could increase property values and displace locals surrounding the investment area.

Specifically, we also underscore the importance of collaborative planning that brings together leaders from public health, transit, affordable housing, and other sectors to work on shared goals for livable river communities. This would include preserving and building more affordable housing along the LA River, ensuring residents benefit from the jobs that will be created with infusions of public investment, and linking the greenway (as an active transportation corridor) to transit.

LA RIVER INITIATIVES

Master Planning for the LA River Greenway

Visions of a transformed LA River corridor are documented in multiple master plans, most significantly: the Los Angeles River Master Plan completed by Los Angeles County in 1996 and the Los Angeles River Revitalization Master Plan completed by the City of Los Angeles in 2007. Also in 2007, the City of Long Beach released their RiverLink plan. The plans prioritized many of the specific projects featured in this Guide and provide guidelines for future project development.

Greenway project inclusion in master planning documents provides a foundation of general development support which can be leveraged during partnership building, fundraising, land use negotiations, and other development steps. The Los Angeles River Revitalization Master Plan is a particularly comprehensive plan for efforts in the City of Los Angeles but it also includes information relevant for all greenway development. It contains a robust set of priorities that have helped result in myriad projects in the upper segment of the LA River.

Greenway 2020, an initiative championed by the nonprofit organization River LA (formerly known as the Los Angeles River Revitalization Corporation), is one of the few plans that includes all 51 miles of the LA River. The collaborative initiative is led by River LA, and brings together efforts by the City and County of Los Angeles, local community organizations, business associations, foundations, and elected leaders. Greenway 2020 aims to complete a continuous, safe, and well-designed greenway along the entire LA River by the year 2020.[2] The vision is to use the riverbank as a continuous 51-mile active transportation and recreational corridor, and be the "spine" of larger bike and pedestrian networks and enhance regional public transportation networked systems. This would generate significant transportation, health, social, environmental, and economic benefits on both a local and regional scale.

Figure 1 – 16: *Located in the Los Angeles neighborhood of Canoga Park, the Los Angeles River Headwaters project is a comprehensive greenway effort that fulfills multiple master plan objectives and features 1.25 miles of pathway on both banks of the LA River.*

Credit: Andrew Pasillas

[2] For more information, visit http://www.laRivercorp.com/greenway2020.

The Emerald Necklace Forest to Ocean Expanded Vision Plan (Emerald Necklace Plan) aims to bring back the vision outlined in the Olmsted-Bartholomew Plan from 1930. Produced in 2014 by the non-profit organizations Amigos de los Rios and The Conservation Fund, the Emerald Necklace Plan recognizes all of the existing LA River master plans and acknowledges that many of the same challenges and recommendations highlighted in the Olmsted-Bartholomew Plan are relevant today. For example, Los Angeles still struggles with growing pains and a lack of green and open space. The Emerald Necklace Plan looks at opportunities to implement green infrastructure to connect people and wildlife to the county's lands and waters. It focuses on more than just the LA River: 1,500 acres of parks and open spaces that are interconnected along a greenway around the Rio Hondo River, San Gabriel River, and the lower LA River.[3]

Economic Development Planning and the LA River Greenway

In addition to master planning focused on the LA River and its greenway, there are also economic development plans for river-adjacent communities. The plans typically focus on ways to incentivize development and investment, and often also involve community input and sustainability goals.

For example, the Cornfield Arroyo Seco Specific Plan (CASP), developed in 2013, aims to incentivize development just northeast of downtown Los Angeles. CASP includes detailed design guidelines and reduced restrictions for projects in compliance. The plan was developed through an extensive community outreach and stakeholder engagement process.[4] LA River greenway project leads can benefit from streamlined permitting and regulatory processes if they follow the CASP's guidelines.

The Northeast Los Angeles Riverfront District Vision Plan and Economic Development Implementation Strategy focuses on the Glendale Narrows section of the LA River. The plan was collaboratively developed and seeks to achieve multiple goals including: to improve governmental coordination and regulation of reinvestment activities, support employment opportunities, enhance social equity, and promote sustainable economic development.[5] These plans can help shape greenway development as part of a greater network of sustainable neighborhoods.

A myriad of other inspiring visions and innovative ideas are continuously forming to bring both people and nature back to the LA River and to expand economic opportunity for river-adjacent communities. It is beyond the scope of this Guide to highlight all of the visions and current efforts.

[3] To access the plan, visit https://issuu.com/amigosdelosrios/docs/adlr_and_tcf_en_forest_to_ocean_exp

[4] LABC Institute (2015), "LA's Next Frontier: Capturing Opportunities for New Housing, Economic Growth, and Sustainable Development in LA River Communities." Web. 5 May 2016. http://www.labusinesscouncil.org/files/LABC_SS-15_River_Report_final_by_page_r-2.pdf

[5] *Ibid*.

The LA River Channel and Greenway

Many efforts are centered on ecosystem restoration of the LA River. Given the scope of this document, we focus on the development of LA River-adjacent spaces (not the LA River itself) but recognize that they are intrinsically linked. For example, storm water capture and infiltration in the LA River greenway and larger watershed may reduce the risk of flooding from the river, which in turn can support additional LA River-adjacent greenway projects. Thus, in addition to supporting important ecosystem and water system goals, work within the LA River channel can also support the success of projects adjacent to the LA River, in the greenway. Current efforts to restore the LA River ecosystem can complement goals to bring people to the LA River.

The structure of the LA River channel can also hugely impact river greenway projects. The channel varies significantly in width, depth, shape, and composition (concrete lining or soft bottom). For example, there are often more limitations (i.e. safety standards) to greenway project design options along the LA River where the concrete lining is rectangular and narrow rather than in areas where the channel is trapezoidal. Channel geometry can impact flood capacity, hydraulic conditions, water quality, habitat value, and the non-motorized transportation and recreation potential of the greenway.[6] The projects highlighted in this Guide, as well as all LA River greenway projects, face unique constraints and opportunities at each location.

Figure 1 – 17: *Variations in channel structure exist throughout different stretches of the LA River. The first image shows a portion of the LA River Headwaters project in Canoga Park and the second shows a stretch located in the Sherman Oaks neighborhood of Los Angeles.*

Credit: Andrew Pasillas

[6] City of Los Angeles Department of Public Works Bureau of Engineering (2007) Los Angeles River Revitalization Master Plan. Issues Affecting the Plan chapter. http://boe.lacity.org/lariverrmp/CommunityOutreach/masterplan_download.htm

Part of a Greater Watershed

While this Guide is focused on the LA River, we also recognize that the river is part of a larger watershed and network of waterways that are connected hydraulically and ecologically. There are relevant plans related to these other rivers such as the San Gabriel River Corridor Master Plan from 2006, which helped inform the Los Angeles River Revitalization Master Plan, and the Compton Creek Regional Garden Park Master Plan from 2011, which also contains guidance applicable to other rivers. The recommendations provided in this Guide are relevant to other river greenways, beyond the LA River.

Opportunities on the Horizon

Fortunately, there are new opportunities bringing attention and resources to LA River greenway projects, with a particular focus on the lower portion of the river. For instance, Assembly Bill 530, sponsored by Assemblyman Anthony Rendon (now Speaker of the House) and signed into law by Governor Jerry Brown in 2015, establishes a local working group to develop a lower LA River revitalization plan. The planning process recognizes that the LA River flows across jurisdictional boundaries and a collaborative master plan could leverage much needed greenway development funding for underserved communities in the Gateway Cities and southeast Los Angeles region. The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy staff the working group, which will be eligible for state funding under Proposition 1, the 2014 water bond authored by Rendon. These funds could also be used for specific LA River greenway projects identified as a priority by the working group.

To support AB 530 implementation, in January 2016, River LA launched the creation of a 51-mile integrated design study of the LA River that can be built upon by the working group in its process to establish a formal plan. The data-driven study—conducted in partnership with Geosyntec, architect Frank Gehry, and landscape architect Laurie Olin—will also include a digital platform to make the findings accessible to the public for future design planning.

In partnership with North East Trees, the Watershed Conservation Authority—a local public entity exercising joint powers of the LA Rivers and Mountains Conservancy and the Los Angeles County Flood Control District—recently launched plans to develop a visionary Gateway Cities and LA Rivers Urban Greening Master Plan for the Lower LA and San Gabriel Rivers within the 26 cities and unincorporated areas that make up the Gateway Cities. The goal is to develop a plan that incorporates public input and existing plans, such as the upcoming lower LA River revitalization plan, and guides greening projects in the Gateway Cities of southeast Los Angeles County. The plan will identify opportunities for new and improved parks, trails and bikeways, as well as places to implement living streets and green infrastructure—including water conservation and storm water capture features.

New Funding Resources

There are several new and potential funding opportunities on the horizon. In addition to Proposition 1 mentioned earlier, community advocates are asking the California Department of Transportation to fund transportation improvements along the lower LA River that runs near Interstate 710. Advocates have pushed the Los Angeles

County Metropolitan Transportation Authority to include money for active transportation and green infrastructure projects, including LA River greenway projects, in the Measure R2 November 2016 ballot measure. Early estimates predict this new 45-year half-cent sales tax would raise about $100 billion.

Enhanced Infrastructure Finance Districts (EIFDs) are a new and potential permanent source of funding for LA River revitalization efforts. As of January, 2015, cities and counties can access a share of the increase in property tax revenue through creation of an EIFD. The funds generated can be used for public works projects and other projects that would significantly affect the surrounding community and district.[7] The City of Los Angeles is already investigating the creation of an EIFD along the 31 miles of LA River within the city boundaries.

Figure 1 – 18: *Both sides of land adjacent to this stretch of the LA River in downtown Los Angeles are heavily utilized railroad corridors.*

Credit: Andrew Pasillas

[7] For more information on EIFDs and their potential to fund LA River greenway projects, see Public Counsel's 2016 report "Enhanced Infrastructure Finance Districts and Equitable Revitalization of the Lower Los Angeles River: Stable Neighborhoods, Healthier Communities."

JURISDICTIONAL AND GOVERNANCE OVERVIEW

In order to leverage these opportunities and advance LA River greenway projects, it is important that potential project proponents understand key details about the complex jurisdictional and governance issues affecting LA River projects.

There are two main management areas of the LA River that affect issues of ownership, easements, and maintenance responsibilities. The first is the flood control right-of-way in the river itself and on the immediately adjacent land. The second is the "greater LA River corridor." The U.S. Army Corps of Engineers (USACE) and the Los Angeles County Flood Control District, operated by the Los Angeles County Department of Public Works, own part of the LA River right-of-way and are responsible for maintaining the river and its banks. See the Easements and Maintenance section for details. Cities, federal agencies, the State of California, public utilities, railroads, and other private and public entities own or have rights to portions of the LA River corridor. This can include holding the fee titles or easements on river- adjacent land. For example, a utility company may have an easement on a piece of property owned by a private entity allowing them to enter at any time to maintain equipment (e.g. power lines), even though the utility does not own the property.

Several areas along the LA River have overlapping easements held by agencies that provide distinct services.[8] For example, the stretch of LA River between Los Feliz and Colorado Boulevards is owned by the

[8] Los Angeles County Department of Public Works (1996) Los Angeles River Master Plan. Jurisdiction and Public Involvement chapter. http://ladpw.org/wmd/watershed/LA/LARMP/

City of Los Angeles; it has granted a flood control easement to the USACE for maintenance; and the City of Los Angeles Department of Water and Power has an easement to provide maintenance of their transmission towers.

Jurisdictions

While the LA River lies entirely within Los Angeles County, fifteen different cities and the unincorporated areas of LA County have authority over the land adjacent to the river. These cities are responsible for land use decisions and providing services to their residents. As such, LA River projects must abide by city specific codes and regulations, such as building and safety codes, to receive city approval.

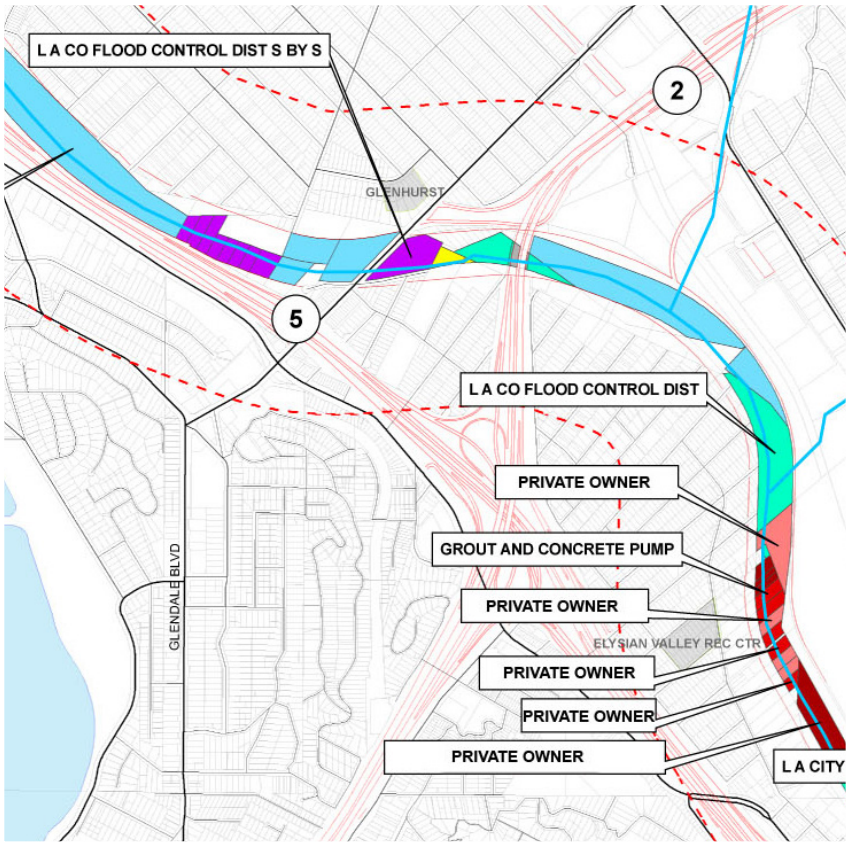
The following cities have jurisdiction along the LA River:

- Bell
- Bell Gardens
- Burbank
- Carson
- Commerce
- Compton
- Cudahy
- Glendale
- Long Beach
- Los Angeles
- Lynwood
- Maywood
- Paramount
- South Gate
- Vernon

Ownership and Governance

The LA River and its adjacent land is owned by an array of public and private entities. This includes ownership by city, county, and federal agencies as well as organizations, individuals, and businesses.

Figure 1 – 19: *Example of complex ownership along the Los Angeles City portion of the LA River.*



Credit: Copyright © City of Los Angeles, 2007 Los Angeles River Revitalization Master Plan

Easements and Maintenance

The LA River is governed not only by ownership rights, but also by easements and their corresponding regulations. There are a number of rights-of-way along the LA River including easements for flood control, transportation, and utility maintenance. Property owners must adhere to the restrictions and/or requirements outlined in the properties' corresponding easement documents.

The U.S. Army Corps of Engineers (USACE) and the Los Angeles County Flood Control District (LACFCD) are responsible for the operation and maintenance of portions of the LA River, depending on when each stretch was channelized.[9] The agencies must ensure safety and serviceability of the area to prevent, prepare, and respond to flooding. The USACE and the LACFCD maintain the LA River by managing debris, weeds, and vegetation; repair of damage caused by erosion, storm runoff, and other forces; repair of concrete; rodent control; roadway maintenance access; landscaping; etc.

The USACE was authorized in 1941 to construct and operate major flood control facilities along the LA River after the passage of the Flood Control Act of 1936. Typically, USACE passes along these maintenance duties to local jurisdictions, like the LACFD. However, in the case of the LA River the USACE shares responsibility for maintenance with the LACFD.

The USACE is generally associated with building dams, canals, and other flood protection infrastructure. They are also involved in a wide range of public works projects, specifically providing outdoor recreation opportunities for the public.

The LA County Department of Public Works (Public Works), which in effect houses LACFCD, also has responsibility for the LA River. In 1984, LACFCD transferred its planning and operational responsibilities to the County's Department of Public Works, which constructs and operates county roads and sewerage systems, ensures building safety, and manages flood control. Public Works is responsible for the entire County (except for portions of the Antelope Valley and Catalina Island) and maintains the District's reaches of the LA River.

Permits

The permitting process for any project along the LA River is lengthy and complex. Projects that modify the river or immediately adjacent land must submit a permit to either Public Works or the USACE depending on where the project is located (permits are administered through the agency that maintains the reach on which a project is located). Permits are typically granted if the proposed project does not alter the capacity of the channel or impede the efforts by the USACE and County to ensure flood protection.

Los Angeles County Flood Control District Permitting

For projects in a Flood Control District-maintained reach, proponents should first contact the LA County Department of Public Works Watershed Management Division.[10] Each project will be assigned a liaison to help shepherd the project through the development and permitting processes. If a project will impact USACE infrastructure, the liaison will help project leads obtain a Section 408 Permit and any

[9] City of Los Angeles Department of Public Works Bureau of Engineering (2007) Los Angeles River Revitalization Master Plan. LA River Management chapter. http://boe.lacity.org/laRiverrmp/CommunityOutreach/pdf/10_Chapter_9_LA River_Managament_050107.pdf.

[10] Project proponents can call 626-458-4300 to reach the Watershed Management Division. A project liaison for either the upper or lower Los Angeles River, depending on where the proposed project is located, will be assigned to the project.

other permits required by USACE. Public Works recommends project leaders approach them early in the development process, even before seeking funding.

Before contacting Public Works, project proponents should:

- Identify general project goals,
- Create a visualization of the proposed project (a simple sketch is sufficient),
- Draft a concept plan for the project, and
- Review the County's Los Angeles River Master Plan, especially the Design Guidelines and Maintenance sections.

The permit process can be expensive and typically takes four to six months. Therefore, project leads should plan accordingly.

U.S. Army Corps of Engineers Permitting

Projects located on land maintained by USACE will go through its own permitting process. However, additional permits from the County may be needed if the project impacts a side drain that connects with other Flood Control drains.

It is recommended that project leads also contact USACE early in their development process. The USACE can provide information on what permits will be needed and how to obtain them. Generally, if projects impact the LA River's channel, one or two USACE permits will be needed. Regulatory permits (governed under the statutory authority of sections from three different pieces of legislation: The Rivers and Harbors Act, the Clean Water Act, and the Sanctuaries Act) are required for work in, over, or under the river; bridge construction; and the discharge of fill material into the river. The latter includes any type of material that is deposited into the channel temporarily or permanently during project implementation. After project leaders submit a regulatory permit application, the USACE will provide guidance on next steps or project modifications required before the permit can be approved.

A section 408 engineering permit is required for projects that modify, alter, or occupy an existing USACE-constructed public works project, such as the LA River's concrete channel. Once project proponents submit a written request for a 408 permit, the USACE will approve it if the proposed alteration is deemed not injurious to the public, will not impair the usefulness of the project, and is not in conflict with any known laws and/or regulations.[11]

Complex and Continually Evolving Processes

For projects on land next to the LA River, additional permits are administered through the appropriate city agency. Some cities, such as Los Angeles, have multiple permitting departments for projects within their jurisdiction.[12]

The permit process has changed dramatically over time, especially for Public Works- and USACE-maintained land. While this document

[11] For more information, visit: http://www.usace.army.mil/Missions/CivilWorks.aspx

[12] To streamline the permitting process for applicants within the City of Los Angeles, proponents are encouraged to submit their plans to the Los Angeles River Cooperation Committee. This Committee is a joint working group of the County and City of Los Angeles, with the USACE serving in an advisory capacity. They meet at least twice per year to share information, evaluate and make recommendations about proposed projects along the LA River. Project proponents can present project ideas to the committee and receive feedback regarding permitting and other issues.

intends to provide the best information possible, processes may change again in the future. Project proponents should remain flexible and investigate the most up-to-date permit processes early within project development.

Figure 1 – 20: *The Aliso Creek's confluence with the LA River is a complex layout of channel structures and associated regulatory conditions.*

Credit: Andrew Pasillas

ABOUT THIS GUIDE

Purpose and Scope

This Guide walks readers through key project steps by documenting specific LA River greenway projects and how they were developed by community-based organizations and government agencies. It is an application-oriented guidance document to reduce uncertainty and lower the barrier-to-entry for future greenway projects driven by community leaders, nonprofit organizations, and local governments. We present techniques to navigate through a challenging urban planning environment by distilling past development experiences into practical and applicable lessons for future community-driven projects. By analyzing the project planning process, we present common project obstacles and potential solutions.

The 14 stories in this Guide are of completed projects and current projects far enough along to enable retrospective analysis. The stories are meant to inform and support future efforts to complete the LA River greenway.

While this documentary-style Guide is focused on the project level, we recognize the challenge of continuing to operate on a project-by-project basis as it can perpetuate a piecemeal approach to LA River revitalization. We share the hope of LA River revitalization leaders that efforts will continue to become ever more transformative and integrative over time. This Guide complements and supports bigger LA River visioning efforts, integrative plans, comprehensive projects, and active programming. Visions, policies, and plans are critical foundations to advance and support change along the LA River.

We also recognize that the work does not end at the ribbon cutting ceremony for a newly built project. Community events, educational experiences, and other types of programming bring people to the LA River. Programming can ensure that the LA River greenway is actively used as a community asset.

Another important point about the scope of this document: we focus on LA River-adjacent spaces, not the LA River itself. Yet as mentioned earlier, projects within the LA River channel are important for the success of projects adjacent to the LA River and vice versa: projects along the greenway can impact the LA River itself. Current efforts to bring nature back to the LA River are critical to supporting goals to bring people to the LA River. To illustrate, who would prefer to be on a bike path with concrete storm drains and no vegetation or wildlife rather than views of a vibrant wetland ecosystem?

Organizing this Guide by four project archetypes provides a helpful, logical structure for readers to navigate. However, this organization requires a simplification of projects that include a combination of improvements, rather than merely one greenway feature. It is important that LA River projects integrate a multitude of features, including access points, parks, pathways, and bridges, as part of a comprehensive greenway network that will provide a wide range of community benefits.

Finally, an important point about the term "greenway." It is commonly used to describe the area adjacent to the LA River envisioned as an active transportation and recreational corridor—the LA region's version of a linear Central Park. Yet unlike New York City, the LA River greenway exists in a much more arid climate. Adding vegetation along the river requires climate-appropriate planting decisions. As a result, we are seeing more use of native plants and trees and other ways to minimize or eliminate irrigation.

Figure 1 – 21: *A native landscape greets visitors at Marsh Park. Amenities in the park and along the bike path invite users to play and/or relax.*

Credit: Andrew Pasillas

Organization and Methodology

The Guide is organized by project type into the following four chapters:

Chapter 2: Community Access to the Los Angeles River

Chapter 3: Parks along the Los Angeles River

Chapter 4: Pathways along the Los Angeles River

Chapter 5: Bridges across the Los Angeles River

Chapter 2 features projects that created or improved safe community access to the LA River. These projects provide entry to areas that would otherwise be closed off or hidden to the public and thus segregate communities, dissect transportation networks, and impede wildlife. The access points highlighted include entryways (e.g. gates, stairs, ramps) and visual markers (e.g. signage, public art), and other inviting features to help people safely find their way towards, along, across, and away from the LA River and its amenities.

Chapter 3 highlights LA River-adjacent parks ranging in size from small, community-based pocket parks to large, regionally significant parks with multiple amenities such as playgrounds, sports fields, picnic areas, educational facilities, and nature trails. Some projects include native habitat, best management practices for storm water management, and other ecological and environmental improvements. One project, Maywood LA Riverfront Park, is an example of how to remediate former industrial sites to create a safe public park in a severely park-poor, underserved community.

Chapter 4 features linear pathways and trails along both sides of the LA River for pedestrians, cyclists, equestrians, and those with limited mobility. Complete pathway projects include adjacent greenway space with landscaped mini-parks, native habitat, meandering nature trails, and amenities, such as pleasant places to sit. Linear pathways serve as the backbone of the greenway allowing commuters and recreationalists to access the LA River, parks, and bridges over the river channel.

Chapter 5 focuses on bridges across the LA River and its tributaries specifically for pedestrians, cyclists, and equestrians. Some cross the main channel, connecting communities on either side of the LA River, while others pass over a tributary that flows into the main channel, thus providing continuous movement on one side of the river. Bridges can improve mobility between historically disconnected neighborhoods and be landmarks strengthening community identity and pride.

Each chapter begins with definitions, context, and the distinguishing elements of each project featured. We then present the case studies using the following sections: origins, goals, and timeline; project proponents and community collaborators; site selection and design; cost and funding; permitting and use agreements; as well as operations and maintenance. This is followed by a guidance section highlighting specific lessons learned and solutions for overcoming common development challenges. We end each chapter with a list of references that informed the case studies and resources that may be helpful to readers interested in learning more about greenway development. We also acknowledge the project proponents who generously contributed their time and expertise to inform an accurate portrayal of projects.

Given the interconnected nature of the four main types of greenway features in this Guide, many projects represent a combination of improvements. For example, a park may include a new pathway and improve access to the LA River. In those case studies, we highlight their comprehensive features when describing project proponent's key design considerations. Additionally, some projects featured are just one component of a larger, multi-phase or multi-segment development effort.

While the 14 case studies featured do not represent all LA River greenway projects, three to four were selected for each chapter to represent a diverse range of proponents, collaborators, project sizes, budgets, and design approaches. In addition to collective diversity,

another criterion for selecting case study projects was the availability of information. Some greenway projects were developed so long ago or in such informal ways that finding project leaders—who may have moved, changed jobs, or retired— proved to be an impossible task. As a result, this document tends to feature relatively large and more recent projects. Another reason we emphasize more contemporary projects is because over the years, greenway projects have become more innovative, comprehensive, and complete.

These stories have never been told, at least not in a format that distills key steps and lessons learned. To collect information about each project, UCLA researchers used a combination of primary and secondary sources. As such, researchers conducted two dozen interviews with project leaders, visited numerous sites, and collected countless project documents through extensive on-line searches and in-person meetings. These documents included budgets, preliminary designs, meeting notes, presentations, maps, community outreach materials, workshop minutes, and more. Experts involved in each project's development reviewed draft text for accuracy.

In August 2015, the UCLA Luskin Center organized a Lower LA River Workshop. Co-hosted with the Watershed Conservation Authority and a myriad of partners, the event brought together over 100 community members and organizations interested in the greening and public space development along the lower LA River. We introduced the concept for this Guide and through an interactive group activity, participants mapped out where they would like to see improvements to the LA River greenway. They also recorded how the Guide could be most useful to them. All of the considerations covered in the guidance section of each of the four chapters are specific considerations that the public requested. The UCLA Luskin Center also plans to hold future workshops to share this Guide and to provide support on its use.

We hope to empower river-adjacent communities to take LA River revitalization into their own hands. Through strategic partnerships, community engagement, and by using the best practices presented here, what may at first seem like a daunting project, may end up successfully realizing accessible, healthy recreation and active transportation opportunities for underserved communities along the LA River.

Figure 1 – 22: *The Los Angeles Riverfront Park in Sherman Oaks overcame significant planning and development challenges, ultimately beautifying the neighborhood and enhancing the local ecosystem.*

Credit: Andrew Pasillas

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- Maria Camacho, Director of External Affairs

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- Johnathan Perisho, Project Manager

Chapter 2

ACCESS to the Los Angeles River

INTRODUCTION

Definition and Benefits

Historically, access to much of the Los Angeles River (LA River) has been blocked by chain-link fences, unwelcoming signage, trash, and other signs of neglect. This divides communities, disrupts transportation networks, and impedes wildlife. While some areas along the LA River are technically accessible, they are often hidden from public view or unsafe. This chapter focuses on physical markers, entryways, visual cues, or other greenway elements to help people safely find their way towards, along, across, and away from the LA River and its amenities. Examples of ways to access the LA River (access points) include LA River gates, street ends, stairs, ramps, bridges, and pocket parks (small-scale parks developed on small or irregular pieces of land).

New and existing LA River revitalization projects often include the development of access points in conjunction with other features and amenities, like parks and pathways. Organizing this Guide by four project archetypes provides a logical structure for readers to navigate. However, we recognize that this organization requires a simplification of projects that include a combination of improvements rather than merely one type of feature. Access points are one part of a complete and comprehensive river greenway. We also recognize that a project-by-project approach to river revitalization can sometimes feel piecemeal. Our aim is to accurately document what has happened in the past to help inform and inspire future efforts that over time may become ever more transformative and comprehensive.

Figure 2 – 1: *Example of restricted LA River access on the West Bank in South Gate.*

Credit: Henry McCann

Figure 2 – 2: *Restricted LA River access on the north bank at Wilbur Avenue in Reseda*

Credit: Andrew Pasillas

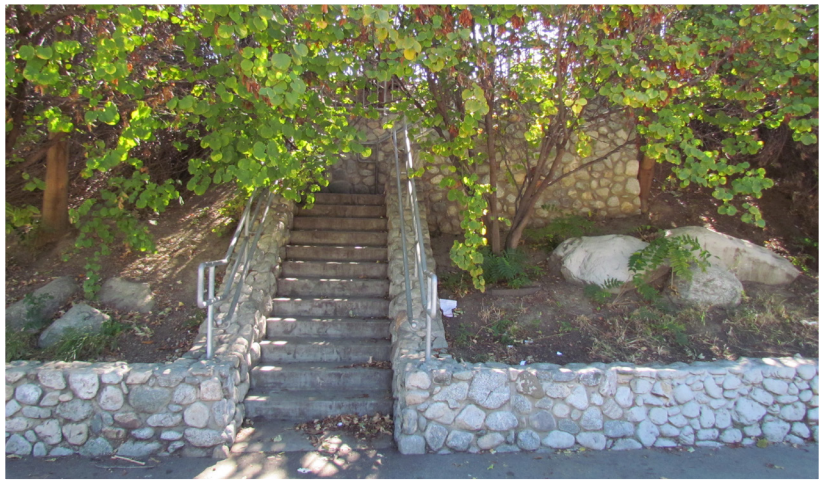
Figure 2 – 3: *Decorative LA River gates, such as the one at Maywood Riverfront Park, serve as public art and provide visual cues for access to the LA River.*

Credit: Henry McCann

Figure 2 – 4: *River gates that can easily lock, such as this gate located at the Headwaters near Canoga Park neighborhood, function to protect visitors during storms.*

Credit: Andrew Pasillas

Figure 2 – 5: *Stairs leading to the LA River's bank are common points of access when neighborhood streets are higher in elevation. This staircase is on the Los Angeles River Greenway Trail on the south bank between Whitsett Avenue and Laurel Canyon Boulevard.*



Credit: Andrew Pasillas

Figure 2 – 6: *Pocket Parks, such as the Sunnynook River Park on the west bank of the LA River, are functional and aesthetic greenway elements that effectively serve as access points.*

Credit: Jimmy Tran

Figure 2 – 7: *Physical markers such as this sign at the North Valleyheart Riverwalk in Studio City make clear the point of entry and access to and from the LA River.*

Credit: Jimmy Tran

Access to the LA River benefits people in many ways including:

- Mobility: Easy, obvious access to the LA River and its amenities allows pedestrians, bicyclists, and equestrians to move effectively and efficiently within and along the greenway. Neighborhood access points are doorways to the LA River, allowing entry and exit. They also connect people to street networks, public transportation, green open spaces, and community destinations.
- Safety: Secure access points bring people to the LA River. They increase user traffic, awareness and the number of "eyes on the greenway". This can help to deter crime and illicit activity. Identifiable and closable gates can also protect visitors during storms and flooding events.
- Aesthetics: Well designed, landscaped, and attractive access points draw people to use the LA River greenway and its amenities (e.g., bike path, park, etc.).
- Economic and Social Benefits: LA River access points allow for easy connections to and from shopping districts, schools, parks, and other social and economic centers on both banks of the waterway. Increased accessibility to and from the LA River greenway boosts the likelihood of social and economic exchanges. For example, the LA River bisects residential and shopping districts in Studio City, Van Nuys, and Sherman Oaks.
- Environmental Benefits: Access projects that incorporate native or drought-tolerant landscaping and storm water capture strategies can protect the LA River greenway from debris and contaminants as well as reduce the need for extensive irrigation and water use.

Importance: Current Conditions along the Los Angeles River

In the last two decades, many LA River access points, especially for bike paths along the lower half of the LA River, were completed by the Los Angeles County Department of Public Works. These access points provide important connections along the greenway. Access to the LA River at street ends and pocket parks are signature examples of access points in the upper half of the LA River. However, there are still many opportunities on both banks (upper and lower) to increase access to the LA River and to improve and maintain existing access points. The LA River is still marked by street ends with unattractive chain-link fences that do not have clear signs to mark directions and lack landscaping.

Current Plans

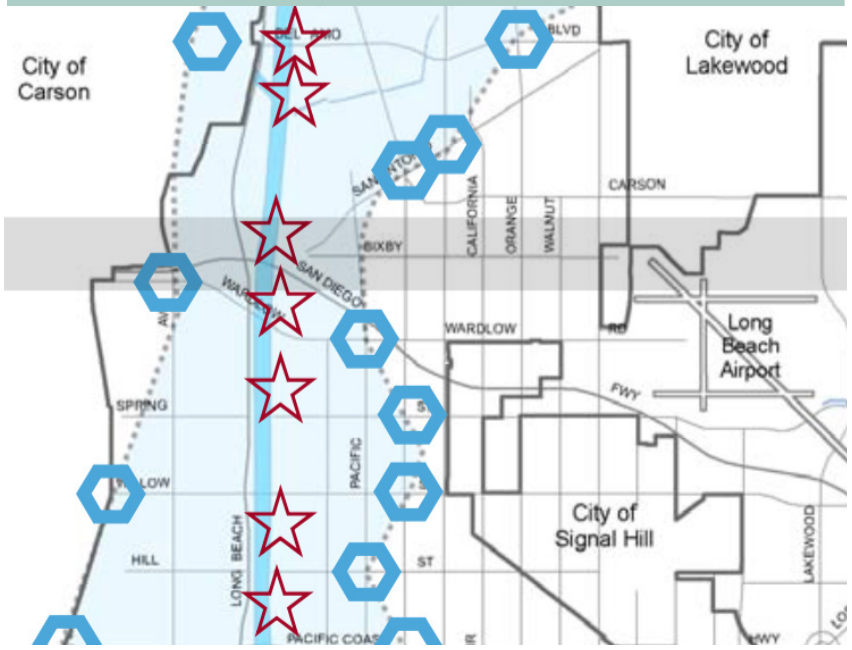
There are relatively few guidelines regarding access point development due to their broad classification in the County of Los Angeles's Los Angeles River Master Plan (LARMP), the City of Los Angeles's Los Angeles River Revitalization Master Plan (LARRMP), and the City of Long Beach's RiverLink plan. In addition, there is no universal definition of an access point. In general, increasing public access to the LA River is a common goal for LA River projects, but specific recommendations on how to create or improve access varies.

The County's plan sets guidelines for landscaping, signage, gates, and fences along the LA River, which helps to improve the form, function, and safety of access points.

The City of LA's plan does not define access points but states that providing safe access to the LA River should be a goal of river revitalization efforts. The plan makes recommendations for green street enhancements, gateways, and the use of public art at access points to enhance local identity and connect neighborhoods to the LA River.

Long Beach's RiverLink plan defines access points or gateways as "points where a visitor begins the journey along a pathway towards a connection or destination" (Long Beach RiverLink, p. 19).

Figure 2 – 8: *Long Beach's RiverLink plan proposal for access points along the LA River (shown as hexagons).*



Credit: Long Beach RiverLink

Moving from Planning to Project Implementation: Learning from Case Studies

This chapter profiles projects that provide effective access to and from the LA River. Each differs in scale and location and together represent a diverse range of LA River access types. Some of them improve access points while others create new ones. Many access points, including the selected examples, were completed by agencies and organizations working collaboratively. These projects were often a component of larger river revitalization efforts. Most LA River projects currently in development, such as the Los Angeles Riverfront Park and the Zev Yaroslavsky L.A. River Greenway Trail (featured in Chapter 4: Pathways) involve creating or improving multiple access points.

First, this chapter will introduce Duck Park as an abridged example of a small budget project with a big impact in the Elysian Valley. The remaining three case studies are examples of larger projects and are explained in more detail. We examine each project's origins, goals, and timeline; project proponents and community collaborators; site selection and design; cost and funding; permitting and use agreements; as well as operations and maintenance. This chapter ends with guidance for pursuing similar projects, summarizing best practices and lessons learned from the case studies. A summary of the defining elements of each project is shown below:

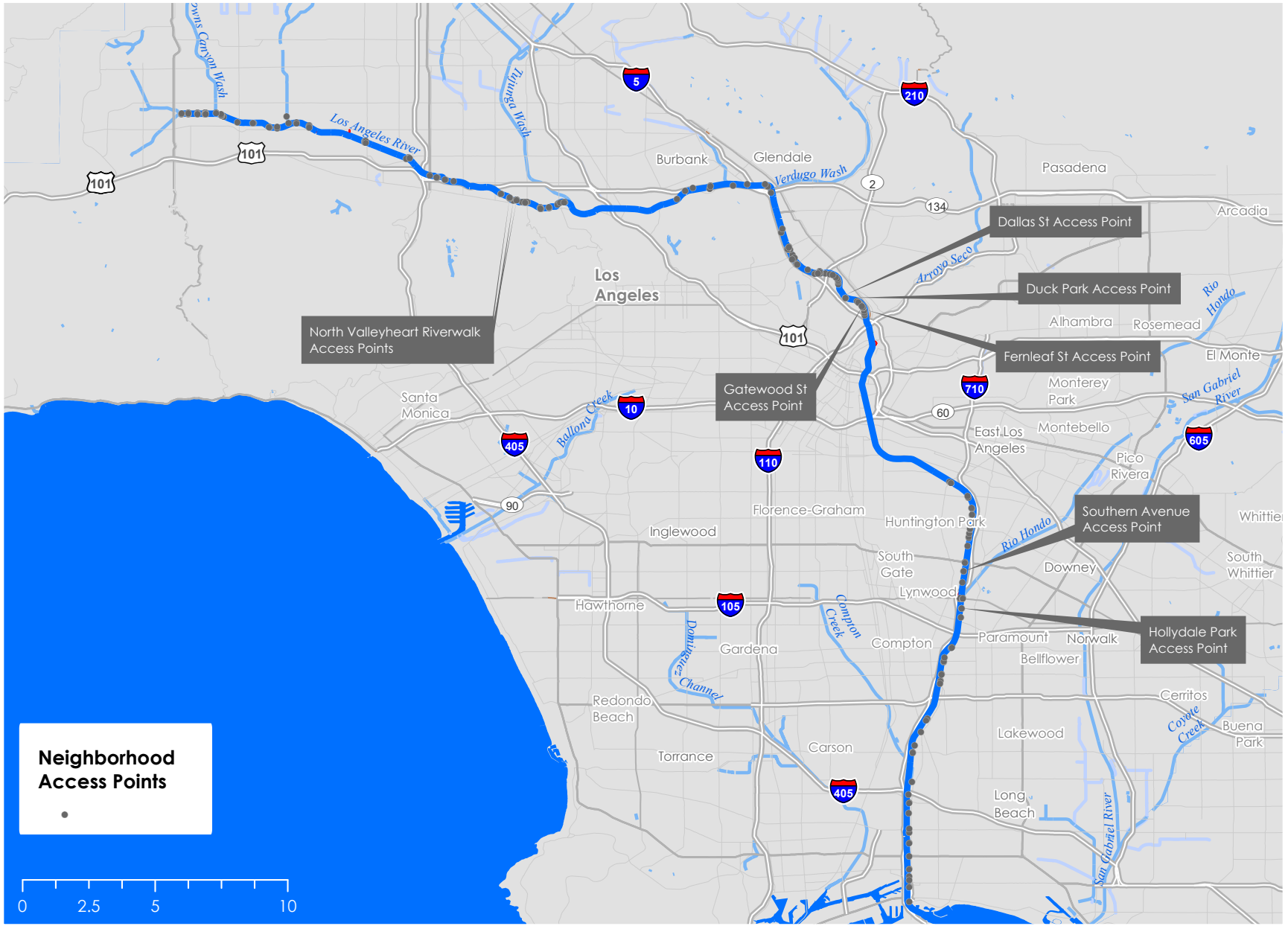
Table 2 – 1: Creating Access through Duck Park	
Location:	City of Los Angeles, Elysian Valley neighborhood
Form and Scale:	Converted unsightly neighborhood street end into a pleasant pocket park (less than 0.1 acres) with native habitat
Key Benefits:	Provides access to nature and a scenic resting stop, with regular sightings of ducks swimming in the LA River
Keywords:	Low-budget, small-scale
Lead Proponents:	North East Trees and the Mountains and Recreation Conservation Authority
Completed:	2004

Table 2 – 2: Creating Access along North Valleyheart Riverwalk	
Location:	City of Los Angeles, Studio City neighborhood: between Fulton and Coldwater Canyon Avenues
Form and Scale:	Transformed a half-mile restricted access maintenance pathway into a publicly accessible recreational trail and access point to the LA River
Key Benefits:	Provides access to the LA River for all by including ramps for those with limited mobility
Keywords:	Community, volunteer and artist driven project; compliant with the Americans with Disability Act; complete with native landscaping, public art, and recreational and educational opportunities
Lead Proponents:	Village Gardeners of the Los Angeles River and Los Angeles County Flood Control District
Completed:	2014

Table 2 - 3: Improving Access in South Gate	
Location:	City of South Gate: Hollydale Park and Southern Avenue
Form and Scale:	Improved access to the LA River from Hollydale Park and from an industrial street end on Southern Avenue
Key Benefits:	Provides access for pedestrians, bicyclists, and equestrians; added restroom access along the LA River
Keywords:	Enhanced use of an existing park; artistic butterfly gates; restroom renovations
Lead Proponents:	City of South Gate and San Gabriel and Lower Los Angeles River Mountains and Rivers Conservancy
Completed:	2008

Table 2 - 4: Connecting Street Ends to the Elysian Valley Bikeway	
Location:	City of Los Angeles, Elysian Valley neighborhood: Gatewood, Fernleaf, and Dallas Streets
Form and Scale:	New and enhanced access to the LA River and bike path at three neighborhood street ends
Key Benefits:	Provides improved community access and storm water management
Keywords:	Storm water best management practices; Green Streets Standards
Lead Proponents:	Mountains and Recreation Conservation Authority and City of Los Angeles
Completed:	2014

Figure 2 – 9: *Neighborhood access points along the LA River, labeling those featured in this chapter.*



Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

SMALL PROJECT BIG IMPACT

CREATING ACCESS THROUGH DUCK PARK

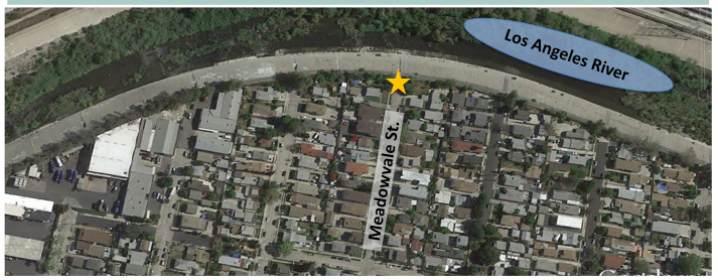
In the Elysian Valley, a quiet pocket park known as Duck Park is located along the west bank of the Los Angeles River at the end of Meadowvale Street. The park serves as a rest stop and an important connection for the surrounding neighborhood to the LA River. It is located along the 2.5-mile Elysian Valley Bikeway, starting at Fletcher Drive and terminating at Egret Park by Interstate 5.

Various shades of green are visible beyond the gate at the street end. From the neighborhood, visitors are guided alongside native plants, past a shaded bench, down decorative stone steps, and to the edge of the Elysian Valley Bikeway. Beyond the path is an iconic view of the LA River, which includes plants, flowing water, a soft-earthen river bottom, and different types of birds. The pocket park was designed and constructed by North East Trees, a nonprofit with a history of transforming dead ends into pleasant green spaces. Duck Park is a model for LA River projects that seek to provide small but meaningful access to the river.

Figure 2 - 10: *View of Duck Park from Meadowvale Street.*

Credit: North East Trees

Figure 2 - 11: *Duck Park's location along the Elysian Valley Bikeway.*



Credit: Jimmy Tran

Figure 2 - 12: *Looking at the LA River and its bike path from the decorative stone steps to Duck Park.*

Credit: Andrew Pasillas

Figure 2 - 13: *View of duck from the pocket park.*

Credit: Jimmy Tran

Figure 2 - 14: *Informal access point to the bike path along the LA River at the Meadowvale Street end before Duck Park's construction.*

Credit: North East Trees

Why Duck Park Matters

Through revitalization of the LA River, a series of stories has emerged documenting the unwavering commitment of local communities, organizations, and agencies to transform the flood control channel into a beautiful space usable by everyone. Duck Park's creation is one of these stories, beginning with the neighborhood's need to access the LA River and concluding with a beautiful pocket park at a street end. Duck Park gives visitors a glimpse of what the river was and will be in the future through its timeless design and connection to the network of LA River greenway projects.

Origins, Goals, Costs, and Funding

In the early 2000s, Elysian Valley residents saw the advent of LA River revitalization projects and wanted the benefits they witnessed from these projects brought to their neighborhood. Locals wanted safe and easy entrances and exits, but many streets on the LA River's west bank ended with chain-link fences.

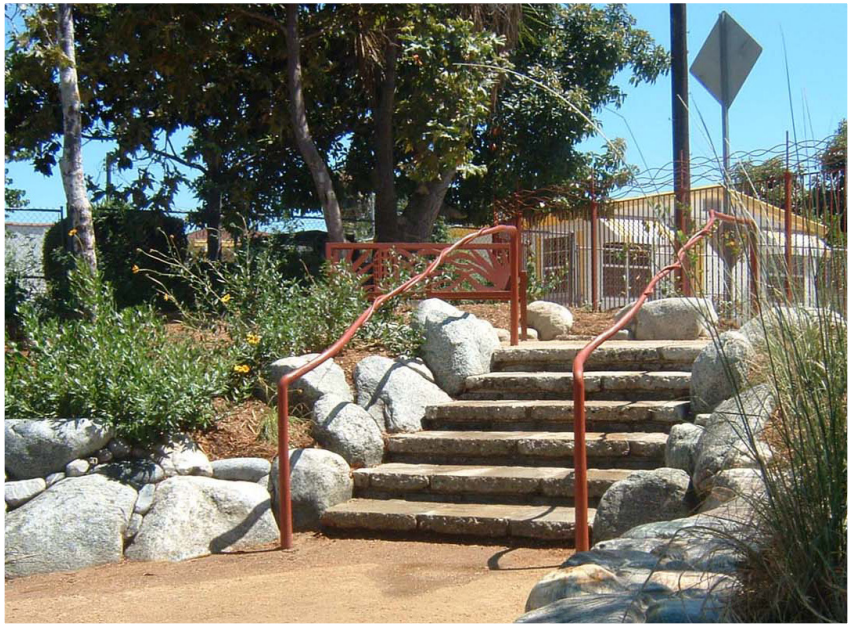
Like they had in the past, North East Trees and the Mountains Recreation and Conservation Authority (MRCA) collaborated to develop the LA River Bikeway Improvements Project, which sought to enhance access along the proposed bike path, restore native habitats, and create two new pocket parks (Duck Park and Crystal Street Bicycle Park in 2004 and 2005, respectively) with amenities such as bike racks, benches, and signage.

Project proponents engaged the community, created designs, obtained permits from the Los Angeles County Flood Control District, and managed the construction of Duck Park. Former Los

Angeles City Councilmember Eric Garcetti was a key advocate of the project, helping North East Trees reach stakeholders, seek feedback, and ensure continued support for LA River revitalization efforts.

The total cost for the improvements was $263,000, a relatively low budget for LA River projects of any scale. The Los Angeles County Regional Park and Open Space District provided $225,000 for the entire project, including Duck Park's administration, design and planning, construction, and community outreach. North East Trees contributed $38,000 for additional site amenities, materials, and volunteer labor.

Figure 2 - 15: *Iconic decorative stone steps leading to Duck Park.*



Credit: North East Trees

Designing Duck Park

The specific design goals of Duck Park were both aesthetic and functional in nature. Duck Park acts as both a park and an access point for the community adjacent to the LA River. The placement of rocks and boulders, the drought-tolerant plant palette, and the use of recycled materials for site amenities creates a green oasis—a North East Trees project trademark. The design of the river gate denotes wavy patterns to represent the river and encourage residents to explore the small park at the end of a neighborhood street.

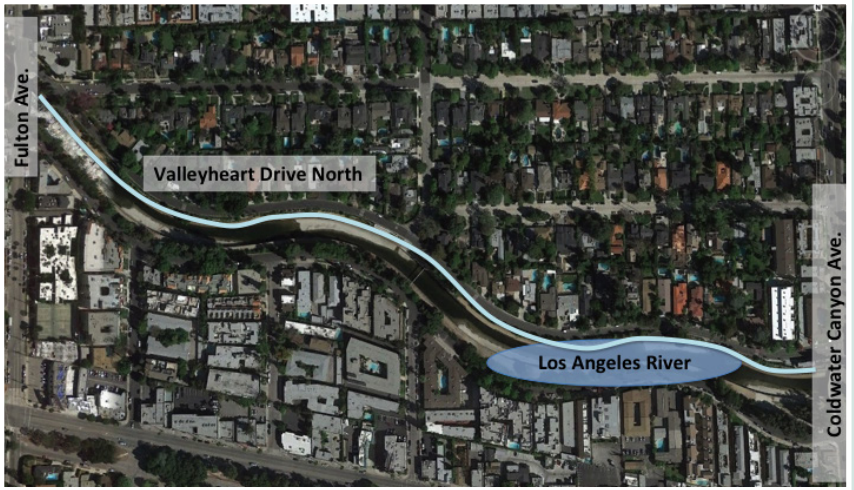
As a scenic resting stop, Duck Park draws people to the LA River not only from the adjacent neighborhood, but also from the street and both directions of the bike path. As bicyclists and pedestrians pass, they can sit, relax, and view the LA River under the shade of Sycamore trees. Visitors stepping off the paved bike path find a small trail that leads to the park's iconic stone steps. At the top of the stairs, a shaded bench awaits before the trail guides visitors towards the gate and back onto the neighborhood street.

The high visibility of the park helps promote a safe environment for all users. While Duck Park is small, it opens access to and from the LA River and bike path.

CASE STUDY #1
Creating Access Along North Valleyheart Riverwalk

A half-mile of revitalized greenway sits on the north bank of the Los Angeles River along North Valleyheart Drive in the City of Los Angeles's Studio City neighborhood. This recently completed project transformed a maintenance path with restricted access to a public recreational trail with improved fencing, native drought-tolerant landscaping, irrigation, and educational and interpretive signs. The project was the result of a partnership between the Los Angeles County Flood Control District (LACFCD) and the nonprofit organization Village Gardeners of the Los Angeles River (Village Gardeners). The North Valleyheart Riverwalk (Riverwalk) accomplishes many of the goals articulated in the Los Angeles County's Los Angeles River Master Plan: develop a continuous greenway along the LA River, improve water quality, provide recreational opportunities, restore natural habitat, and increase access to the LA River.

Figure 2 - 16: *Location of the Riverwalk (blue line) along the LA River.*



Credit: Jimmy Tran

Origins, Goals, and Timeline

Since 1998, the Village Gardeners have maintained a section of the LACFCD's property on both banks of the LA River through LA County's Adopt-A-Riverbank program.[1] In 2008, at an Earth Day event, the Village Gardeners were inspired to start a project to beautify the northern bank of their greenway, restore its natural habitat, and improve access to the LA River. The idea, named "North Valleyheart Riverwalk Project," was supported by local community members, neighborhood councils, and elected officials.

Figure 2 - 17: *View of the Riverwalk looking east from Fulton Avenue.*

Credit: Jimmy Tran

1 The County is currently revamping the Adopt-A-Riverbank program. As of the release of this report, the program was no longer active.

The Village Gardeners worked with the landscape architecture firm, Kathryn Cerra Associates, to design a river access point with "Steps to the Riverwalk"—a staircase covered with a decorative arbor structure that would lead to the River's bank.

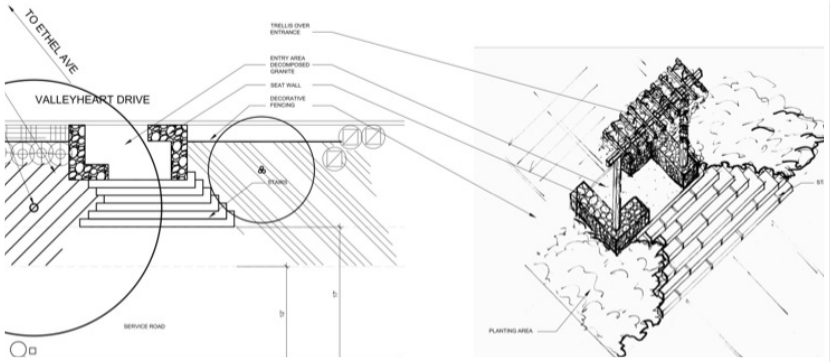
The County considered their design proposal, developed a Project Concept Report, and conducted several site visits to assess the feasibility and provide a conceptual overview of the Riverwalk's new features and amenities.

The Village Gardeners needed the County to support the project financially and authoritatively, as it was located on County land. The project was consistent with the goals of the Los Angeles River Master Plan to preserve, enhance, and restore environmental resources in and along the LA River and in 2011, the County voiced their support for the project and their intention to move forward.[2] Project management and development was tasked to LACFCD,[3] while the Village Gardeners provided design feedback and continued to engage the community. LACFCD proposed to extend the project scope to create a recreational trail, educational signage, and to provide pedestrian access at Fulton, Ethel, and Coldwater Canyon Avenues.

Figure 2 - 18: *Concept rendering for the Riverwalk.*

Credit: Kathryn Cerra Associates

Figure 2 - 19: *Design concept for the "Stairs to the Riverwalk."*



Credit: Kathryn Cerra Associates

2 LA County Letter of Support 2. (2008). Retrieved from http://bit.ly/1YDFTEK

3 LACFCD is housed within the Los Angeles County Department of Public Works but is governed as a separate entity by the County of Los Angeles Board of Supervisors. In 1984, LACFCD transferred planning and operational activities to the County of Los Angeles Department of Public Works. See the County's website (https://dpw.lacounty.gov/lacfcd/) for more information.

Table 2 - 5: Implementation timeline for the North Valleyheart Riverwalk Project	
Timeline	Date
Los Angeles County Department of Public Works holds Earth Day Event along the LA River, inspiring Village Gardeners to beautify the greenway between Fulton and Coldwater Canyon Avenues.	April 2008
Village Gardeners seek support from Studio City community groups and LA Council Districs for their "Valleyheart Riverwalk" proposal, which includes revitalizing both banks of the River.	Mid-2008
Village Gardeners present their proposal to the LA County Department of Public Works, which commits to support it.	Late-2008
The County develops a Project Concept Report and conducts several site visits to assess feasibility and to develop a conceptual overview of the Riverwalk's new features and amenities.	2009-2011
LA County Department of Public Works and LACFCD prioritize implementation of just the North Valleyheart Riverwalk as an LA River Master Plan Project.	2011
Project breaks ground on construction.	July 2013
Village Gardeners conduct community outreach to find and support local mural artist.	Late-2013
Construction is complete; installation of the Steelhead Trout Mural begins.	Winter 2013/2014
Pubilc Opening.	July 2014

Project Proponents and Community Collaborations

Village Gardeners of the Los Angeles River is an all-volunteer, nonprofit organization dedicated to maintaining, restoring, and beautifying the LA River between Fulton and Coldwater Canyon Avenues, in Studio City and Sherman Oaks. Their mission is to lead the community to enhance LA River greenway conservation, ecology, and restoration through partnerships with schools, community organizations, and government agencies. They foster a communal commitment to the rebirth of the LA River while respecting necessary regional flood control management.

LA County oversees the progress of LA River projects in accordance with the Los Angeles River Master Plan while planning and implementation is generally assigned to LACFCD. LACFCD's main goal is to provide flood protection, water conservation, and recreational enhancements.

Figure 2 - 20: *Village Gardeners sweeping street debris near the Riverwalk.*

Credit: Village Gardeners of the Los Angeles River

Table 2 - 6: Key stakeholders and their roles in the development of the North Valleyheart Riverwalk Project	
Stakeholder	Role
Village Gardeners of the Los Angeles River	Led organization, developed project goals and proposal , engages community, maintained project site
Los Angeles County Department of Public Works	Political support, oversight of project in accordance to Los Angeles River Master Plan
Los Angeles County Flood Control District	Funded and managed project implementation, including design, construction, project site maintenance
Los Angeles County 3rd Supervisorial District: ZEV Yaroslavsky	Provided political support and financial donations to create the Steelhead Trout Mural*
Studio City Residents Association	Provided political support and financial donations to create the Steelhead Trout Mural*
Sherman Oaks Neighborhood Council	Provided political support and financial donations to create the Steelhead Trout Mural*
Los Angeles City Council Districts 2 & 4	Provided political support and financial donations to create the Steelhead Trout Mural*

**This is not an exhaustive list of supporters; those highlighted were involved throughout the community engagement process.*

Translating LA River project plans into action requires the support of stakeholders—those who are impacted by the project. Before asking for County support, Village Gardeners did extensive outreach in Studio City and Sherman Oaks, attending numerous neighborhood council meetings and speaking with property owners along the north bank of the Riverwalk. The community was generally supportive. However, there were some concerns about how the project would affect their property, specifically their privacy. There were also worries about nuisances, such as skateboarding, graffiti, vandalism, noise, and trash. The Village Gardeners assured the community that their volunteers would quickly address any instances of vandalism or graffiti. Other concerns were lessened once the community saw the beauty, cleanliness, and inviting nature of the new Riverwalk.

In late 2013, before the completion of Riverwalk's construction, the Village Gardeners initiated a final round of outreach to local residents associations and council district offices regarding the addition of a mixed-media art mural. The Village Gardeners hoped to transform an unattractive concrete spillway into a beautiful mural depicting history from the LA River. After a bid was put out to the public, local artist Kevin Carman was selected to do the work pro bono. Materials for the mural's creation were paid for by donations from many groups, including former Councilmember LaBonge's Office, Councilmember Krekorian's Office, Los Angeles County Supervisor Zev Yaroslavsky's Office, and the Sherman Oaks Neighborhood Council.

Figure 2 - 21: *Rendering of North Valleyehart Riverwalk.*

Credit: Los Angeles Flood Control District

Figure 2 - 22: *View of the concrete ramp access to Riverwalk on Coldwater Canyon Avenue.*

Credit: Jimmy Tran

Figure 2 - 23: *Renovated slope with wooden steps along the Riverwalk.*

Credit: Jimmy Tran

Site Selection and Design

North Valleyheart Riverwalk is approximately half a mile along the north bank of the LA River, parallel to North Valleyheart Drive, between Fulton and Coldwater Canyon Avenues. The site was previously a restricted LACFCD maintenance path with no legal public access, but was still widely used by neighbors for recreation, such as jogging and dog walking. Surrounding land use consists of single and multi-family residences along North and South Valleyheart Drive.

The Riverwalk now features improved pedestrian access from Fulton, Ethel, and Coldwater Canyon Avenues; native landscaping; a multi-use trail; and hardscape improvements (e.g. retaining walls and in-wall seating). The Village Gardeners selected Ethel Avenue for pedestrian access to the river because it is approximately mid-way between the Fulton and Coldwater Canyon Avenue bridges, which also offer river access.

The design for the "Stairs to the Riverwalk" and entrances on Fulton and Coldwater Canyon Avenues incorporated Americans with Disabilities Act compliant ramps. The ramps were not part of the original design and were expensive, but were required by the County and increased the river's accessibility to those with disabilities. Building a pedestrian ramp on pylon structures from Coldwater Canyon Avenue was a significant challenge. Like many freeway on-ramps, specific guidelines restrict design and engineering options. While this and other issues delayed ramp construction, they did not delay the project timeline.

The project leads maximized the existing elements at the project site to create new and visually attractive access points. For example, LACFCD converted an existing sloped trail that led to the Riverwalk,

midway between Ethel and Coldwater Canyon Avenues, into a wooden stairway which was safer and more aesthetically pleasing than the previous slope. Because the City of Los Angeles plans to install a bike path and the associated amenities along the south bank of the LA River in the San Fernando Valley, bicycle facilities were not included in this project.

Once the Riverwalk was constructed, the Village Gardeners organized and coordinated donations for the addition of a mixed-media mural in the concrete spillway. The mural consisted of about 40,000 handpicked local stones to form a mosaic of a Steelhead trout—a symbol of the LA River.[4] This was not officially part of LACFCD's design, but the agency's openness and flexibility allowed it to become a highlight of the North Valleyheart Riverwalk.

Figure 2 - 24: *Steelhead Trout Mural by artist, Kevin Carmen.*

Credit: Jimmy Tran

Cost and Funding

The total cost of the North Valleyheart Riverwalk (not including the mural) was about $3,582,000. This included $2,230,000 for construction and $1,352,000 for planning, permitting, consultants, site visits, materials testing, inspections, and other County services. The costliest components of the project were the pedestrian ramps at Ethel and Coldwater Canyon Avenues because they were difficult to engineer due to the site's geology, proximity to the flood channel, and limited space. While the Riverwalk was expensive relative to other half-mile LA River greenway projects, it improves a significant lack of community access to the River and will link disconnected LA River greenways, which are currently in construction in the San Fernando Valley.

LACFCD applied for but did not receive funding under Proposition 84, The Safe Drinking Water, Water Quality or Supply, Flood Control, River and Coastal Protection Bond Act of 2006. In the end, the project was financed by LACFCD whose annual budget is approved by the LA County Board of Supervisors. The Village Gardeners raised money from community members, council district offices, and resident associations to cover the cost of materials for the mural. The artist donated his time.

4 Steelhead trout were one of many fish species that used to live in the Los Angeles River before it was converted into a concrete channel. See http://www.kcet.org/updaily/socal_focus/commentary/come-winter-the-steelhead-should.html

Permitting and Use Agreements

LACFCD owns the right-of-way along the bank of the project site and, therefore, no additional permits or agreements were required. The Village Gardeners already had a permit from the agency to maintain the Riverwalk.

Operation and Maintenance

There are three parties that are responsible for North Valleyheart Riverwalk operations and maintenance. An LACFCD landscape maintenance contractor maintains irrigation, plantings, and other large issues. LACFCD's Flood Maintenance Division oversees the contractor and handles large-scale problems, such as flooding. In addition, the Village Gardeners volunteers provide light pruning, litter removal, and daily maintenance.

LACFCD attributes successful maintenance of the site mainly to the Village Gardeners and their volunteers. The nonprofit relies on donations and the sale of advertising space along the Riverwalk to cover the cost of maintenance.

CASE STUDY #2
Improving Access in South Gate

The landscape surrounding the concrete Los Angeles River channel near the City of South Gate and many other Gateway Cities is characterized by industrialized complexes and utility corridors. In this area, along the LA River's southern or lower portion, access to the River is available, but is often in poor condition and hard to find.

In 2005, the City of South Gate collaborated with the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (Conservancy) to improve access on both banks of the LA River at Hollydale Park and at the end of Southern Avenue, an industrial corridor. The park is now an attractive place to stop along the river and Southern Avenue provides another route to South Gate Park, the City's largest park. The project not only connected the bike path along the LA River to the City of South Gate, but also increased public awareness of two underutilized areas.

Figure 2 - 25: *LA River access point at Southern Avenue.*

Credit: Paul Adams, South Gate Park Director

Figure 2 - 26: *Location of LA River (LAR) access points in South Gate.*

Credit: Marybeth Vegara, Rivers and Mountains Conservancy

Figure 2 - 27: *LA River access point at Hollydale park.*

Credit: Paul Adams, South Gate Park Director

Origins, Goals, and Timeline

One of the Conservancy's goals is to enhance community access to the bike path along the LA River, particularly in the Gateway Cities region. By 2005, the group had improved or created multiple access points and connected river greenways in the San Gabriel Valley and lower LA River, but there were still neighborhoods without access. The Conservancy prioritized access in the underserved City of South Gate. Both the Conservancy and the City of South Gate share the vision of improved recreation along the LA River. Thus, they decided to work together. Southern Avenue and Hollydale Park lacked access to the river; equestrian users had even requested improvements for access at Hollydale Park years earlier. The Conservancy provided the necessary funding and outreach to develop the project, and the City led implementation.

Table 2 - 7: Implementation timeline for improving access to the LA River in South Gate

Project Progress	Date
The Conservancy reaches out to Gateway Cities Council of Government to identify cities in need of access o the LA River and potential project sites.	May/June 2005
The Conservancy, City staff, and elected officials visit potential project sites.	Mid 2005
The Conservancy authorizes $250,00 to South Gate for the project.	October 2005
South Gate posts a Notice for Project Bids.	April 2007
South Gate posts a Notice to Proceed with Construction.	June 2007
The Conservancy authorizes an additional grant of $215,000 for restroom renovation.	October 2007
South Gate posts a Notice of Construction Completion.	January 2008
Grand opening and ribbon cutting ceremony at Hollydale park.	January 2008

Project Proponents

The City of South Gate, located in southeast Los Angeles County, partnered with the Conservancy to enhance access to the bike path along the LA River. The City's Department of Parks and Recreation managed the different phases of development and coordinated with other City departments to address project design and long-term maintenance.

The Conservancy's mission, accomplished primarily by providing funding for other entities to implement projects, is to preserve open space and wildlife habitat in order to provide for low-impact recreation and educational uses, wildlife habitat restoration and protection, and watershed improvements within eastern LA County and western Orange County. For this project, the Conservancy identified key areas for improved access along the bike path, facilitated the funding process, and aided the City with project development and design.

Unlike more community-driven LA River projects, the need for river access at Southern Avenue street end and Hollydale Park were determined and championed by the Conservancy and the City of South Gate. The two entities believed the project would greatly benefit the community. The conceptual plans were presented at a public meeting hosted by the Board of Directors of the Conservancy and the City's Parks and Recreation Commission.

Site Selection and Design

In 2005, the Conservancy project managers, City staff, and elected officials visited potential project sites in the City of South Gate. The group identified Hollydale Park and two street ends (Southern Avenue and Tweedy Boulevard) as needing the most attention. While all three sites already provided access to the LA River and the bike path, they were difficult to find and needed renovations. If people knew that there was access to the LA River from Hollydale Park and/or Southern Avenue, they were greeted with an old, graffiti-covered rod iron gate that was not consistently open nor in good condition. While the park did have some recreational facilities such as a baseball field, picnic areas, playgrounds, and an equestrian center, it was in need of rehabilitation.

Figure 2 - 28: *Northwestern entrance to Hollydale Park from the LA River bike path leading to the equestrian arena.*

Credit: Henry McCann

Figure 2 - 29: *Southwestern entrance to Hollydale Park leading to recreation facilties.*

Credit: Henry McCann

Ultimately, project proponents prioritized the Park and Southern Avenue for development, including attractive LA River gates that would draw attention from people in the area. It was especially difficult to draw attention to Southern Avenue because it is an industrial corridor with little foot traffic.

The original concepts for Hollydale Park and Southern Avenue included decorative gates, interpretative signage, native landscaping, bicycle racks, and water fountains. The concepts for the park also included restroom renovations, a shaded picnic area, and equestrian improvements. However, numerous budget and land acquisition challenges limited the final improvements that could be made. The Los Angeles County Flood Control District (LACFCD) has strict standards on what can be built near the bike path and concluded that the site was not wide enough to add native landscaping, signage, or water fountains. The plan for the native landscaping and related interpretative signage at Southern Avenue also had to be removed from the project scope.

Figure 2 - 30: *Decorative gates with butterfly designs at Southern Avenue.*

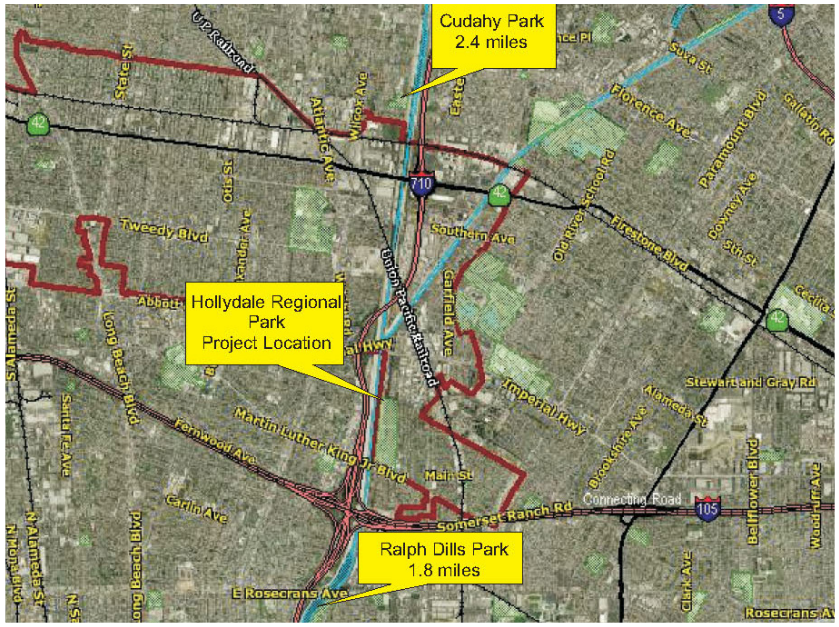
Credit: Paul Adams, South Gate Park Director

Figure 2 - 31: *Decorative gates with butterfly designs at Hollydale Park.*

Credit: Paul Adams, South Gate Park Director

Table 2 - 8: Final design features to improve access to the River in South Gate
Southern Avenue
Butterfly and leaf-themed gate
Bike rack
Hollydale Park
Butterfly and leaf-themed gate
LA River/Conservancy signage
Renovated restrooms
Improved pedestrian and equestrian ramps leading to the restrooms from the equestrian paths
Native landscaping with shaded structure and picnic tables
Drinking fountain

Figure 2 - 32: *Distance between project site and nearest public restrooms along the LA River in South Gate.*



Credit: Marybeth Vegara, Rivers and Mountains Conservancy

Cost and Funding

In October 2005, upon their staff's recommendation, the Conservancy's Board of Directors authorized a grant of $250,000 to the City of South Gate for the improvements at Southern Avenue and Hollydale Park. The money came from Proposition 40 (California Clean Water, Clean Air, Safe Neighborhood Parks and Coastal Protection Act of 2002) and Proposition 50 (California Water Security, Clean Drinking Water, Coastal and Beach Protection Act of 2002). The project budget included construction documents, project management, access point amenities, grading, irrigation, and the removal of existing structures. Renovating restroom facilities at Hollydale Park was not included in the budget due to its costliness. However, the restroom renovations were kept in the project design so the City could identify additional funds for its construction.

By June 2007, the City was not able to obtain funding for the restrooms and requested their $250,000 Conservancy grant be increased by $215,000 for the renovations. With the current Hollydale restrooms out of service and in bad condition, the closest bathroom along the bike path was 2.4 miles north at Cudahy Park. The Conservancy Board approved the request and allocated the additional money under Proposition 50. The total cost of the access improvements in South Gate was $465,000.

Permitting and Use Agreements

No permits or use agreements were required because Southern Avenue and Hollydale Park are both City of South Gate properties. The original project proposal for the Southern Avenue street end would have required a land acquisition, but project proponents decided not to move forward with the amenities proposed on that piece of land due to time and funding constraints.

Operation and Maintenance

The City's Department of Parks and Recreation and Department of Public Works maintain Hollydale Park and Southern Avenue, respectively. While grounds workers already inspected and responded to daily issues in the park, increased visibility of access to the LA River, bike path, and amenities increased use and the need for maintenance. For example, instances of vandalism and graffiti are now more likely to occur and to be reported due to increased foot traffic and public attention to the area. Maintenance of the Southern Avenue access remains challenging because Public Works inspects the area less frequently: maintenance depends on requests from local businesses which are infrequent. While residents tend to be vocal about maintenance concerns, businesses often do not realize they have a role to play in reporting issues. To help address the minimal residential visibility of the LA River at Southern Avenue, the two City departments hosted informal conversations with nearby businesses to encourage them to notify the City of any illicit activities.

Figure 2 - 33: *Renovated restroom facilities.*

Credit: Paul Adams, South Gate Park Director

CASE STUDY #3
Connecting Street Ends to the Elysian Valley Bikeway

There is a sentiment of pride in the Elysian Valley along the Los Angeles River. Local communities, organizations, and government agencies have revitalized much of the greenway with welcoming pocket parks, decorative gates, pedestrian bridges, and native landscaping. However, numerous streets still dead end at the River without providing community access to it.

To address this issue, in 2008, the Mountains Recreation Conservation Authority (MRCA) partnered with the City of Los Angeles to develop and implement the Elysian Valley Bikeway Project to provide safe access to the LA River and bike path as well as plant native vegetation and improve water quality at three sites. Gatewood, Fernleaf, and Dallas Streets which previously dead-ended at the river now provide access to it and the 2.5-mile bike path along the west bank, starting at Fletcher Drive and Interstate 110 and terminating at Egret Park by Interstate 5.

Origins, Goals, and Timeline

In 2008, with the planned completion of the City of Los Angeles Department of Transportation's 2.5-mile LA River bike path (also known as the Elysian Valley Bikeway) within two years, the City wanted to complement this new greenway by creating additional places with native landscaping and water treatment improvements to safely access the LA River. They partnered with MRCA, which had the resources and experience to create development plans aligned with the City's 2007 Los Angeles River Revitalization Master Plan (LARRMP) and Los Angeles County's 1996 LA River Master Plan (LARMP).

Table 2 - 9: Implementation timeline to develop the Elysian Valley Bikeway Project

Timeline	Date
Project discussions and conception	2008
MRCA outreach to Elysian Valley neighborhood	2008-2011
Apply for grant funding	2009-2010
Develop Memorandum of Understanding	2011-2012
MRCA works with City to develop green streets standard compliance	2012-2014
Obtain Bureau of Engineering B-Permit for landscape improvement, storm drain changes, street widening, and grade changes	2012-2014
Project construction	2012-2014

Figure 2 - 34: *Site locations and planting notes for street end improvements along the Elysian Valley Bikeway.*

Los Angeles River Greenway — Elysian Valley Bikeway

A Project of the Mountains Recreation and Conservation Authority

The Mountains Recreation & Conservation Authority (MRCA) has partnered with the City of Los Angeles to improve access, create new habitat, and add recreational elements along the Los Angeles River.

The MRCA is developing three new street end improvements, and three new planted areas along the bikeway. Each street end will be retrofitted with a planter or concrete pavers set in permeable soil. When it rains, these plants and soil will collect and clean rainwater from the streets before it enters the Los Angeles River, improving the River's water quality.

The projects will use plants native to Southern California's riparian habitats (some examples are shown to the right) that will provide habitat for birds, butterflies, and beneficial insects, as well as seasonal beauty and rest stops for bicyclists and pedestrians.


Carpenteria californica, Bush Anemone. Large white flowers bloom April thru July.


Heteromeles arbutifolia, Toyon. White flowers bloom spring thru early summer.


Ribes viburnifolium, Catalina Perfume. Tiny flowers produce a sweet perfume winter thru mid-spring.


Eriogonum fasciculatum, California Buckwheat. Flowers late spring to early fall.


Iris douglasiana, Douglas Iris. Showy purple blooms in spring.


Carpenteria californica, Bush Anemone. Large white flowers bloom April through July.


Heteromeles arbutifolia, Toyon. Red berries attract songbirds fall thru winter.


Leymus condensatus, Giant Ryegrass. Tall flower spikes in spring through summer.


Eriogonum fasciculatum, California Buckwheat. Flowers turn reddish-brown in fall and winter.


Salvia spathacea, Hummingbird Sage. Showy pink blooms March through May attract hummingbirds.

EPTDESIGN

Credit: Brian Baldauf, Mountains and Recreation Conservation Authority

Project Proponents and Community Collaborators

Since the establishment of the LARRMP in 2007, the City of Los Angeles has led numerous efforts to revitalize its 32-mile stretch of the LA River. The City has worked with local agencies, organizations, and regional conservancies to address gaps in public access along the river, to identify local community needs for park space and recreation, to improve and restore natural habitats and water quality, and to foster local pride for the LA River.

MRCA is a local, public agency created to preserve and manage open space, parks, watersheds, and wildlife habitat in LA County. They have developed multiple innovative LA River access points at street ends in the Elysian Valley and helped transform how people think and interact with the LA River. MRCA had already been working along the river in Elysian Valley for more than 20 years, implementing many neighborhood park projects before there was any attention on providing green spaces along the LA River. Their park projects, starting with Elysian Valley Gateway Park, have been instrumental in bringing the community to the LA River and sparking a desire to provide more open space, connectivity, habitat restoration, and water conservation projects along the river.

In 2011, the City of LA and MRCA drafted a Memorandum of Understanding, which laid the framework for the Elysian Valley Bikeway Project's management, development, design, and maintenance. MRCA developed the project, including securing funding, design, permitting, and construction, and the City's Department of Recreation and Parks, Board of Public Works, Bureau of Engineering, and Bureau of Sanitation supported MRCA with project permit reviews and maintenance.

MRCA prioritizes community involvement and stakeholder support in all phases of LA River project development. By the start of construction, MRCA had met with stakeholder groups in different parts of the Elysian Valley neighborhood. They communicated with elected officials and residents through community meetings providing a forum for public feedback on the project. Former Councilmember Eric Garcetti was a key stakeholder in Council District 13 providing staff support and encouraging community buy-in for the project.

Site Selection and Design

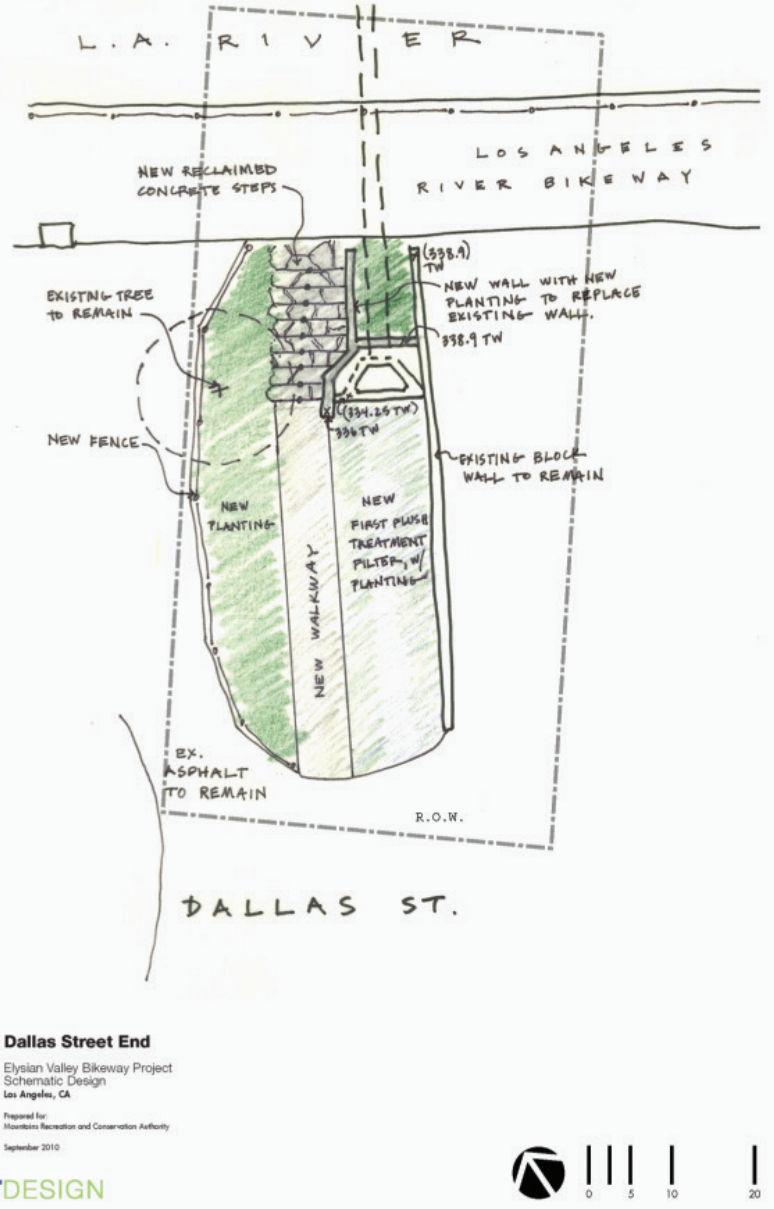
The selection of the three street ends that received improvements resulted from an examination of factors including: the community's need to access the LA River, the potential for water quality treatment improvements, and the ease and cost of project implementation. Ease of project implementation was determined by the amount of open space, street width, number of trees, and current parking demand. In particular, MRCA prioritized sites where they could cost effectively maximize the benefits of water quality treatment improvements. One challenge to increasing access to the LA River in this area was a 10- to 15-foot elevation difference from some street ends to the bike path.

MRCA wanted to create as many access points as possible within their budget and carefully chose locations lacking access to the LA River. Fernleaf, Gatewood, and Dallas street ends had no public access. All three had River-adjacent parcels of vacant land where people would dump trash. Gatewood and Fernleaf Streets are surrounded by

single-family and multi-family housing, but all improvements were on City property. Dallas street end, located about a half mile north of the other sites, is a commercial district. This development took place on public property and private land owned by the Bivans Corporation, a packaging machine manufacturer.

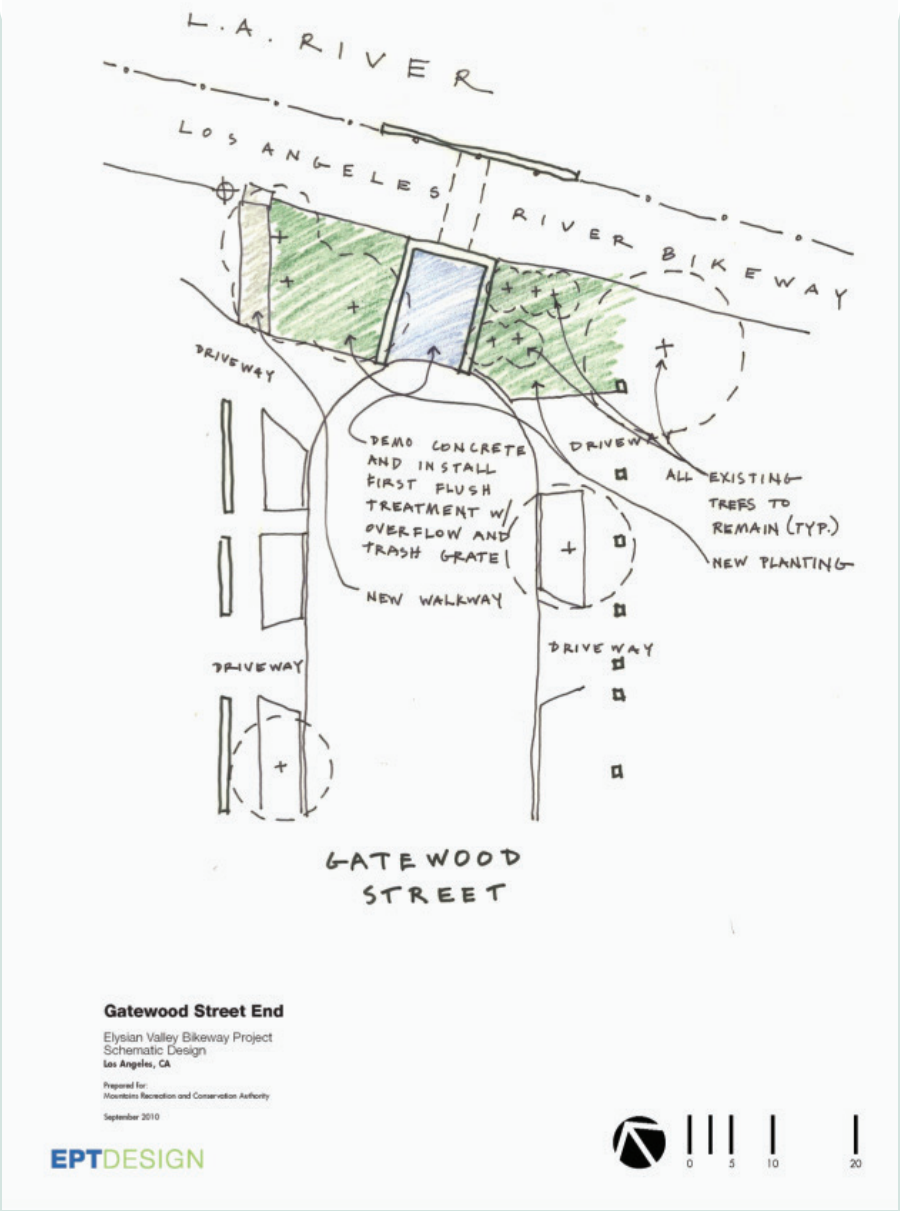
The design goals of developing access points at Gatewood, Fernleaf, and Dallas Streets emphasized both pleasant aesthetics and functionality. Staying true to their mission, MRCA wanted to improve the amount and quality of storm water that infiltrated the ground at the sites. To do this, they applied three best management practice (BMP) technologies, two of which were pulled from the Green Street Standards developed by the City Department of Public Works and Bureau of Engineering. The original plans included the following designs: at Gatewood Street, permeable pavers that allow water to infiltrate the ground; at Fernleaf Street (Figures 35-37), a filter trench that slows and cleans water entering the LA River; and at Dallas Street, a vegetative swale curb (i.e. a channel or ditch with plants) that traps debris and pollution from reaching the river. Additional amenities included small stretches of native landscaping along the bike path, a seating area near Altman Street, stairway and ramp access to the bike path at each street end, and improvements to an existing LA River gate at Fernleaf Street (Figures 35-37).

Figure 2 - 35: *Concept rendering to improve access to the LA River at Dallas Street end.*



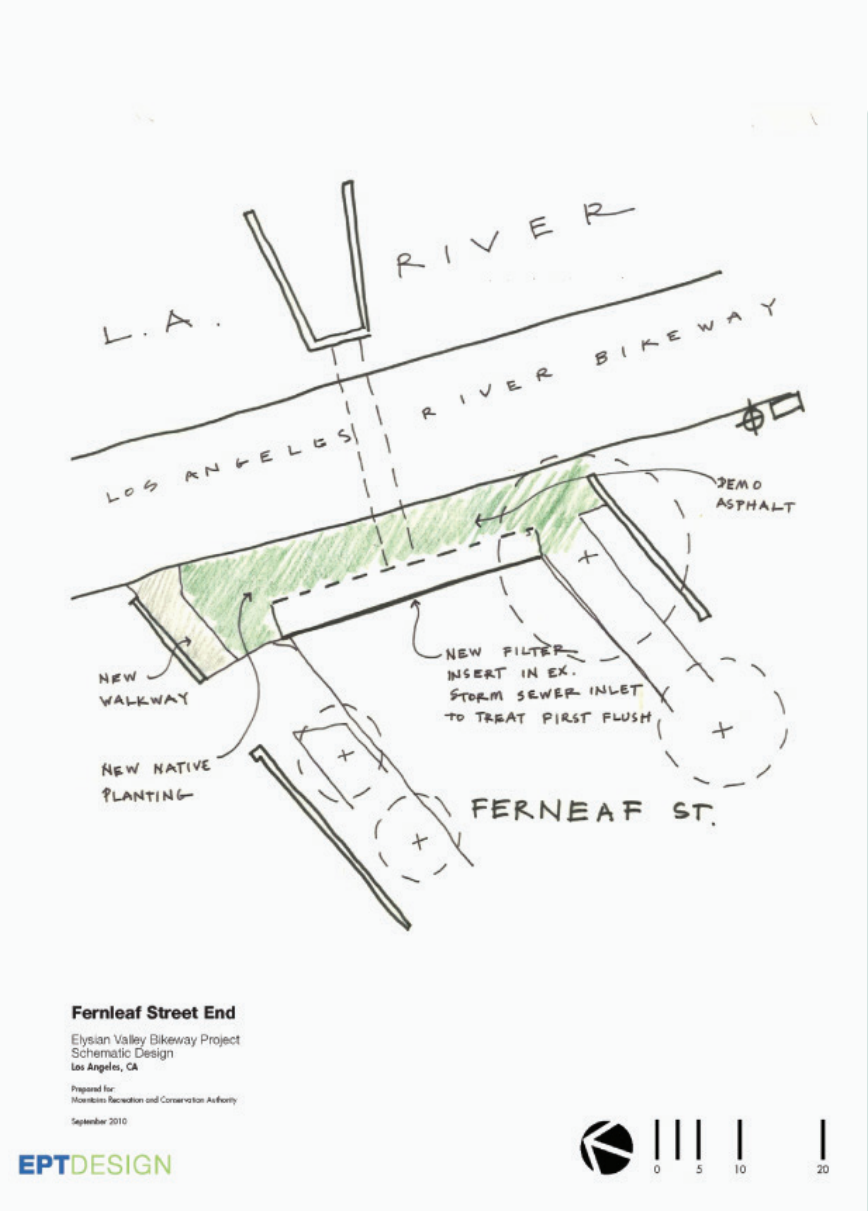
Credit: Brian Baldauf, MRCA Project Manager

Figure 2 - 36: *Concept rendering to improve access to the LA River at Gatewood Street end..*



Credit: Brian Baldauf, MRCA Project Manager

Figure 2 - 37: *Concept rendering to improve access to the LA River at Fernleaf Street end.*



Credit: Brian Baldauf, MRCA Project Manager

Table 2 - 10: Benefits of storm water best management practices considered at project sites		
Best Management Practice	Function	Description
Interlocking Permeable pavers	Allows water to percolate into the ground through crevices between paving blocks	Can be built with a range of sustainable materials and a variety of shapes and styles
Infiltration trench	Allows runoff from impervious surfaces to be captured and infiltrated into the ground	Trenches or ditches are excavated and covered with materials such as landscaping and porous material, like sand and stones
Vegetated swale with curb cuts	Traps trash and debris; promotes water infiltration and reduces storm water flow	Natural and manmade broad channel with vegetation

Source: Based on Board of Public Works, City of LA. (2011). Development Best Management Handbook 4th edition.

The final design included all of the aspects listed above, except for the development of an infiltration trench and permeable pavement on Fernleaf Street. The trench was cost-prohibitive due to its maintenance requirements. MRCA and the Bureau of Sanitation tried to include permeable pavement instead, but this also was not feasible due to the location of utility infrastructure that would require costly relocation. To address public safety concerns in the final design, they added a gate to this location, which could be closed during storm events.

Cost and Funding

The total cost for the project was approximately $550,000; roughly $120,000-$150,000 per site. MRCA applied for and received grant funding under Proposition 12, the Safe Neighborhoods Parks, Clean Water, Clean Air, and Coastal Protection Bond Act. They supplemented outstanding administrative costs in house. Keeping the proposed project designs and construction within budget was challenging. For example, they encountered the unexpected costs of testing environmentally friendly construction materials in order to meet the City Bureau of Engineering's new Green Street Standards. MRCA was forced to cut back on some initially proposed storm water BMPs to stay within the budget and timeline of the project.

Permitting and Use Agreements

MRCA was responsible for obtaining all necessary engineering, design, and construction permits for each street end project. They demonstrated new ideas, developed new standards, and participated in common LA River project approval procedures.

Securing permission to use water quality BMPs was a challenge. For example, new environmentally friendly materials (e.g. permeable pavers) required extensive testing before the City's Department of Building and Safety would approve them. Due to MRCA's efforts, future projects using the same materials will not need to demonstrate their effectiveness. Additionally, the Fernleaf Street end improvement was designed and permitted twice before project proponents decided not to include an infiltration trench at the site. This impacted project costs and delayed the timeline.

In order to secure Bureau of Engineering permits for each site, MRCA had to comply with the agency's new 2011 Green Street Standards, which dictated how to install BMPs for water quality improvement projects. While these standards were developed to streamline development, MRCA could not use them without minor changes because of the existing unique conditions of each site. The agency needed an "exemption" to alter and use the standards and then worked closely with City staff to develop new standards, engineered and tested by the Bureau, appropriate for their sites. By changing the standard, MRCA had to demonstrate the effectiveness of their designs to construction inspectors who had never seen projects of this type.

MRCA also participated in common LA River project approval procedures, like the Bureau of Engineering's B-permit process. This procedure took nearly two years due to aforementioned design changes and the need to implement Green Street Standards. It was required for landscape improvement, storm drain changes, street widening, and grade changes. MRCA, with the help of the City, also secured a "right of entry" on Bivans Corporation's private property.

Operation and Maintenance

For the first 20 years of operation, the City of LA is responsible for maintenance of the Elysian Valley Bikeway project, as detailed in the Memorandum of Understanding between the City and MRCA. It states that all LA River greenway related activities, like landscaping and irrigation, are to be managed by the City's Department of Recreation and Parks. Storm water management, such as the BMPs, is to be maintained by the City's Bureau of Sanitation. Daily maintenance, such as litter, graffiti, and trash removal, is to be maintained by the City's Board of Public Works, Office of Community Beautification.

Figure 2 - 38: *Before and after images of Dallas Street end.*

Credit: Brian Baldauf, MRCA Project Manager

GUIDANCE: LESSONS LEARNED AND BEST PRACTICES

This section presents important considerations for those interested in increasing community access to the Los Angeles River. We summarize lessons learned and best practices from case studies presented earlier in this chapter. While these projects created or improved access to the LA River, in most cases, the access point was only one component of a larger effort to develop a continuous LA River greenway. Therefore, guidance offered here may apply to larger LA River projects and advocates should consider how increasing access to the river can complement other greenway improvement efforts.

Challenges shared among this chapter's case studies include unexpected costs, project delays, collaborating with multiple agencies to obtain permits, as well as identifying and prioritizing gaps in community access to the LA River. To address these issues, project proponents should develop flexible timelines that allow sufficient time for community and stakeholder engagement, understanding project site conditions, identifying and applying for funding, and permitting.

Table 2 - 11: Summary of the case studies and their key defining characteristics

	Creating Access through Duck Park	Creating Access along North Valleyheart Riverwalk	Improving Access in South Gate	Connecting Street Ends to the Elysian Valley Bikeway
Summary	One of the first pocket parks and street end projects along the LA River; a small-scale but impactful cost effective project; provides new access to the LA River, a scenic resting stop, and access to nature	Community group/LA County partnership transformed a half-mile restricted access maintenance path into a publicly accessible recreational trail and access point to the LA River; new access includes Americans with Disabilities Act compliant ramps, improved native landscaping, recreational/educational opportunities, and public art	Improved access for pedestrians, bicyclists and equestrians to the LA River; access to the LA River and bike path was enhanced at Hollydale Park and at Southern Avenue; includes renovated restrooms	Improved community access to the LA River and bike path at Gatewood, Fernleaf, and Dallas Streets using new City of LA Bureau of Engineering's Green Street Standards; applied storm water best management practices
Project Proponent	North East Trees (nonprofit)	LA County Flood Control District (local government)	City of South Gate (local government)	Mountains and Recreation Conservation Authority (local government)

Table 2 - 11: Summary of the case studies and their key defining characteristics (Cont. from previous page)				
	Creating Access through Duck Park	Creating Access along North Valleyheart Riverwalk	Improving Access in South Gate	Connecting Street Ends to the Elysian Valley Bikeway
Partner	Mountains Recreation and Conservation Authority (local government)	Village Gardeners of the LA River (nonprofit)	San Gabriel and Lower LA Rivers and Mountains Conservancy (local government)	City of LA (local government)
Location	City of LA, Elysian Valley neighborhood; at Meadowvale Street end	City of LA, Studio City and Sherman Oaks neighborhoods; between Fulton and Coldwater Canyon Avenues	City of South Gate, Southern Avenue street end and Hollydale Park	City of LA, Elysian Valley neighborhood; end of Gatewood, Fernleaf, and Dallas Streets
Users	Pedestrians, cyclists, local community	Pedestrians, local and surrounding communities	Pedestrians, cyclists, equestrians, local and surrounding communities	Pedestrians, cyclists, local community
Improvements	Installed new decorative LA River gate; planted native vegetation; added a shaded bench and decorative steps	Constructed recreational trail with native landscaping and LA River signage; restored habitat; improved water quality	Installed new decorative LA River gate; bike rack; LA River signage; and drinking fountain; planted native vegetation; renovated restrooms	Connected three dead end streets to the LA River and bike path; provides access for disabled persons; applied storm water best management practices; planted native vegetation; added seating area
Cost	$263,000 (cost for larger project, including Duck Park)	$3,582,000	$465,000	~$550,000
Completed	2004	2014	2008	2014

Table 2 - 12: Lessons learned: summary of challenges and strategies to overcome them		
Development Process	Challenges	Solutions
Community engagement	• Not every neighborhood is outspoken about LA River access needs • Property owners adjacent to proposed project sites often have concerns about development • Adequately addressing community concerns throughout project timeline	• Be proactive in identifying areas that lack river access and advocate for increasing access • Hold public meetings, attend community gatherings, and actively seek community feedback (in some cases, door to door visits are appropriate) • Incorporate community feedback into project design and implementation
Design	• Balancing form and function of access points; including complying with the American with Disabilities Act • Project sites may have unique geology, topography, etc. • Materials used impact maintenance and costs	• Engage with community members to seek feedback on aesthetic preferences • Collaborate with permitting agencies to understand requirements early in the process • Investigate and incorporate American with Disabilities Act compliance guidelines early in project design • Prepare for possible delays by scheduling extra time for each step and setting aside extra funds • Aim to use materials that reduce the need for maintenance (like anti-graffiti paint)
Physical sitting	• Prioritizing multiple sites • Project feasibility considering local and regional needs, existing uses, and potential impacts • Project sites may have unique geology, topography, etc.	• Communicate with the community and public entities to prioritize sites • Consider existing access points and other greenway features when planning site location • Examine site conditions early in the design phase
Cost	• Unforeseen site conditions and permitting can increase costs • Identifying the exact cost of the access point alone because they are usually components of larger projects	• Plan and budget for potential unknown costs

Table 2 - 12: Lessons learned: summary of challenges and strategies to overcome them (cont. from previous page)		
Development Process	Challenges	Solutions
Funding	• Securing funding • Funders often have strict guidelines	• Identify all project benefits; projects that address multiple community needs have a higher probability of receiving funding than single component projects • Seek sites and plan to develop amenities that enable more user and environmental benefits • Carefully read funding requirements
Permitting and Use Agreements	• Obtaining permits may require a significant amount of time • Proposing and developing precedent setting standards needed to implement project • Projects on or near private lands may require a "right of entry" agreement with landowners • Unforeseen site conditions may require re-permitting • Unclear agency jurisdictions; permitting can be difficult	• Meet with permitting agencies early in the process and ask questions • Develop a feasible timeline considering all potential permit requirements • Partner with county or city departments to understand and reduce the burden of the permitting process • Consider project sites owned by the city or county: it may require fewer or no permits • Meet with project-adjacent private landowners early in the process • Expect delays and complications
Operation and Maintenance	• Operating and maintaining sites without dedicated funding • Ensuring proper landscaping maintenance	• Consider operation and maintenance early in process; find a dedicated entity to take on this role • Identify project maintenance components that may require special skills and address accordingly
Implementation schedule	• Inconsistent grant deadlines and development timeline • Delays caused by re-permitting and design changes	• Develop a flexible timeline and reassess it often • Communicate regularly with funders • Seek guidance on permitting early in the process

How do I lay the foundation to create or improve community access to the LA River?

Creating or improving community access to the LA River requires careful thought during every step of the process. The foundation for this type of project begins with feasible project goals, strong leadership, collaboration, and community engagement.

Goals and Motivation

Project proponents and collaborators should agree on clear project goals. The case studies in this chapter demonstrate goals aligned with a regional plan (i.e. Los Angeles River Master Plan, Los Angeles River Revitalization Master Plan, etc.) and the lead proponent's mission. For instance, creating safe access to and from the River bike path was a primary goal of North East Trees and the Mountains and Recreation Conservation Authority when they developed Duck Park and street ends in the Elysian Valley, respectively.

The motivation for increasing access to the LA River must begin by identifying the community's needs and by examining existing river conditions. For example, before the City of South Gate improved Hollydale Park, their Parks and Recreation Department learned from equestrian users that they were unable to ride their horses in that area. Responding to these users helped to frame the motivation and goals for the project. The project proponents for the North Valleyheart Riverwalk and South Gate projects were focused on their communities' need for increased physical activity and public space. Project proponents should also consider the historical and cultural context of the surrounding community.

Public agencies often define the need for access through site observations and by identifying gaps in transportation networks, such as adjacent street ends that do not have access to the LA River. Improving existing access points may also be motivated by other issues that impact accessibility such as safety, differences in street grade, lack of accommodations for those with limited mobility, poor signage, or maintenance issues.

Leadership and Collaboration

Effective project development and collaboration requires strong leadership. Lead organizations should understand the physical and cultural needs of the community when access point projects are proposed. An important goal for lead organizations is to develop professional relationships with agencies, community leaders, and other stakeholders who can serve as resources during project implementation. For the implementation of Duck Park and the Elysian Valley Bikeway project, getting support from Councilmember Garcetti was critical to success. Backing from elected officials is especially helpful because they can inspire community support and can motivate streamlined agency approvals.

In all case studies featured, the lead organization partnered with agencies with relevant expertise. For example, the City of Los Angeles and the Mountains and Recreation Conservation Authority developed a Memorandum of Understanding (MOU) for the Elysian Valley Bikeway project based on each entity's expertise. MOUs can be a great tool to clearly lay out a framework for management, development, design, and maintenance.

Community Engagement

LA River access projects serve as an opportunity for community empowerment through meaningful contributions to project visioning, design, development, and maintenance. Given the scope and scale of LA River projects, most are coordinated by non-profits and/or government agencies with significant capacity and past experience. But this does not mean that the project cannot be community driven. The North Valleyheart Riverwalk project is a good example of a grassroots, community driven project. Local residents who know the area can inform project design to maximize community benefits and help avoid or address unintended consequences that might be associated with it. Early community support for a project can also avoid project delays at later stages.

The community engagement process should be based on a community's needs and interests. Some communities may not be aware that they could have access to the LA River and a local agency or nonprofit can be critical to opening up new opportunities. For example, in South Gate, the City worked with the San Gabriel and Lower Los Angeles River Mountains and Rivers Conservancy to identify communities lacking access to the LA River and then identified potential project sites.

If feasible, strive to engage communities from project start to finish. Community perceptions may change throughout the process. While project proponents did not receive much feedback when they proposed the North Valleyheart Riverwalk, they did later in the development process. Just before construction, neighbors were concerned about how their property and privacy would be impacted. After construction, they were concerned about nuisances like skateboarding, graffiti, vandalism, noise, and trash. The primary challenge for project leads is soliciting adequate feedback and addressing concerns at each stage of development.

It is also important to engage elected officials and city departments with jurisdiction in the proposed project area. The vision of a continuous LA River greenway with equal opportunity for access by all is powerful and motivational. It can increase the likelihood of support from other community leaders, like councilmembers and supervisors, as well as key representatives in city and county departments. Broad support for projects allows for increased opportunities to obtain regional, state, and federal funding.

Figure 2 - 39: *North East Trees founder Scott Wilson with former Councilmember Garcetti at Duck Park's dedication and opening in August 2004.*

Credit: North East Trees

What are important design considerations?

Site Selection

Every community along the LA River has different access needs. Providing links or public entry to the LA River is often based on proximity and connection to neighborhood street ends, parks, commercial districts, and river crossings. Because funding and resources are limited, lead organizations must prioritize how many and which areas have the greatest need.

Another important consideration for site selection is thinking about how increasing access to the LA River can complement existing or proposed projects in the area. For example, the LA River greenway is not completely connected in the San Fernando Valley. Projects like North Valleyheart Riverwalk help fill in gaps and complement other projects. The Elysian Valley Bikeway project was conceptualized to complement the Los Angeles Department of Transportation's planned development of a Class I bike path in the area.

Figure 2 - 40: *Cyclists and pedestrians along the Elysian Valley Bike Path.*

Credit: Andrew Pasillas

Surrounding land uses are also important (e.g., residential, schools, commercial) to consider and can affect prioritizing site development. For example, in the City of South Gate, improving access to the River from Southern Avenue—an industrial corridor—increased the visibility of the LA River allowing for increased user traffic and safety.

In most cases, a matrix can be created to score potential project sites. In the past two decades, North East Trees and the Mountains and Recreation Conservation Authority have increased LA River access at numerous street ends using this approach. Each project required an extensive evaluation of street and river conditions and was selected by criterion that accounted for land use, traffic, trees, utility infrastructure, and land ownership. Other factors to consider include cost, ease of implementation, and the potential for water quality treatment improvements.

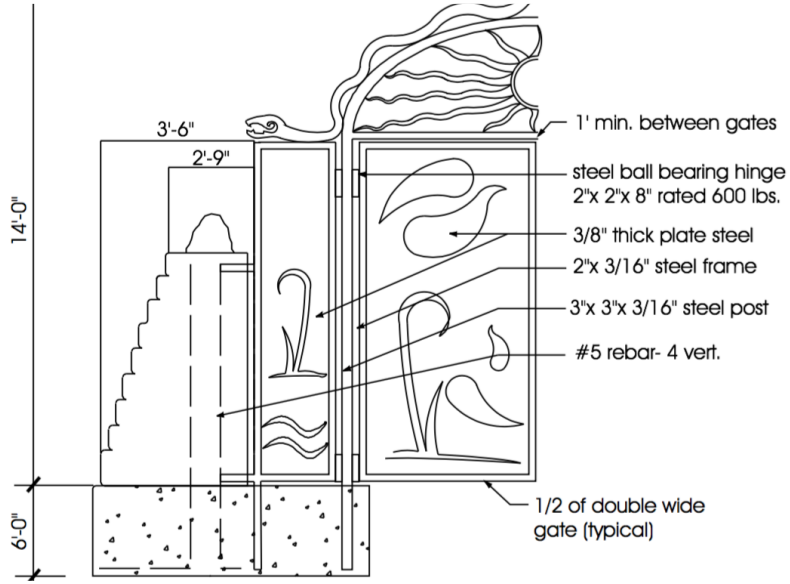
Design Concepts

River access project design should be creative; flexible; sensitive to the history and culture of a community; as well as comply with engineering, permitting, and building requirements including the Americans with Disabilities Act (ADA). The Los Angeles River Master Plan provides general guidelines for designing LA River gates, fences, signage, and landscaping.

Figure 2 - 41: *Custom gate built by artist Michael Amescua.*

Credit: Los Angeles Times

Figure 2 - 42: *Artist Michael Amescua followed the LARMP guidelines for gate height, width, and construction material in his designs.*



Credit: Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes

There are no specific standards for constructing arches, public art pieces, or pocket parks. Project proponents should discuss all designs with agencies early in the process. Failure to do so can complicate, delay, and/or increase the cost of projects. For instance, project proponents for North Valleyheart Riverwalk and the Elysian Valley Bikeway project did not expect to have to comply with ADA and the City of Los Angeles Bureau of Engineering's new Green Streets Standards, respectively. For both projects, compliance was an initial barrier to project implementation. The Village Gardeners and the Mountains and Recreation Conservation Authority worked closely with agency partners in order to complete their respective projects. Be prepared to make design changes at any step in the development process.

Contracting community artists for river projects is a popular design option, which encourages local participation and enhances LA River and community identity. Following the construction of North Valleyheart Riverwalk, the Village Gardeners solicited an artist to design a mixed-media mural to transform a concrete spillway near Ethel Avenue into a scene from the LA River's history. This project was funded by donations from councilmembers, county supervisors, neighborhood councils, and other organizations. Other examples of local artist contributions include the river gates at Glendale Narrows Riverwalk (featured in Chapter 5: Bridges) and Valleyheart Greenway (featured in Chapter 4: Pathways), which used local 5th graders' designs.

Figure 2 - 43: *The Great Heron Gate designed by river artist Brett Goldstone exemplifies potential creative elements for community access points.*

Credit: Andrew Pasillas

Figure 2 - 44: *The design for the frog-themed gate at the Valleyheart Greenway in Studio City came to life from the drawings of a local 5th grade student.*

Credit: Andrew Pasillas

Amenities and Materials

In addition to providing community access to the LA River, project leads should consider incorporating environmentally sustainable amenities like storm water management features (e.g. bioswales and infiltration trenches), native landscaping, and recycled materials for hardscaping (i.e. benches, walls, bike racks). While these may add to project costs, they can significantly benefit users and help meet project goals. For example, in addition to providing a place for recreation, interpretive signs at North Valleyheart Riverwalk educate users by detailing the LA River's history. Seating on both sides of the River is provided at Duck Park. The South Gate access project not only meets the needs of equestrians, but also provides renovated restrooms to benefit all greenway users.

The use of various materials can dictate cost, maintenance, and the environmental sustainability of projects. Lead organizations should use construction materials that provide environmental benefits to the LA River, maintain aesthetic quality, and reduce maintenance requirements (e.g., native landscaping, anti-graffiti coating, durable metals). More sustainable materials, like permeable pavement, which allows storm water to seep into the ground, may require testing for agency approval. This caused delays for the Elysian Valley Bikeway project.

Figure 2 - 45: *Interpretive signs along the North Valleyheart Riverwalk in Studio City.*

Credit: Jimmy Tran

Figure 2 - 46: *Bioswale at the Dallas Street end in the Elysian Valley.*

Credit: Andrew Pasillas

Figure 2 - 47: *Recycled material used for a bench at Duck Park.*

Credit: Jimmy Tran

What are important cost and funding considerations?

Costs

Estimating the cost of future projects that aim to increase community access to the LA River is difficult because these efforts are often one component of a larger greenway project with pocket parks, landscaping, bridges, signage, etc. In the selected case studies, project costs ranged from approximately $250,000 to $3,600,000. Street end improvements in the Elysian Valley cost roughly $120,000 to $150,000 per site. Project proponents should be conservative and flexible when budgeting: costs are subject to change throughout the development process, especially after permitting and during construction. For example, as mentioned above, the Village Gardeners did not expect to spend money to provide disability access to North Valleyheart Riverwalk. Without financial support from Los Angeles County, they would not have been able to continue with the project.

The total cost of North Valleyheart Riverwalk (not including the mural) was about $3,582,000, including $2,230,000 for construction and $1,352,000 for planning, permitting, consultants, site visits, materials testing, inspections, and other County services. The costliest component was engineering ADA-compliant pedestrian ramps. From the perspective of cost per mile of LA River bank revitalized, the half-mile project was expensive. However, it included multiple features and amenities. It not only improved access for pedestrians and disabled persons from three streets, but also restored native habitat, provided seating, developed a multi-use trail, and created public art (Steelhead trout mural). The Village Gardeners will also maintain the site at their own cost.

In summary, project costs will fluctuate depending on the number of amenities provided and how the proposed access point will alter the site's existing conditions. Project proponents should prioritize what amenities are most important without undermining their goals.

Funding

Like many river projects, securing funding for community access points requires time, partnerships, and creativity. It is important to allow adequate time to apply for and receive grants. Consideration should be given to applying for money from local and state conservation agencies; cities and counties; and the LA County Regional Park and Open Space District. Funding may also be available under Propositions A, 12, 40, and 50; from private donations; as matching grants; and through in-kind donations. Funding agencies typically prioritize projects that emphasize creating equitable access to parks, open spaces, and pathways. Closing the funding gap may require unconventional ideas. For example, the Village Gardeners sell advertising space along North Valleyheart Riverwalk to cover some maintenance costs.

While increasing community access to the LA River can be an affordable, small standalone project, we recommend that project leads consider how increasing access fits into larger, already funded city and regional planning efforts. Additionally, if funding is limited, project amenities should be prioritized. For instance, the City of South Gate decided not to initially ask the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy for money to fund bathroom renovations because it was too expensive. However, later in the project because the two entities had maintained a good relationship, the City requested an additional $215,000 for the

amenity. The Village Gardeners also prioritized project components when they decided to only revitalize the north bank of the river, due to funding limitations and because it was a manageable project for an organization of their size.

Time and stakeholder expectations are recurring challenges to implementing LA River projects. Funders may require a strict spending timeline or progress reports that do not align with the actual timeline for project development. Managing funder's expectations through clear and consistent communication is key. This includes if there are "normal" project delays or proposed amenities are not completed in time. While poor communication with funders may not necessarily jeopardize a project, it may affect future funding opportunities.

What are important planning and permitting considerations?

Like most LA River projects, efforts to increase community access to the river may require land acquisition, construction approvals, as well as special city, county, state, and/or federal permits. City or County-led efforts to improve community access to the river on their own property may be the easiest projects to implement. For example, the project in South Gate did not require any permits or use agreements because Southern Avenue and Hollydale Park are both City properties. Similarly, the Los Angeles Flood Control District owns the right-of-way along North Valleyheart Riverwalk. Permits and agreements required in the selected case studies include: B-permit for landscape improvements, storm drain changes, street widening, and grade changes within the City of Los Angeles (City of LA's Bureau of Engineering); compliance with Green Street Standards (City of LA's Bureau of Engineering); construction permits for projects on County right-of-ways (Los Angeles County Flood Control District); and the 408 permit (U.S. Army Corps of Engineers).

All projects in the City of Los Angeles that use best management practices for storm water infiltration and water quality improvements on public streets must comply with the Bureau of Engineering's Green Street Standards. If projects cannot comply, the lead organization may need to work with City staff to amend the standards and then demonstrate the new standard's effectiveness. The Mountains and Recreation Conservation Authority took this approach to improve access in South Gate.

Although not mentioned in the case studies in this chapter, many of the easements within the LA River corridor restrict certain parcels to narrowly defined uses. These uses are administered by mutual agreement between easement holders and potential users. Most importantly, flood control easements (also called "drainage easements") administered by the Los Angeles County Department of Public Works (LADPW) cover the entire River corridor and up to 25 feet beyond the top-of-bank. Any proposed development within this easement, regardless of underlying ownership, must accommodate the primary purpose of flood control and be considered by the Los Angeles County Board of Supervisors.

Projects on or near private lands may require a "right of entry" agreement with landowners, like the one signed by the Mountains and Recreation Conservation Authority and Bivans Corporation for the Elysian Valley Bikeway project.

In most cases, upfront research and accounting for all types of permitting will help project leads develop a feasible timeline, especially if the project is one component of a larger LA River development project.

What are important project maintenance considerations?

For successful, sustainable access projects, proponents should identify operations and maintenance needs during the design process. The construction materials that are selected can be a good predictor of maintenance requirements. All case studies featured in this chapter used anti-graffiti coating or durable materials to help withstand long-term weathering. The use of a native and a drought tolerant plant palette, provided in the Los Angeles River Master Plan, helps to reduce the need for and cost of irrigation and landscaping. A challenge, however, is to ensure that native plants are properly irrigated, pruned, and mulched so they can establish.

Developing an agreement early in the process, which designates an organization for project operations and maintenance is critical. Consider selecting city departments or organizations that are already responsible for maintaining similar or adjacent sites. For example, the City of LA and the Mountains and Recreation Conservation Authority drafted a Memorandum of Understanding, designating the first 20 years of maintaining the improved street ends in the Elysian Valley to the City's Bureau of Sanitation, Department of Recreation and Parks, and Office of Community Beautification—according to their expertise. This approach was also used for the City of South Gate's project.

Operations and maintenance agreements should establish how often a site should be maintained, the cost of maintaining project features (e.g., storm drain filters, landscaping, repainting, graffiti removal), and resources available for LA River users to report maintenance issues.

Figure 2 - 48: *Native plants along the recreational trail at the North Valleyheart Riverwalk.*

Credit: Jimmy Tran

Figure 2 - 49: *Coordination among project proponents is need to ensure that graffiti and litter does not impede access.*

Credit: Henry McCann

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- *James Bazinet, Landscape Architect*

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San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy

- *Marybeth Vegara, Project Manager*

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Chapter 3

PARKS along the Los Angeles River

INTRODUCTION

Definition and Benefits

Parks, also referred to as open spaces, along the Los Angeles River (LA River) serve a variety of purposes for many types of beneficiaries. Parks draw local residents and regional visitors to the LA River while expanding opportunities for recreation, social interaction, and more. Many parks were also designed for ecological and environmental benefits, by providing native habitat for wildlife, green infrastructure, and ecological restoration. Parks along the river fall in or between two main categories: 1) large, regionally significant parks with multiple components, such as recreational and educational facilities, nature trials, and native habitat, and 2) smaller, community-based pocket parks.

Figure 3 - 1: *An event pavilion, walking trails, and dry creek bed in Marsh Park.*

Credit: Meléndrez

This chapter highlights parks that provide both social and environmental benefits by providing the following:

- Community Space: Picnic areas, outdoor auditoriums, and other venues accessible to the local neighborhood and the regional public can promote community interaction and family activities. Special event programming can also be incorporated for local cultural activities and business interaction.

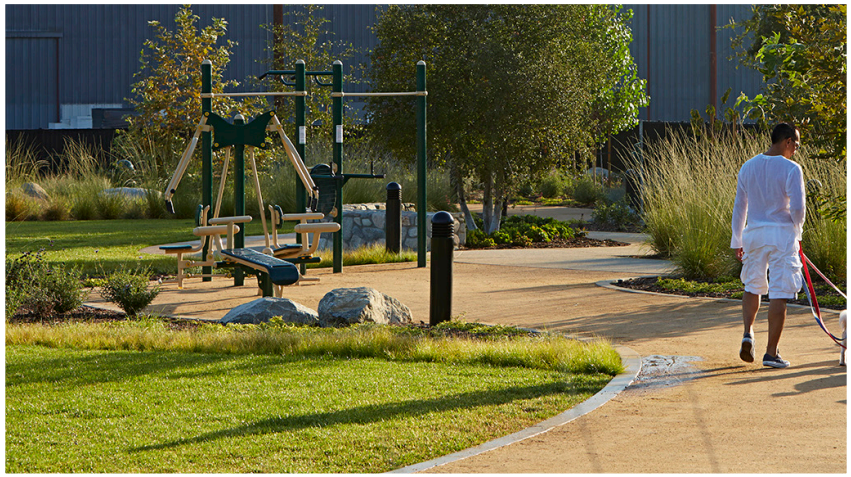
- Recreational Amenities: Fitness stations, walking trails, and other amenities surrounded by greenery can provide pleasant and safe places for health-promoting recreation for residents of all ages and interests, including at-risk youth and limited-mobility residents.

- Educational and Interpretive Opportunities: Parks can help introduce the public to their local environment and the rehabilitated LA River. Outdoor classrooms, signage, and special programs can provide learning opportunities for local schools, community groups, and those with environmental interests—regardless of age.

- Access to Nature: Restoring or preserving natural habitats and allowing the public to access these areas can provide mental health benefits while supporting the health of local ecosystems. Green space may be particularly needed in communities with few parks and/or many industrial areas.

- Ecological Restoration and Green Infrastructure: Native plants can provide habitat for wildlife and strengthen efforts to return the LA River to a vital natural resource. Natural channels, storm water infiltration areas, and other best management practices can improve water quality and support other environmental outcomes for current and future use.

Figure 3 - 2: *Fitness stations at Marsh Park.*



Credit: Meléndrez

Figure 3 – 3: *Interpretive signage, seating, and native plants in Sunnynook River Park.*

Credit: Andrew Pasillas

Figure 3 – 4: *Open fields, shade trees, and a dry creek bed in Maywood Riverfront Park.*

Credit: Dore Burry

Figure 3 – 5: *Restored native riparian and upland habitats in Sunnynook River Park.*

Credit: Andrew Pasillas

Many parks along the LA River involve community access points and trails. Organizing this Guide by four project archetypes provides a logical structure for readers to navigate. However, we recognize that this organization requires a simplification of projects that include a combination of improvements rather than merely one type of feature. It is important that parks are part of a complete and comprehensive river greenway. We also recognize that a project-by-project approach to river revitalization can sometimes feel piecemeal. Our aim is to accurately document what has happened in the past to help inform and inspire future efforts that over time may become ever more transformative and comprehensive.

Importance: Current Conditions along the Los Angeles River

Much of the development adjacent to the LA River includes industrial land uses as well as heavy rail, highway, and electricity utility infrastructure. After multiple decades of such private and industrial development, an alternative vision emerged which seeks to recognize the LA River as a natural habitat and recreational asset for the public.

Although there is still much work to be done, there are several notable park projects along the LA River. Most have been implemented in the upper section of the LA River, varying widely in size and amenities. The lower section has far fewer planned open spaces, although it is home to a handful of very successful projects. Los Angeles County's Los Angeles River Master Plan, the City of Los Angeles' Los Angeles River Revitalization Master Plan, and the City of Long Beach's RiverLink Plan identify underutilized spaces as potential park sites and make recommendations about, for example, incorporating best management practices to improve environmental quality.

Strategically Prioritizing Open Space Projects

Parks include a particularly large menu of project types, forms, purposes, and beneficiaries. Having so many options for a park project requires careful consideration to establish priorities. The following basic questions may help to clarify planning objectives and establish priorities for future proposed projects:

- How and where can the benefits of open space be most significant?
- Where can open space be successfully developed?
- What are the desired main purposes/benefits of the proposed project?
- Who are the desired users/beneficiaries of the project, and how can the project address their needs?

In this chapter, we explore how four successfully implemented projects addressed these questions.

Figure 3 – 6: *Visitors and community members utilizing Marsh Park, Phase II.*

Credit: Meléndrez

Learning from Case Study Projects

The project profiles are meant to inspire and inform future efforts to develop parks so that all communities along the 51 miles of the LA River have equitable access to public, open space. As such, the case studies involve transferrable lessons learned that are relevant even as some political, financial, environmental, and social conditions may change over time. Cudahy River Park, presented as an abridged profile, represents a small budget, big impact project. We present Marsh Park Phase II, Sunnynook River Park, and Maywood Riverfront Park as full case studies of larger projects. These four examples represent a diverse range of project types with various forms, approaches, purposes, users, and locations along the LA River. We present the projects from smallest to largest in scale, which also tends to correspond to their cost and complexity.

Each case study describes the project's development process—including origins, goals, and timeline; project proponents and community collaborators; site selection and design; cost and funding; permitting and use agreements; as well as operations and maintenance. The chapter ends with guidance for pursuing similar projects. A summary of the defining elements of each project is shown below:

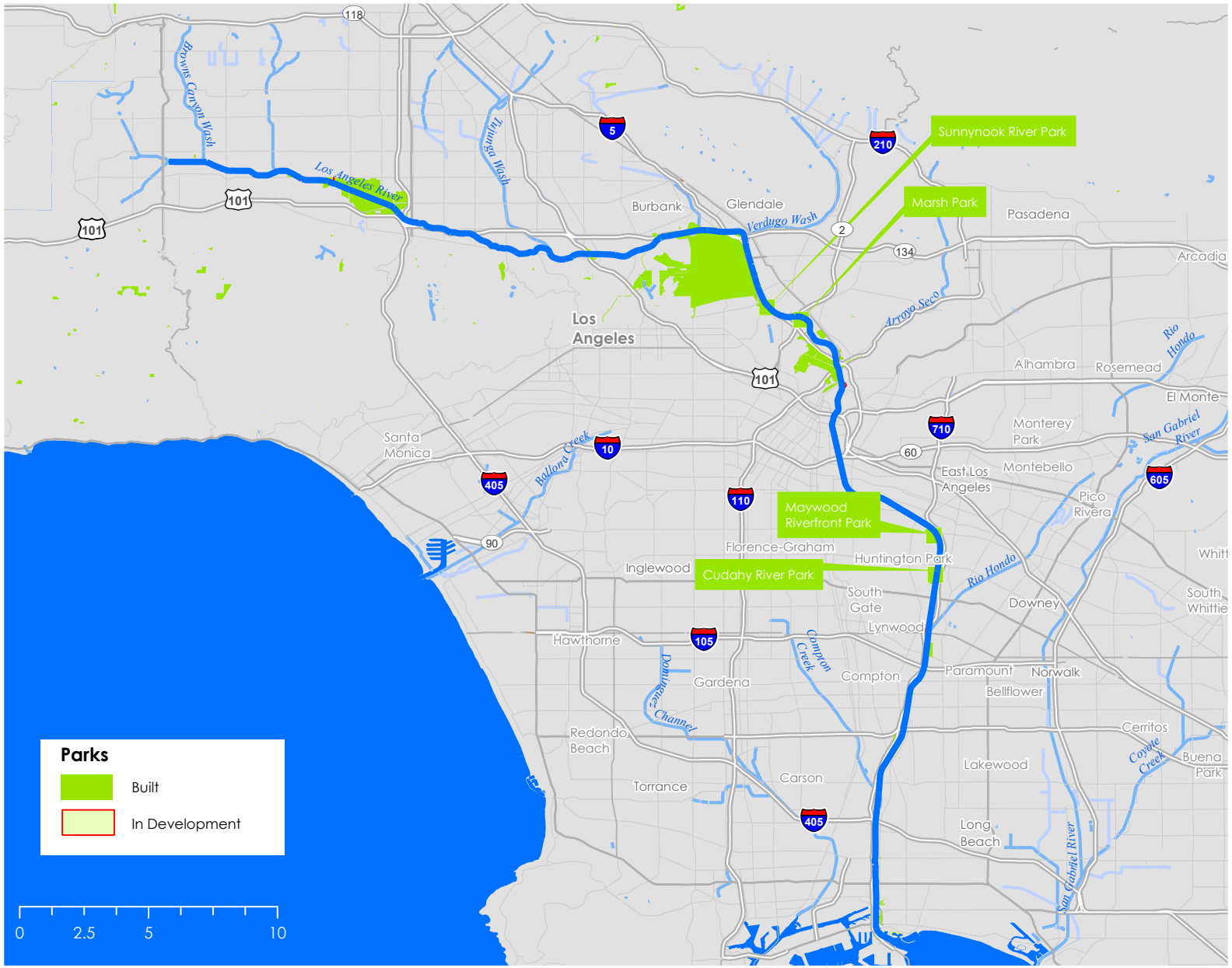
Table 3 - 1: Cudahy River Park	
Location:	City of Cudahy, corner of River Road and Clara Street
Form and Scale:	Developed vacant residential lot into a small (0.25 acre) park
Key Benefits:	Community access to the LA River; improved water quality and management of storm water runoff
Keywords:	Small scale, low cost project located in an underserved residential community; innovative green infrastructure; model project for small organizations
Lead Proponents:	City of Cudahy and North East Trees
Cost:	$378,000 for design and construction (site acquisition costs not available)
Completed:	2009

Table 3 - 2: Marsh Park Phase II	
Location:	City of Los Angeles, Elysian Valley neighborhood
Form and Scale:	Converted industrial land into a 3.1-acre park, part of a multi-phased open space project
Benefits Include:	Active recreation; event and social gathering space; access to nature; green infrastructure; native habitat restoration
Keywords:	Community-driven design; array of park amenities including fitness stations; educational programs; transformation of a former industrial site in an underserved community
Lead Proponents:	Mountains Recreation and Conservation Authority, with noteworthy high levels of community involvement
Cost:	$8 million: $3.6 million for site acquisition and $4.4 million for design and construction
Completed:	2014

Table 3 - 3: Sunnynook River Park	
Location:	City of Los Angeles, Atwater Village
Form and Scale:	Connected the greenway along the LA River to Griffith Park with a 5-acre open space area complete with native habitat and trails
Benefits Include:	Passive recreation; habitat restoration; water quality improvement; outdoor education Designed for many types of uses and users; doubled the amount of park space in the dense, underserved community of Maywood
Keywords:	Example of innovative and budget conscious design; complex site configuration
Lead Proponents:	City of Los Angeles, Bureau of Engineering Architectural Division
Cost:	$1.7 million for design and construction (no site acquisition costs required)
Completed:	2013

Table 3 - 4: Maywood Riverfront Park	
Location:	City of Maywood, south of Slauson Avenue Bridge
Form and Scale:	Brownfield and Superfund sites cleanup and transformation into a 7.4-acre park
Benefits Include:	Designed for many types of uses and users; doubled the amount of park space in the dense, underserved City of Maywood
Keywords:	Example of complex site acquisition and remediation of industrial land; particularly large numbers of partners and coordinating agencies involved; also involved community engagement in an underserved city
Lead Proponents:	City of Maywood and multiple project partners, including the Trust for Public Land and the U.S. Environmental Protection Agency
Cost:	$50.5 million: $5.9 million for site acquisition, $4.6 million for design and construction, and $40 million for site remediation
Completed:	2008, some remediation is ongoing

Figure 3 - 7: *Parks along the Los Angeles River, labeling out those featured in this chapter.*



Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

SMALL PROJECT BIG IMPACT

CUDAHY RIVER PARK

Cudahy River Park serves as a model for open space development along the lower portion of the Los Angeles River in southeastern Los Angeles County. The project illustrates how a small-scale and relatively low cost park can revitalize the LA River, address local needs for open space, and improve storm water management and water quality.

Figure 3 – 8: *Cudahy River Park provides the community with open space, serves as a rest area along the LA River bike path, and improves local water quality. (Picture taken when park opened.)*

Credit: North East Trees

The City of Cudahy has a land area of only 1.226 square miles, but it has one of the highest population densities of any incorporated city in the U.S. The majority of the residents are first-generation Latino immigrants and nearly 30% of the population lives below the poverty line. This park-poor, underserved community is adjacent to the LA River, making it a prime location for revitalization. In 2006, the nonprofit organization North East Trees and the City of Cudahy partnered to do just that. They transformed a narrow, vacant corner lot along the east bank of the LA River into a small pocket park with open green space, a nature trail, native vegetation, decorative gates, shaded seating, storm water management features, and improved access to the river and bike path.

Figure 3 – 9: *The entrance to Cudahy River Park today (now with denser tree coverage).*

Credit: Henry McCann

Origins, Goals, and Timeline

North East Trees partnered with the City of Cudahy in 2006 to begin developing Cudahy River Park. The mission of North East Trees is to restore nature's services in resource challenged communities, through a collaborative resource development, implementation, and stewardship process. The goal of the project was to revitalize the LA River greenway and to provide the underserved community with multiple benefits. North East Trees managed the design, development, and implementation of the project. The City also played an important role in facilitating the project's development. They acquired the property, financed part of the project, secured construction permits, and managed long-term operations and maintenance.

Figure 3 – 10: *Riparian habitats and native landscaping act as storm water capture and infiltration zones in Cudahy River Park.*

Credit: Henry McCann

By following the environmental improvement standards set by Los Angeles County's Enhanced Watershed Management Plan,[1] North East Trees developed Cudahy River Park to increase park space for local residents and to meet the County's storm water mitigation goals of water quality improvement, reduced runoff, and ground water recharge.

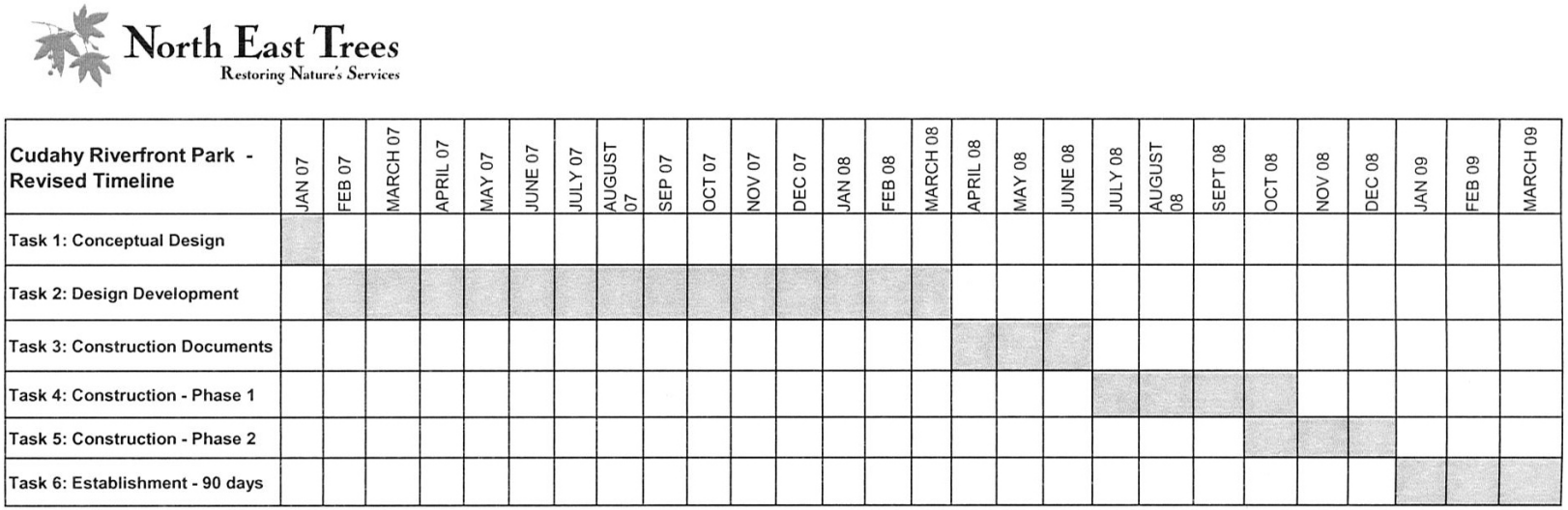
Figure 3 – 11: *The site's original storm drains emptying untreated rainwater into the LA River.*

Credit: Henry McCann

1 Los Angeles County Stormwater Program. (2015). Enhanced Watershed Management Plans. Accessed (August 12, 2015, http://www.la

Table 3 - 5: Cudahy River Park development timeline	
Date:	Milestone:
August 2006	North East Trees proposes project to the City of Cudahy
January 2007	Conceptual development begins
June 2007	Rivers and Mountains Conservancy awards North East Trees with Proposition 50 funding
July 2007	LA County Parks and Open Space District awards the City with Proposition A funding
July 2008	Construction drawings submitted by North East Trees and approved by the City of Cudahy; Construction begins
February 2009	Major construction complete; Park unveiled with community stakeholders
April 2009	Park officially opened to the public

Figure 3 – 12: *Cudahy River Park development timeline.*



Credit: North East Trees

Siting and Design

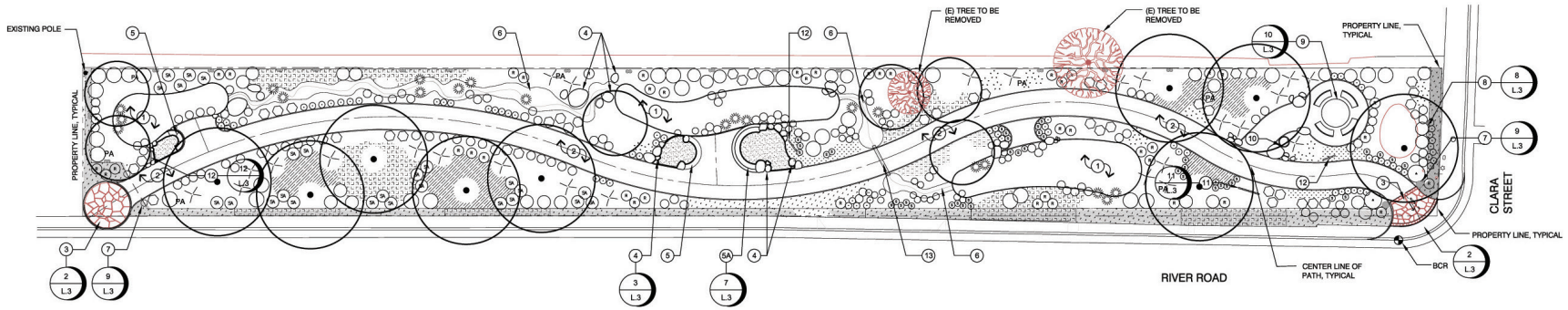
Cudahy River Park was developed on a vacant residential lot adjacent to the LA River. Before the Park's development, rainwater would flow—down streets collecting contaminants and debris—into the site's catch basin, which would then send the water through a pipe directly to the LA River. By siting the Park next to the LA River and by identifying the importance of the site's existing catch basin, the project was designed to redirect storm water to three new infiltration areas.

Limited by the long, thin shape of the site (approximately 330 by 35 feet), North East Trees utilized storm water capture techniques that could also serve as park features. As such, planted areas act as both open space and a place to absorb excess water and replenish local groundwater reserves (also known as a bioswale). Some other storm water capture features include a dry streambed and a sub-grade catchment system, which collects and distributes water to infiltration basins planted with riparian vegetation.

Figure 3 – 13: *Existing storm water runoff and the Park's proposed storm water best managment practices configuration.*

Credit: North East Trees

Figure 3 – 14: *Cudahy River Park construction plan. Call-outs indicate locations for hardscape elements such as seating and bike racks.*



Credit: North East

Figure 3 – 15: *Partial section drawing illustrating the Park's storm water mitigation strategies.*

Credit: North East Trees

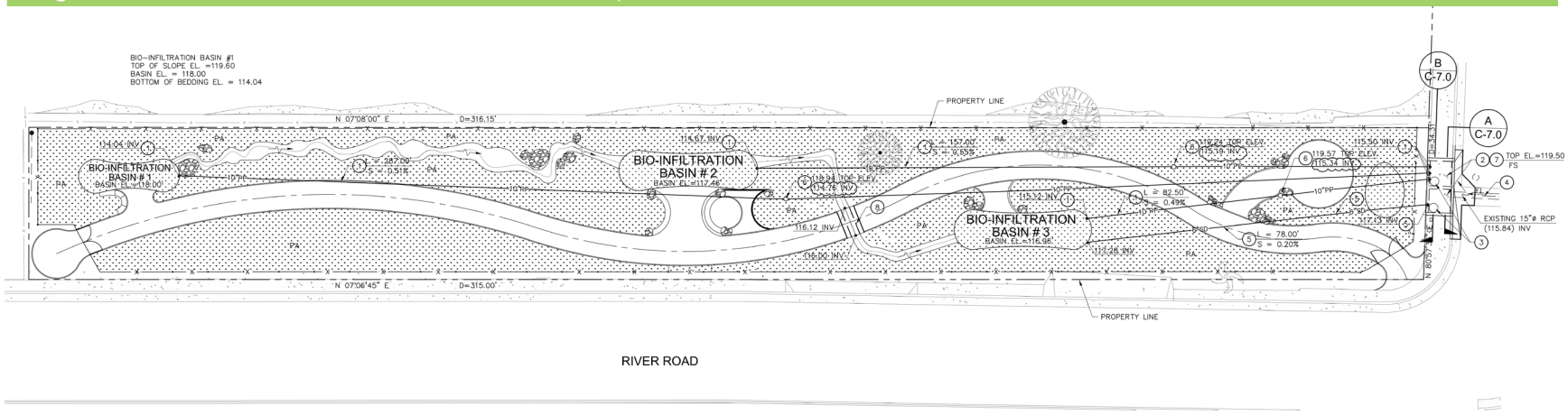
1. Modified storm drain at Clara St.
2. Pipes to channel water into site
3. Infiltration basins

The Park's initial concept was developed by North East Trees and presented to the public to solicit feedback. Based on the community's response, the final park design included decorative entry gates, new fencing, picnic tables, a bike rack, and walls with seating. Interpretive signage informs visitors about the City of Cudahy, the local environment, and how the Park improves conditions along the LA River.

Cost and Funding

The total cost to design and develop Cudahy River Park was approximately $387,000, not including site acquisition.

Figure 3 – 16: *Location of bio-infiltration basins at Cudahy river Park.*



Credit: North East Trees

Table 3 - 6: Design and development costs for each project phase	
Amount:	Costs:
Unknown	Site acquisition
$100,000	Project management, design, and permitting
$160,000	Site preparation (e.g. grading) and park construction, including water quality infrastructure, curb cuts, irrigation, and labor
$111,000	Amenities, surfacing, and finishes
$9,000	Native vegetation establishment
$7,000	Annual operations and maintenance

North East Trees applied for a $150,000 grant from the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (Conservancy). The Conservancy provided the money under Proposition 50, the Water Quality, Supply, and Safe Drinking Water Projects Act of 2002. These funds are for public water infrastructure projects that improve water quality. As funders often do, the Conservancy mandated how the money could be used: for natural features only, not for man-made hardscape elements.

The City of Cudahy also applied for and received a $363,000 LA River Access Grant from the LA County Parks and Open Space District. This money was available for LA County Supervisorial District 1 under Proposition A, the Safe Neighborhood Parks Act. The funds were given for site acquisition and to develop two rest areas along the bike path. The City of Cudahy also supplied some project funding, as well as in-kind administrative, design, and permitting support.

The development of Cudahy River Park was celebrated with residents, business owners, and elected officials, including LA County Supervisor Gloria Molina, at the Park's Opening Ceremony in February 2009. A 90-day establishment period was implemented to ensure the health of the native landscaping. The Park officially opened to the public on April 1, 2009.

Figure 3 – 17: *Opening ceremony for Cudahy River Park in February 2009.*

Credit: North East Trees

CASE STUDY #1
Marsh Park Phase II

On a former industrial site in the City of Los Angeles's Elysian Valley, Marsh Park Phase II is a 3.1-acre park expansion project along the Los Angeles River. It features native habitat restoration, active and passive recreation opportunities, educational resources, access to the LA River, and green infrastructure. Led by the Mountains Recreation and Conservation Authority (MRCA), the project was completed in 2014 with the help of many public and private organizations, and developed using constructive dialogues with the local community. As part of an ambitious, long-term open space project, Marsh Park Phase II represents an important public investment in an underserved community, a shift away from industrial land-uses at the edge of the river, and a regionally significant contribution to revitalizing the LA River greenway.

The Park's multiple amenities serve many different types of user groups. For instance, grassy meadows offer space for informal play, picnicking, and group activities, while the 200-person event pavilion draws in regional visitors for larger and more organized functions. Marsh Park's year-round educational programming and two outdoor classrooms allow for rich learning experiences for people of all ages. Programs such as the LA River Recreation Kayaking Program and Junior Rangers give teens an opportunity to interact with the LA River, and programs like camping "Along the River and Under the Stars" are designed for the entire family. As a gateway to the LA River, Marsh Park's interpretive and education programs introduce participants to the plants and animals in the riparian ecosystem and the importance of natural resources. Naturalists and rangers from MRCA lead classes and activities, such as bird watching, to help visitors better understand their environment.

Figure 3 – 18: *Event pavilion, dry creek bed, and LA River bike path entrance at the north end of Marsh Park.*

Credit: Cameron Robertson

Origins, Goals, and Timeline

In 2000, the Trust for Public Land (TPL) acquired the industrial parcel in the Elysian Valley neighborhood for $3.5 million. Land ownership was then transferred to the Santa Monica Mountains Conservancy, which in turn transferred ownership to MRCA in 2001. Running along the west bank of the LA River, in the soft-bottom area of the Glendale Narrows and across from Rio De Los Angeles State Park, the site was identified as a key open space project early in LA River revitalization efforts because it had the potential to be a model for greenway development. To be completed in three phases, the Park was designed to provide a variety of community amenities, access to the bike path along the LA River, and add 700 feet of river frontage to the greenway.

Phase I of Marsh Park was completed in June 2006. The half-acre park along the bike path features open space with native plants, public art, picnic areas, and storm water infiltration areas. In 2007, MRCA partnered with the Los Angeles Neighborhood Land Trust to help the community build Marsh Street Skate Park on a small portion of the site. The project was considered a major success and MRCA immediately asked the community what they envisioned for Phase II of Marsh Park's development. MRCA saw the Park as an opportunity to provide the underserved Elysian Valley with high quality park space, and to expand river access and amenities for the community.

Figure 3 – 19: Industrial site, prior to the Park's development.

Credit: Mountains Recreation and Conservation Authority

Table 3 - 7: Timeline for Marsh Park Phase II	
Date:	Milestone:
2000-2001	Site acquired
2006-2007	Phase I and Marsh Street Skate Park completed; MRCA begins Phase II
2006-2008	Community outreach conducted
2008-2009	Project halted for 18 months (Proposition 84, Bonds for Flood Control and Water Supply Improvements of 2006, funds were frozen)
2010	Demolition abatement plan finalized
2012	Environmental review approved; Construction documentation completed
2013, April	Plans approved by LA Department of Building and Safety; Public bid for construction contractor released
2013, June	Permitting completed; Bid awarded
2013, July	Construction began
2014, August	Grand opening
2015, June	MRCA assumed maintenance and operations responsibilities

Project Proponents and Community Collaborations

MRCA, a local government joint-powers public entity dedicated to the preservation and public use of wildlands and urban open space, was responsible for all stages of Marsh Park's development and management. This included securing government funding, directing development, and managing long-term operations and maintenance. Consultants were brought in to support key pieces of the project, including environmental reviews, park design, and community outreach.

Several community meetings were held during the preliminary project stage between 2006 and 2008. The landscape architecture firm, Meléndrez, guided community discussions and received input about the Park's concept design. As stakeholders, project participants, and clients, community members voiced their desire for the Park to serve many different users and age groups. They wanted areas for play and others for quiet reflection, as well as some natural spaces, outdoor education areas, and fitness stations.

Figure 3 – 20: *Responding to the community's request, MRCA provided 13 fitness stations throughout the Park.*

Credit: Andrew Pasillas

At the same time, local residents raised concerns about the project's potential impact on parking and traffic especially given the narrow surrounding residential streets and the unknown impacts of large events that would take place at the proposed 200-person pavilion. MRCA eased community concerns by communicating how many people they expected to accommodate, describing the applicable regulations on light and noise pollution, and how these impacts would be mitigated by the City of LA. For homes close to the Park, MRCA spent a significant amount of time meeting with each property owner. The outreach process was important to reassure residents that sound abatement, privacy, security, and other issues were being addressed and park amenities would properly serve visitors and neighbors.

In soliciting and responding to community feedback, MRCA maintained good relationships and open communication with local leadership, including the Offices of Councilman Mitch O'Farrell and former Councilman Eric Garcetti.

Site Selection and Design

Marsh Park is located in an industrial zone of the Elysian Valley neighborhood, east of California State Route 2 (Glendale Freeway) and Interstate 5, north of residences, and southwest of the LA River. The site's location allows the Park to create direct access to the LA River and provides connectivity to other communities and parks along the River's bike path.

The project was conceived as a multi-benefit park that could appeal to a wide range of users and improve environmental quality. It was designed to be a model for open space along the LA River greenway. Decisions about what elements to include in the Park were driven by both the lead agency's goals and the community's needs and requests for particular amenities.

Figure 3 - 21: *MRCA sought feedback from all potential park users on what amenities they wanted.*

Credit: Andrew Pasillas

Figure 3 - 22: *Trails lead visitors to fitness stations, seating, and picnic areas; the open grass field is in the center of the Park.*

Credit: Andrew Pasillas

Figure 3 - 23: *Proposed Park site on an industrial parcel adjacent to a residential neighborhood (outlined in red).*

Credit: Mountains Recreation and Conservation Authority

Figure 3 - 24: *Proposed design.*

Credit: Meléndrez

MRCA designated which parts of the 5.4-acre site to utilize for each phase of the project. Phase I and the skate park were planned to occupy 1.4-acres of the site. On the remaining four acres, there were three industrial buildings. Two of the buildings were vacant and the third was occupied by a local company. MRCA defined a 3.1-acre portion of the site to be developed into park space. They demolished two of the buildings and removed impervious asphalt surfaces along the LA River.

Figure 3 - 25: *Final design for Marsh Park Phase II.*

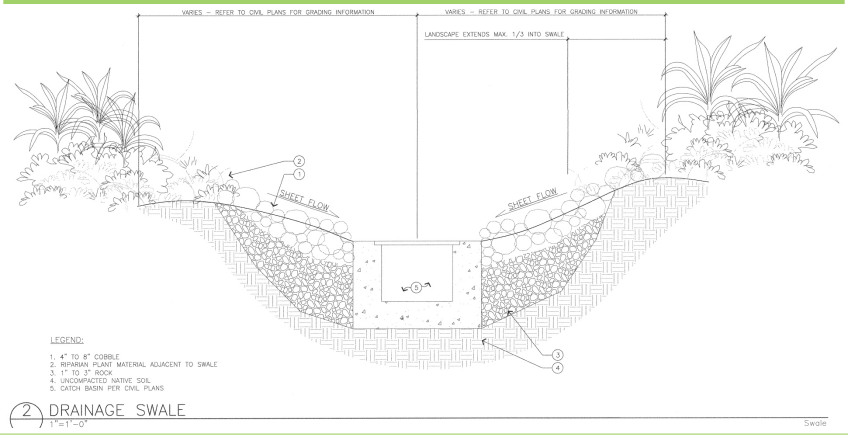
Credit: Meléndrez

MRCA's goal was to make the Park as natural as possible by including decomposed granite walking trails, native plants, an arroyo, and a marsh. These amenities were designed to connect visitors with their environment and to act as functional "green infrastructure" to continually improve that environment. Project engineers created various types of bioswales to capture and clean storm water from surrounding streets on-site. One type of bioswale, that was included in the final park design, is dry streambeds, lined with river rocks and native plants. It slowly filters contaminated water through sand, rocks, and clay; drains into the river; and replenishes local groundwater. Over 100 native trees, such as sycamores and oaks, were planted for shade and to encourage birds, mammals, and insects to re-inhabit the area. There are also picnic areas and outdoor classrooms for visitors to enjoy.

Figure 3 - 27: *The Park's restroom is located in the center of the site, while a bioswale runs along the park's edge.*

Credit: Cameron Robertson

Figure 3 - 26: A technical drawing of the Park's storm water bioswales.



Credit: Meléndrez

The Park's final design reflected the community's feedback and addressed their concerns. Along the loop trail, MRCA incorporated 13 health and fitness stations, as requested by residents. The equipment are now the Park's most popular amenity and draw visitors from a large area. Responding to the needs of Park visitors and bike path users, MRCA also developed a public restroom at the center of the Park—the first one along the LA River bikeway for nine miles.

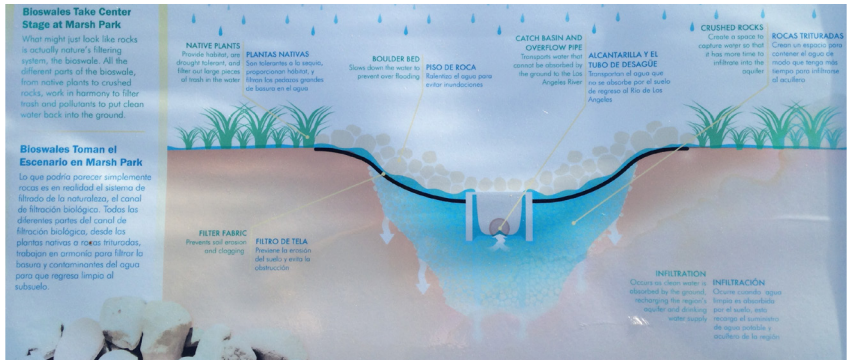
At the west end of the Park, MRCA included a pavilion for large public events. Created by ERW Design, the open-air Spanish mission-style 200-person pavilion provides a venue for special events, group gatherings, performances, and picnics. Special Events Permits are required for large and/or long events and the associated fees offer an important and creative revenue-generating element that helps to sustain the Park's operations. To respect the community's parking and traffic concerns, MRCA dedicated the southern portion of the site to vehicle access and included 43 new parking spaces and electric vehicle charging stations to accommodate visitors and large events.

To create an inviting entrance to Marsh Park from the high-traffic bike path, MRCA commissioned Brett Goldstone to create 160 feet of decorative fencing and a gate with artistic representations of the LA River environment. With the gate along the bike path as the primary entrance to the Park, Marsh Park invites visitors to spend time in the Elysian Valley and provides users with bike racks and stone benches.

Figure 3 - 28: *The entrance of Marsh Park from the LA River bike trail; features cobblestone seating, bike parking, a sculptural gate, and picnic tables.*

Credit: Cameron Robertson

Figure 3 - 29: *Example of an interpretive sign found in Marsh Park. This sign describes in both English and Spanish the design and function of bioswales for storm water management.*



Credit: Cameron Robertson

Cost and Funding

Marsh Park Phase II was designed and built for approximately $4.4 million, not including site acquisition costs.

The State of California funded more than 90% of the project, including the money used to purchase the land. Like many park project leads, MRCA piecemealed funding through multiple sources. Much of the funding was made available through Assembly Bill 31, the Community and Neighborhood Park Revitalization Act of 2007 (authored by Senator Kevin de León). This bill created guidelines to provide funds for underserved, park-poor communities. Two separate Proposition 84 Bonds for Flood Control and Water Supply Improvements (2006) grants were also awarded to MRCA. Phase II was a good candidate for this funding because it planned to provide public access to and protection of a natural resource (LA River), control flooding, and reduce water contamination.

Table 3 - 8: General development costs to develop Marsh Park Phase II

Project category	Cost
Administration	$300,000
Planning, design, engineering, and environmental documentation	$430,000
Construction and implementation	$2.9 million
Environmental compliance, mitigation, and enhancement	$30,000
Construction administration	$335,000
Other costs	$25,000
Contingency	$400,000
Total	$4.42 million

In the first step of MRCA's multi-stage process to secure funding, they were awarded $150,000 under Proposition 84 from the Santa Monica Mountains Conservancy in 2008. This was used for the planning, design development, construction drawings, environmental analysis, and hazardous materials abatement. In order to comply with the California Environmental Quality Act and cover the costs of permitting and construction, MRCA applied for additional Proposition 84 funding. They were awarded an additional $300,000 from Santa Monica Mountains Conservancy for project administration and to demolish two buildings (a 14,300 square-foot metal warehouse and a 3,000-square foot wood and stucco building) as well as $2.7 million for the Park's construction.

Other significant amounts of funding were awarded in the following ways: California State Parks provided $725,000 under their Statewide Park Development and Community Revitalization Program; $434,831 was awarded under Los Angeles County Proposition A Excess Funds, the Safe Neighborhood Parks Proposition of 1992; and an unknown amount was provided under California Proposition 13, the Safe Drinking Water, Clean Water, Watershed Protection, and Flood Protection Bond Act. The Los Angeles Conservation Corps also contributed $110,712 to Marsh Park Phase II's development through in-kind construction services.

MRCA was forced to put the project on hold in 2008 during the state budget crisis. The state asked their grantees to stop work, with the expectation they would not be reimbursed for project expenses during 2008 until late 2009. Work resumed at the end of 2009 and only got fully back on track in 2013.

Permitting and Use Agreements

To develop Marsh Park Phase II, MRCA and their consultants secured permits from the City of LA, the State Water Resources Control Board, and LA County. They also secured an easement from the Los Angeles River Lofts development to allow for a two-way entry and exit at the northwest corner of the Park.

Demolition permits were required to ensure that the two industrial structures were removed safely. Older buildings often have asbestos and lead paint, which require hazardous materials analysis and abatement plans. Comprehensive testing was done on each of the buildings and soil on the site.

The project was subject to review under the California Environmental Quality Act (CEQA). MRCA hired a consultant for the environmental documentation. Community concerns were incorporated into the document and either addressed directly or mitigated. For example, MRCA partnered with the City to install speed bumps to slow traffic on a nearby street. The final analysis and review of the Park's environmental impacts found that through revisions to the project plans, there would not be a significant effect on the environment or the community.

Table 3 - 9: Permits and associated costs required for Marsh Park Phase II		
Permitting Agency	Required Permits	Cost
City of Los Angeles	• Grading Permit • Demolition Permit • Building Permit • Landscaping Permit • Green Building Plan Check • Haul route approval • Standard Urban Storm water Mitigation Plan (SUSUMP) or Low Impact Development approval • Sanitary Sewer Connection (S-Permit) approval	$4,950
	Approval of hydrants and site access (Los Angeles Fire Department)	0.111% of project value (min $528) + additional fees
State Water Resources Control Board	Storm Water Pollution Prevention Plan (SWPPP) approval	$1,650
Los Angeles County	Storm Drain Connection Permit	$265 + additional fees

Construction

As a public works project, construction of Marsh Park Phase II was publicly bid on in April 2013. Out of 21 bids received, Newman Midland Corporation was awarded the job for just under $3 million. They were to demolish two buildings, conduct site grading, and complete park construction, landscaping, and one year of vegetation maintenance.

With landscape architecture firm Meléndrez in charge of construction administration and Newman Midland Corporation building the Park, the experienced project teams worked closely to keep project schedules on-track. Construction began in July 2013 and was completed a year later. Building demolition took one month, grading and site preparation took two and a half months, infrastructure construction took seven months, and landscaping took one and a half months.

Although project implementation went smoothly and as scheduled, most large and complex projects encounter unexpected challenges that need to be addressed. For Marsh Park, site grading proved to be the biggest challenge. Neighbors had legitimate concerns over large trucks and machinery traveling through the community's narrow residential streets. Mitigating the traffic, noise, and dust for the grading and excavation phases was critical. To address these challenges, the design and contracting teams minimized soil exports, and therefore truck traffic, by evening out excavation and infill, and by utilizing resources on-site as much as possible.

Figure 3 - 30: *Open fields and native vegetation provide opportunities for visitors to access and enjoy the outdoors.*

Credit: Andrew Pasillas

Operations and Maintenance

MRCA is responsible for all operations, maintenance, and special programming for Marsh Park. These efforts are partially supported by revenues generated through permit fees for special events held at the new pavilion.

Figure 3 - 31: *Signs in English and Spanish announce programs put on by MRCA at Marsh Park.*

Credit: Cameron Robertson

CASE STUDY #2
Sunnynook River Park

The City of Los Angeles's Bureau of Engineering led the transformation of underutilized public property into a 5-acre, multi-benefit park with native habitat and walking trails along the Los Angeles River and its bike path. Opened in 2013, Sunnynook River Park's design is a model of how to integrate environmental improvement strategies while providing outdoor education areas. Located between Interstate 5, the Glendale-Hyperion Bridge, and the LA River, the project also serves as an example of how to overcome complex development requirements and connect the LA River to nearby amenities, such as Griffith Park.

Figure 3 - 32: *The north entrance of Sunnynook River Park, with the Sunnynook Pedestrian Bridge in the background.*

Credit: Andrew Pasillas

Origins, Goals, and Motivation

In 2007, the City's Los Angeles River Revitalization Master Plan (LARRMP) identified the creation of Sunnynook River Park as a priority LA River greenway project. It was envisioned to be a multi-benefit project complete with access to the bike path, habitat restoration, educational opportunities, park and recreational space, and storm water management features. It was also meant to serve many different users and achieve multiple objectives, such as transportation connectivity. For instance, its location was identified as an opportunity to connect the LA River greenway with one of the largest urban parks in the nation, Griffith Park. The Park and the connections it provides now benefit many highly urbanized communities including Atwater Village, Silverlake, Elysian Valley, and others.

Providing quality open space, recreation, and access to the outdoors in dense, diverse communities is a goal of LARRMP. Based on this goal, as well as funding and community considerations, the design of Sunnynook River Park needed to address three major priorities: opportunities for passive recreation, habitat restoration, and water quality improvement. Project proponents also wanted to rebuild ecological linkages and connect wildlife communities historically divided by Interstate 5 and other infrastructure projects.

Figure 3 - 33: *Diagram of the proposed Park site, and its connection with local parks, bridges, and bike trails, to create the Sunnynook River Loop.*

Credit: City of Los Angeles Bureau of Engineering

Figure 3 - 34: *The existing site, prior to the development of the Park.*

Credit: City of Los Angeles Bureau of Engineering

Project Proponents and Community Collaborations

The City of LA Bureau of Engineering Architectural Division (BOE) was the project lead. They oversaw the development process, including community outreach, securing use agreements, design, permitting, and construction. Portions of the project site were owned by the California Department of Transportation and the Los Angeles Department of Water and Power, which required multi-agency coordination. Sunnynook River Park also required a great deal of cooperation with Los Angeles County, multiple state agencies, nonprofit organizations, and community members.

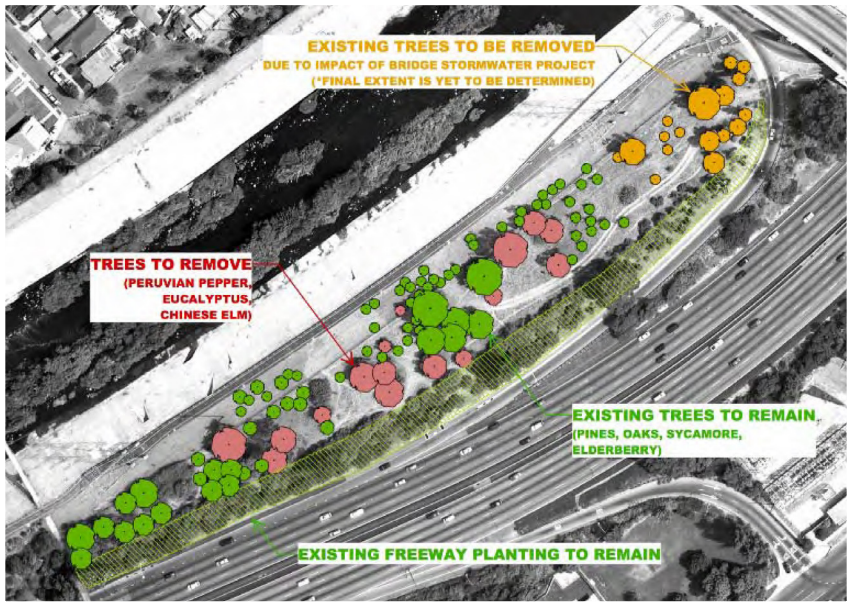
Figure 3 - 35: *Sunnynook River Park's natural trails were dedicated to Lewis MacAdams, a major figure in the revitalization of the LA River.*

Credit: Andrew Pasillas

Table 3 - 10: Partners that supported the development of Sunnynook River Park
Partners
City of Los Angeles Bureau of Engineering Architectural Division (project lead)
City of Los Angeles Bureau of Engineering River Project Office
City of Los Angeles Department of Recreation and Parks – Operations and maintenance
City of Los Angeles Department of Transportation – River bikeway and maintenance
City of Los Angeles Bureau of Sanitation – Design of water quality best management practices
National Park Service – De Anza National Trail signage
County of Los Angeles
Other project stakeholders and beneficiaries include:
The communities of Atwater Village, Silver Lake, Los Feliz, Elysian Valley
LA River bike path users
Greater Griffith Park Neighborhood Council
Atwater Village Neighborhood Council
Friends of Atwater Village
Friends of the Los Angeles River
North East Trees

The BOE and Councilmember Tom LaBonge presented initial proposals for the Park's design and function to community stakeholders for their feedback. Neighbors opposed removing non-native trees from the site and were concerned that the site's semi-secluded location and occasional homeless population could increase the potential for vandalism and crime. BOE incorporated their feedback and refined the Park's design to address the community's safety concerns and to preserve the trees. This was a compromise because LARRMP calls to transition sites along the LA River to all-native vegetation and habitat. The final park design plan involved the planting of new native trees as well as the preservation of 100 existing trees. The non-native trees saved are not invasive and cannot reseed.

Figure 3 - 36: *Diagram indicating which trees were to be kept or removed, based on community feedback.*



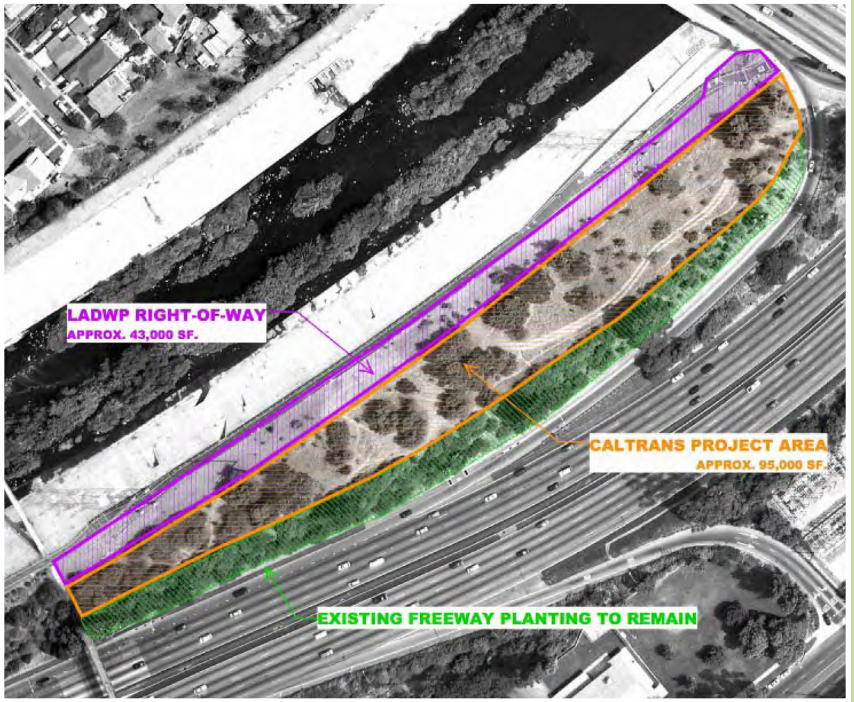
Credit: City of Los Angeles Bureau of Engineering

Site Selection and Design

Located in the City of Los Angeles neighborhood of Atwater Village, the site was chosen as a way to utilize publicly-owned land and to connect local transportation networks. The 5-acre site has two property owners: the California Department of Transportation (Caltrans) owns four acres of an easement adjacent to Interstate 5 and the City of LA Department of Water and Power (LADWP) owns a one-acre transmission line corridor adjacent to the River.

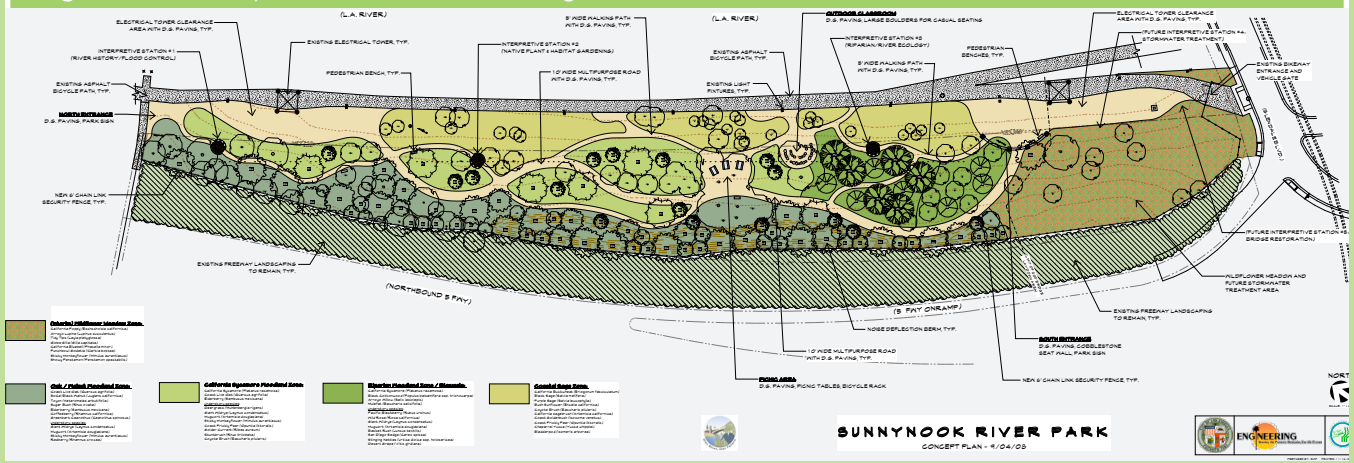
Sunnynook River Park was projected to serve up to 100,000 annual visitors. It was imagined to be an important connection between the LA River and Griffith Park, one of the largest municipal parks in the nation. Continuing in either direction along the LA River bike path, the Park also connects to several other parks, including Rio de Los Angeles State Park, North Atwater Park, Marsh Park (also featured in this Chapter), and the future Taylor Yards. With the improvements proposed for the Glendale-Hyperion Viaduct Complex, plans for Sunnynook also included complementary development strategies, and improved bike and pedestrian connections to the Glendale-Hyperion Bridge. This demonstrates that LA River revitalization can support progressive multi-use transportation projects.

Figure 3 - 37: *Diagram of the site's ownership and jurisdictional boundaries.*



Credit: City of Los Angeles Bureau of Engineering

Figure 3 - 38: *Sunnynook River Park's final design.*



Credit: City of Los Angeles Bureau of Engineering

Figure 3 - 39: *Interpretive signage and cobblestone seating overlook the LA River.*

Credit: Andrew Pasillas

Figure 3 - 40: *The picnic and community gathering area provides seating and bike parking underneath large pine and native woodland trees.*

Credit: Andrew Pasillas

Figure 3 - 41: *Sunnynook's outdoor classroom provides large boulders for seating.*

Credit: Andrew Pasillas

As a park space, the primary objective was to create an attractive, useful area for passive recreation activities. Therefore, walking trails, picnic areas, seating and educational amenities, including an outdoor classroom and interpretive signage, were integrated into the narrow site. The Park's designers also considered how best to balance users' needs. For example, bicyclists and runners have varying speed and surface needs. In addition, the designers had to ensure clearance around electrical towers, as well as provide convenient park entrances and protected zones for bike path rest areas with seating and bike racks. Because developments on LADWP property are subject to strict safety requirements, all aboveground construction, including hardscape improvements such as seat walls, irrigation equipment, and tall vegetation, were located on Caltrans property.

Located at trailheads, interpretive signage describes park features, the evolution of the LA River, and the local ecology. Meandering over the length of the Park, trails move between different habitats and converge in the center. The outdoor classroom and picnic benches are located next to each other to draw in visitors and centralize the Park's social programming. With easy access to the bike path, these spaces represent the heart of the Park, promoting community gatherings and LA River-specific activities in a unique outdoor space.

The Park's designers used natural materials for built elements, such as decomposed granite walking trails, cobblestone masonry walls with seating, and large boulders for the outdoor classroom's seating. Landscape architects focused on preserving the existing mature native trees on-site while planting native vegetation that would self-perpetuate and restore the varied and complex woodland and riparian habitats along the river. Native plants, selected from the County's Los Angeles River Master Plan's Landscaping Guidelines and Plant Palettes, were incorporated into the design. They require less intensive maintenance and have little-to-no irrigation requirements.

Sunnynook River Park also provides storm water management and mitigates the impact of contaminated runoff from Interstate 5 through simple landscaping strategies. The BOE considered the shape, topography, and use of the site during the design process to ensure that there would be no future issues with irrigation or storm water runoff. With limited space and the prominent location of the bike path through the Park, there was a risk that unsafe surface conditions and storm water drainage infrastructure could negatively impact bicyclists. To address this, the site was contoured to collect storm water in shallow depressions, similar to bioswales. It directs flows away from the bike path, vegetation filters out debris and contaminants, and then the water infiltrates into the ground and LA River.

Figure 3 - 42: *Walking trails with rest areas adjacent to the LA River bike path.*

Credit: Andrew Pasillas

Varying the topography and water collection at the site provided areas for different habitats and environmental mitigation. At the south end of the site, a wildflower meadow occupies what will become the future storm water treatment area for the Glendale-Hyperion Viaduct Complex. With heavy Interstate 5 traffic along the western edge of the site, the Park utilizes tree coverage and berms, or small hills, to improve air quality and mitigate sound pollution. Trees help to filter particulates out of the air and reduce and/or deflect noise pollution with its foliage. Noise is also deflected by berms at the other ends of the site. While avoiding densely vegetated and obscured areas for security reasons, the edge of the site was planted with Southern California Black Walnut and Coast Live Oak, maximizing the tree canopy to filter particulates.

Figure 3 - 43: *Different spaces throughout the Park support native habitats and improve local environmental quality.*

Credit: Andrew Pasillas

Cost and Funding

The total cost to develop Sunnynook River Park was $1.7 million. Construction cost $636,000 or $4.30 per square foot. This was below BOE's estimated cost and $18.70 to $41.70 per square foot less than the typical unit cost for constructing "passive open space" as defined by LARRMP. The project demonstrates that by being resourceful, high-quality open space can be created for many user groups at a relatively low cost.

Typically, before a project can begin the financing process, the site use must be secured with the proper title, lease, and/or use agreement. However, as a City-led project, funding for it was in place prior to the negotiation of use agreements. This happened because discussions were between government agencies, and the agreements drafted in-house. The City applied for and received funding from local entities and state agencies.

Funding included a $1.35 million grant from the Santa Monica Mountains Conservancy and the Mountains Recreation and Conservation Authority to develop the Park under Proposition 84, Bonds for Flood Control and Water Supply Improvements (2006). It was eligible because it was consistent with LARRMP implementation guidelines, and would improve water quality through BOE's Integrated Resources Plan and Water Quality Master Plan.

The state grant funds were to be reimbursements, requiring that all project costs be funded by the City upfront. BOE requested and were awarded a loan from the City of LA Public Works Trust Fund to address the cash flow issue. Without these initial funds, the project could not have moved forward. Project proponents developed timelines and implementation schedules, to ensure that major costs would be covered at the appropriate time.

In addition, the California State Resources Agency and California Transportation Commission awarded $350,000 for the development under the Environmental Enhancement and Mitigation Program, which awards grants to projects that mitigate environmental impacts caused by new or renovated transportation facilities. The Park was eligible for those funds because it proposed to mitigate storm water coming from the proposed Glendale-Hyperion Bridge Improvement project as well as the environmental impacts of Interstate 5 by using an expanded tree canopy to buffer particulates, by capturing and infiltrating on-site storm water, by utilizing native trees, and by restoring native habitat.

Permitting and Use Agreements

Designed in-house by the City of LA, no formal outside review was necessary for Sunnynook River Park's construction. However, the project did require use agreements with the site's two landowners, Caltrans and LADWP. As with most LA River greenway development projects, this step was the most complex and difficult. A condition of the use agreements was the approval of all proposed design and construction plans by the owner of each site. All construction documents were submitted to both agencies for review and comment early in the process.

Although Caltrans enforces strict landscaping requirements for department-owned land, their restrictions were eventually waived in return for the City Department of Recreation and Parks' commitment to assume full responsibility for future maintenance, operations, security, and liability of the Park. In August 2009, after more than a year of negotiations, Caltrans approved a 30-Year Maintenance Agreement with the Department of Recreation and Parks, with no payment required. Two years later, LADWP Commissioners approved a 30-Year Lease Agreement with the Department for $1 per year for the first five years. A fee for the following 25 years will be negotiated every five years.

Upon receiving LADWP's approval for use, the Park's design was finalized. As a public works project, the construction contract had to be competitively bid. The Request for Bids was released in early 2012, soliciting eight proposals ranging from $548,000 to $835,000. That year, the LA Board of Public Works awarded the contract to the lowest bidder, Pima Corporation.

Pima began construction in July 2012, and implementation went smoothly and quickly. The Park is relatively small and required no large-scale construction. To address issues with vandalism and theft, Pima and BOE secured the site by asking local residents to keep watch over the site when crews were not working. Construction was completed in six months. Trees and plants were established for an additional six months.

Figure 3 - 44: *Sunnynook River Park utilized publicly-owned land to create open space and improve local environmental quality.*

Credit: Andrew Pasillas

Operations and Maintenance

As per their agreements with Caltrans and LADWP, the City Department of Recreation and Parks assumed responsibility for operations and maintenance of Sunnynook River Park as a component of their 50 Parks Initiative—an effort to provide open space to diverse communities within the City. They are to properly maintain and secure the site, while ensuring that the Park and its irrigation equipment operate as intended.

No drinking water fountains were provided on-site to avoid costly upkeep, and to discourage long-term encampments in the Park—an issue on the site in the past. To ensure the use and enjoyment of all users, the Department of Recreation and Parks and BOE tried to reduce or modify areas prone to unintended use. They removed concealed spaces and dense brush to improve visibility, and used graffiti-resistant sign coverings.

By creating pockets for water collection, and by implementing a separate irrigation zone for more water-intensive riparian habitats, the Department of Recreation and Parks focuses its efforts on maintaining more sensitive areas of the Park and as-needed care for the drought-adapted areas. With the ability to manage irrigation for particular zones, water usage is tightly controlled and consumption dramatically lowered.

CASE STUDY #3
Maywood Riverfront Park

Maywood Riverfront Park transformed six industrial sites into a 7.3-acre oasis in one of the most densely populated and park-poor portions of Southern California,[2] an area crisscrossed by railroad tracks and former brownfields. The development of Maywood Riverfront Park is an important example of how to transform brownfield sites into multi-benefit parks for underserved, lower-income communities of color.

Maywood Riverfront Park, which at the time doubled the City of Maywood's amount of public open space, now offers walking paths, shaded picnic areas, restrooms, parking, lighting, public art, and a state-of-the-art playground. Bicyclists, joggers, and pedestrians can now access the bike path along the LA River. Extensive trees, native landscaping, and a riparian dry creek serve to improve water quality and other local environmental conditions.

Figure 3 - 45: *Community members picnicking in Maywood Riverfront Park.*

Credit: Rich Reid, The Trust for Public Land

Figure 3 - 46: *Maywood Riverfront Park provides the community with vital park space.*

Credit: Rich Reid, The Trust for Public Land

2 Santa Monica Mountains Conservancy. Maywood Riverfront Park. (Accessed March 18, 2016) http://www.lamountains.com/parks.asp?parkid=648)

Origins, Goals, and Timeline

In the late 1990s and early 2000s, many underutilized and vacant industrial sites existed in the small 1.13 square-mile City of Maywood. The city was also defined by the state as a "critically underserved community" because of a severe lack of public parkland.

To address this need, The Trust for Public Land, in partnership with the City of Maywood, initiated the effort to transform six brownfield sites into a public park.[3]

The complex development project started in 1997 and the Maywood Riverfront Park opened to the public in 2008. The timeline was significant in large part because of the extensive remediation of one of the six sites, under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 or Superfund. Another site was moderately contaminated; remediation was the responsibility of the previous land-owners. Some portions of the site are still being remediated to further improve local environmental quality and to increase park space.

The remediation of industrial sites along the LA River has not only improved local environmental health conditions, but has also given the local community a new park and access to the river and its bike path. The Park is vital green space, which helps to reduce the area's urban heat island effect and buffer the neighborhood from freeway sound and air pollution.

Figure 3 - 47: *Former industrial sites being cleared for the development of Maywood Riverfront Park.*

Credit: The City of Maywood

Table 3 - 11: Maywood Riverfront Park development timeline

Date	Milestone
1997	The Trust for Public Land begins site acquisition.
1999	U.S. Environmental Protection Agency (EPA) places the Pemaco site on the Superfund National Priorities List.
2000	Maywood City Council approves development of the proposed Park. EPA conducts site analysis and begins remediation planning on Pemaco site.
2002	Human health risk assessment completed by T N & Associates, Inc. Remedial investigation completed by EPA, and Environmental Impact Report prepared by Willdan for City of Maywood.
2005	Final remedy for Pemaco remediation selected by EPA in consultation with community members. City of Maywood begins park construction.
2006	Construction complete. Park opening delayed for additional remediation.
2007-2008	EPA implements final site remediation and additional safety measures.
2008	Park grand opening.

3 Kjer, Tori, and Mark, Robin. The Trust for Public Land. Personal interview. July 15, 2015; August 3, 2015; September 25, 2015

Project Proponents and Community Collaborations

The development of Maywood Riverfront Park was a multi-phased, multi-stakeholder project coordinated by the City of Maywood's Planning Division. As the project lead, the City managed the development process and secured funding for land acquisition, construction, and long-term operations and maintenance. The City partnered with The Trust for Public Land (TPL), Mountains Recreation and Conservation Authority (MRCA), Center for Creative Land Recycling (formerly known as the California Center for Land Recycling), California Regional Water Quality Control Board (Regional Water Board), and U.S. Environmental Protection Agency (EPA) to jointly acquire, remediate, and develop the Park. With so many participating organizations, communication between partners was critical.

TPL, a nonprofit organization dedicated to preserving open space and creating parks nationally, initiated the project's development and was the primary organization responsible for acquiring and assembling sites. After identifying the need for parks in the underserved industrial area, TPL identified funding opportunities for the City, conducted site inspections and assessments, acquired the land, and proposed that the Park be developed as an element of the broader LA River greenway effort.

TPL partnered with the Center for Creative Land Recycling (CCLR) to strategize the best way to revitalize the brownfield sites and create park space along the LA River. CCLR provided financial and technical assistance to evaluate environmental conditions and the viability of the most contaminated sites. MRCA also served as a partner in acquisition, funding, and park development.

Figure 3 - 48: *The stretch of LA River and industrial land uses that run along Maywod Riverfront Park.*

Credit: Rich Reid, The Trust for Public Land

The City began planning Maywood Riverfront Park in the year 2000. This involved working with the EPA to begin coordinating the long process of cleaning up the Pemaco site, under Superfund. Remediation occurred before, during, and after construction of the Park.

Community engagement was an important part of the park development process. Building trust between project proponents and the community was necessary. All parties needed to provide the public with accurate information on a regular basis. Community discussions were especially important for this project because

development involved a contaminated Superfund site and therefore, public health risks. The City and EPA facilitated community dialogues to address public safety concerns and seek feedback through different approaches. For example, EPA held bilingual community meetings and provided regular updates to the community regarding site testing and construction. City planners conducted extensive outreach, knocking on the door of every residence near the sites and welcoming continued communication.[4] This grassroots, personal outreach was important to build trust and community involvement, since many residents were not accustomed to speaking at large community meetings. It also demonstrated to community members the Park proponent's commitment to the project.

Site Selection, Remediation, and Design

The location of Maywood Riverfront Park, starting at the Slauson Avenue Bridge and extending south to East 60th Street, is an important local and regional cornerstone of Los Angeles River revitalization efforts. The sites that make up the Park were identified as priorities for public open space due to their location along the LA River, ability to provide access to the bike path, as well as the surrounding community's density and need for open space and recreation opportunities.

Identifying suitable park sites was difficult because Maywood is a small city with limited suitable site options. In addition, the project size required piecing together multiple sites. The following six adjacent industrial sites with varying conditions, occupancies, and ownership statuses were ultimately identified: Pemaco, W.W. Henry, LA Junction Railroad Property, Precision Arrow, Lubrication and Oil Services, and Catellus.

4 Gonzalez, Julia. Former City Planner for the City of Maywood. Personal interview. September 4, 2015.

Figure 3 - 49: *Gates designed by Brett Goldstone lead visitors to and from the LA River.*

Credit: Rich Reid, The Trust for Public Land

Figure 3 - 50: *Sites selected for Maywood Riverfront Park development.*

Credit: The City of Maywood

Securing these six sites for use as a public park was complicated for several reasons. To acquire the sites, TPL had to negotiate with many landowners, some of whom were not initially willing to sell (LA Junction Railroad Property) or had abandoned their property and were hard to find (Pemaco). Despite the challenges, TPL acquired five sites on behalf of the City; the City acquired the sixth property, LA Junction Railroad Property, at a later date.

Due to the sites' previous industrial uses and potential for contamination, TPL also worked with the City of Maywood, the EPA, and other regulatory agencies to obtain liability releases and ensure site remediation took place where necessary. Environmental consultants were employed to test for potential soil and water contamination at the sites. Remediation strategies were designed and implemented for the two sites found to be contaminated: Pemaco and W.W. Henry. Pemaco was a Superfund site and remediation was the responsibility of the EPA. The W.W. Henry site's remediation was the responsibility of the previous landowner.

EPA assumed responsibility for remediating the Pemaco site, a former chemical mixing facility abandoned in 1991. Due to public health concerns related to chemical drums and buried storage tanks, EPA conducted an emergency site clean-up in 1993 to remove materials that posed an immediate risk. In 1997, EPA conducted actions to determine the extent of the contamination, and placed the site on the Superfund National Priorities List in 1999. The EPA was responsible for remediating contaminants associated with the Superfund site. The EPA provided a Prospective Purchaser Agreement to protect both TPL and the City of Maywood against future liability of any migrated contamination. The W.W. Henry site was also determined to be contaminated and required groundwater remediation, for which the previous landowner was responsible in coordination with the Regional Water Board (for perched groundwater) and the EPA (for deep groundwater).

Design

The design of the 7.3-acre Maywood Riverfront Park sought to accommodate a wide variety of users and maximize community benefit. Accordingly, it includes large open spaces and multiple recreational amenities, like trails and handball courts. Project proponents—including the design consultant, AAE Inc., and agencies responsible for site analysis and remediation—considered where and when aspects of the Park would be developed based on each site's condition and the phased remediation efforts, especially for the Pemaco and W.W. Henry sites.

Figure 3 - 51: *Preliminary design of Maywood Riverfront Park.*

Credit: The City of Maywood

The Park was built in several phases. Because developing Maywood Riverfront Park was going to take several years, representatives from MRCA and the City signed a Memorandum of Understanding to create a 0.67-acre interim park on the Catellus site while the other five sites were undergoing acquisition negotiations, environmental review, and clean-up. Completed in 2005, the small park was used extensively by residents and bike path users. This inspired a large show of support for the development of the larger park from elected officials and many other local stakeholders. Also, designers and project leads were able to verify who would use the future Park and reassess the value of proposed designs.

Meanwhile, the EPA and Regional Water Board regularly provided the development team with information on what type of clean-up was taking place or was planned on each site,[5] helping inform the design. For instance, the design team included walking paths and handball courts that allowed for remediation infrastructure, such as wells capped with concrete boxes, to be seamlessly incorporated into the design.

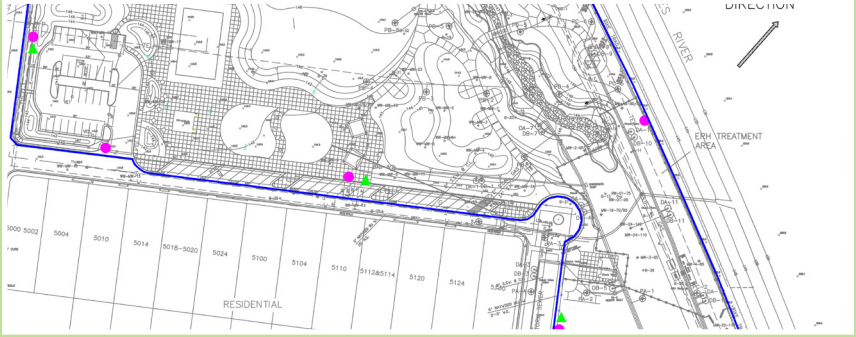
Figure 3 - 52: *Aerial view showing the location of clean-up areas.*

Credit: U.S. Environmental Protection Agency

5 Caraway, Rose Marie. Environmental Protection Agency. Personal interview. September 16, 2015; September 25, 2015

The final design for Maywood Riverfront Park includes trails, picnic areas, basketball courts, event spaces, restrooms, parking, lighting, and a state-of-the-art playground for local children. The community also requested, and project proponents delivered, a park with dozens of trees that serve as a visual, sound, and air quality screen from surrounding roadways. To improve local habitat and water quality, the park also includes native vegetation and a dry creek bed that captures storm water.

Figure 3 - 53: *Final design for Maywood Riverfront Park.*



Credit: The City of Maywood

Figure 3 - 54: *Walking paths winding between picnic benches and an open play field.*

Credit: Dore Burry

Project proponents worked to include public art in the final design. At the northwest corner of the Park, a sculpture plaza now welcomes visitors. At the eastern edge, a stone and steel gate, designed by Brett Goldstone, invites the community, visitors, and bike path users to the LA River and the Park. Designed with the community's concerns and interests in mind, Maywood Riverfront Park provides important local improvements as well as regional benefits.

Figure 3 - 55: *A pedestrian bridge extends over a dry creek bed, which collects storm water and filters it back into the LA River.*

Credit: Rich Reid. The Trust for Public Land.

Figure 3 - 56: *The Park provides a safe and exciting playground for local children.*

Credit: Dore Burry

Cost and Funding

Developing Maywood Riverfront Park cost approximately $10.5 million, of which $5.9 million was used for site acquisition. To acquire and develop the Park, the City applied for funding from county, state, and federal grant programs focused on creating park space for underserved, urban communities. This strategic grant focus helped direct staff's efforts and limited resources.

In 2000, the City applied for and received Proposition 12 and Proposition A funds to acquire the sites and begin the Park development process. This includes $2.4 million under the Murray-Hayden Program and $1.8 million from the LA County Regional Park and Open Space District. Proposition 12 (the Safe Neighborhood Parks, Clean Water, Clean Air, and Coastal Protection Bond Act of 2000) allocated $100 million to the Murray-Hayden Program to distribute funds to public agencies and community-based organizations to acquire, develop, and rehabilitate areas located in underserved, park poor neighborhoods. Proposition A (the Safe Neighborhood Parks Act of 1992) provides funding for the acquisition and rehabilitation of land for parks and open spaces. These funds enabled project proponents to acquire the sites and complete an early design plan. This put them in a good position to apply for and receive greater financial support. In 2001, the LA County Regional Park and Open Space District awarded the City an additional $1.6 million under Proposition A to acquire the sixth site (LA Junction Railroad).

As mentioned above, MRCA developed a small, interim park on the Catellus site. This attracted broad attention and helped justify the City's requests for more funds to develop the larger park. In 2005 and 2006, the LA County Regional Park and Open Space District awarded the City two more grants, in the amounts of $2.15 million and $350,000, to help complete the development of Maywood Riverfront Park.

In addition to the Park acquisition and development costs, site clean-up was a large, additional expense. The EPA estimates that they spent $40 million between 1996 and 2011 on the Pemaco site remediation, operations, maintenance, sampling, and reporting. The total cost of the W.W. Henry site remediation, which was undertaken by the previous property owners, is unclear. The other four sites, which had negligible contamination, were cleaned up using City grant funding.

Permitting and Use Agreements

Obtaining the necessary permits and use agreements was a challenge because of the former industrial uses at each site, and contaminated groundwater at two of the sites. This required different levels of mitigation before the project could be permitted by the City of Maywood, Los Angeles County, and several federal agencies.

After remediation, the EPA and the Regional Water Quality Control Board determined that the Pemaco and W.W. Henry sites were safe for public use. The City then released a public bid for construction. Pima Corporation was awarded the contract and broke ground in August of 2005. Some sites were still being remediated while others were being developed. This required extensive agency cooperation and communication. Pima Corporation continued to conduct health and safety checks, as well as monitor water, soil, and air quality to comply with permitting requirements.

In 2006, the Park was complete. However, community concerns about public health delayed its opening for another two years while EPA conducted additional remediation. Maywood Riverfront Park officially opened to the public on May 10, 2008. The celebration included mariachi music, food, and art.

Table 3 - 12: Some of the permits and assessments required to develop Maywood Riverfront Park

Requirement	Agency
Environmental Remediation/Monitoring	U.S. Environmental Protection Agency
Public Health Assessment	California Dept. of Toxic Substances and Control
Environmental Impact Report – California Environmental Quality Act (CEQA)	Governor's Office of Planning and Research, California State Clearinghouse
S Permit - Storm Drain Connection	Los Angeles County Flood Control District
MS4 Permit - National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity, Water Quality Order 99-08-DWQ	Los Angeles County Flood Control District
Rule 1166 Permit for Volatile Organic Compound Emissions from Decontamination of Soil	South Coast Air Quality Management District
Rule 403 Permit for Fugitive Dust	South Coast Air Quality Management District

Figure 3 - 57: *Maywood Riverfront Park during and after construction.*

Credit: The City of Maywood

Figure 3 - 58: *East side of Maywood Riverfront Park, along the LA River.*

Credit: Dore Burry

Operations and Maintenance

The City's Parks and Recreation Department is responsible for the operations and maintenance of the Maywood Riverfront Park. It is in charge of all general maintenance duties, including landscaping care, general upkeep, and trash collection, as well as ensuring the function and quality of the different amenities on site, such as the public restrooms and playground equipment.

Next Steps

The southern portion of the sites is still being remediated by EPA and may be developed into an additional 2.5 acres of park space. This would double Maywood's riverfront access to approximately 900 feet along the greenway. An end date for the clean-up process is not yet known.

GUIDANCE: LESSONS LEARNED AND BEST PRACTICES

This section provides an overview of considerations and implementation strategies applicable to developing parks along the Los Angeles River greenway. The projects featured in this chapter represent a range of park scales and approaches to creating open space along the LA River. One commonality between them is that extensive coordination and collaboration with community members, organizations, and agencies were critical to success. No entity can do it alone, and no single goal can be realized without the input, help, and approval of many different parties.

Using these stories as models, this guidance section highlights important opportunities and challenges presented at each stage of project development, to help readers understand what to expect when trying to provide equitable park access for all.

Figure 3 - 59: *A view of the LA River and bike path from Marsh Park.*

Credit: Meléndrez

Table 3 - 13: Summary of the case studies and their key defining characteristics				
	Cudahy River Park	Marsh Park Phase II	Sunnynook River Park	Maywood Riverfront Park
Summary	Converted a small, 0.25- acre vacant residential lot into native riparian habitat with an innovative water quality improvement system	Transformed former industrial site into a 3.4-acre multi-phase, multi-benefit park using community-driven designs	Connected the River greenway to Griffith Park by converting 5 acres of underutilized public space owned by multiple agencies into a park with native habitat and nature trails	Cleaned up and transformed brownfield and Superfund sites into a 7.4-acre multi-benefit park in a severely underserved community
Project Lead	North East Trees (nonprofit)	Mountains Recreation and Conservation Authority (local government)	City of LA Department of Public Works Bureau of Engineering Architectural Division (local government)	City of Maywood Planning Division (local government)
Partners	City of Cudahy	Meléndrez, Santa Monica Mountains Conservancy	LA Department of Recreation and Parks, City of LA Department of Public Works Bureau of Engineering River Project Office	The Trust for Public Land, Mountains Recreation and Conservation Authority, Center for Creative Land Recycling, CA Regional Water Quality Control Board, U.S. Environmental Protection Agency
Location	City of Cudahy, corner of River Road and Clara Street	City of LA, Elysian Valley	City of LA, Atwater Village	City of Maywood, south of Slauson Avenue Bridge
Users	Local community, bike path users	Local and surrounding communities, bike path users	Pedestrians, cyclists, equestrians, local and surrounding communities	Local and surrounding communities, bike path users
Cost	$378,000 for design and construction; site acquisition cost unknown	$8 million: $3.6 million for site acquisition and $4.4 million for design and construction	$1.7 million: $636,000 for construction	$10.5 million: $5.9 million for site acquisition. EPA spent $40 million for one site's remediation
Funding	Proposition A - SD1, Proposition 50, Rivers and Mountains Conservancy	Proposition 84, Proposition A, Proposition 13, Santa Monica Mountains Conservancy	State Environmental Enhancement and Mitigation Program, Proposition 84, Santa Monica Mountains Conservancy	Proposition A, Proposition 1, Environmental Protection Agency
Completed	2009	2014	2013	2008

Table 3 - 14: Lessons learned: summary of challenges and strategies to overcome them		
Development Process	Challenges	Solutions
Motivation	Identifying multiple user groups and needs; not every neighborhood is outspoken about park needs Community, funding, and project goals may be different	• Be proactive in identifying areas that lack parks • Spend time in the community, speaking to leaders and potential users to identify specific needs • Talk with all stakeholders and project partners to understand and best integrate goals
Community Engagement	Some stakeholder groups can be hard to reach Sustaining outreach and engagement throughout the development process	• Allocate sufficient time and resources for community outreach and community engagement • Partner with experts and/or seek grants that reward authentic community engagement • If possible, involve the public at all major project stages
Physical sitting	Sites available for LA River-adjacent park development may be limited Previous industrial use on brownfield sites may require clean-up, remediation, and/or use limitations Acquiring and obtaining use agreements	• Be creative when considering potential park sites; small, narrow and unusually shaped lots can be good options • Identify and meet with site owners early in the process to establish goals, expectations, and concerns • Conduct due diligence and site assessments to determine suitability for park use
Design	Satisfying multiple user groups Design may be limited by remediation, site conditions, and/or permitting Materials used may impact maintenance requirements and costs	• Engage with community members to seek feedback on aesthetic preferences and amenities • Establish realistic project goals with community members and other collaborators • Meet with permitting agencies to understand requirements early in the process • Use materials that reduce the need for maintenance (like anti-graffiti paint)
Cost	Unforeseen site conditions (like utility connections) and permitting can increase costs Site clean-up and remediation can significantly increase costs	• Anticipate possible project delays by scheduling extra time and setting aside extra funds • Assess site conditions and potential clean-up needs as early as possible
Funding	Securing funding Project design, site acquisition, and use agreements may need to be secured before applying for grants Funders often have strict guidelines and timelines	• Consider funding possibilities when developing project goals and implementation strategies • Engage and seek to partner with potential funders early on • Coordinate closely between funding, design, and implementation plans

Table 3 - 14: Lessons learned: summary of challenges and strategies to overcome them (cont. from previous page)		
Development Process	Challenges	Solutions
Permitting and Use Agreements	Permitting process and agency requirements can be complex and difficult to navigate Multiple jurisdictions and requirements require negotiation and potential changes in project design Acquiring and obtaining use agreements	• Meet with permitting agencies early in the process and ask questions • Partner with or seek advice from those with experience working with permitting agencies • Meet with property owners early in the process
Operations and Maintenance	Identifying a responsible agency and sustainable funding Site design and construction material can impact operations and maintenance	• Consider operations and maintenance early in the project development process • Identify which entities have the experience and/or capacity for long-term maintenance • Identify funding sources for maintenance early in the process

How do I lay the foundation to successfully develop a park along the LA River?

Parks can be developed in many forms and serve many different purposes. Therefore, effort must be placed on defining achievable project goals and identifying development priorities and limitations. Park projects can be complex, multiple-stage processes requiring project teams to understand their organizational capacity, create strong partnerships, facilitate open communication among partners and stakeholders, and incorporate community feedback into the development process. Defined goals and implementation strategies should be focused, yet flexible in order to adapt to changing circumstances and requirements.

Goals, Motivation, and Timeline

The motivation to develop a park, small or large, most often comes from a community's need for open space and increased recreation. This is coupled with an opportunity to transform underutilized land into a public amenity. It is important that community members and other local stakeholders help drive project goals. The intended users of a park are best able to know what will bring local residents to it. Stakeholders are those whom may be impacted by or benefit from a local park, including residents, adjacent property owners, students at nearby schools, regional bike path users, business owners and workers, LA River advocacy organizations, elected officials, and others.

Figure 3 - 60: *A goal of the Maywood Riverfront Park was to provide a safe place for local children to play.*

Credit: Rich Reid, The Trust for Public Land

Along with public feedback, future park projects should consider existing plans, such as the Los Angeles River Revitalization Master Plan, to direct project goals within both a local and regional context. All of our featured park projects were driven by the goal of providing new or revitalized parks for underserved, park-poor communities to recreate and access the LA River. Parks in highly urbanized communities with dense industrial use, heavy storm water runoff, and pollution should include environmental improvement and mitigation strategies.

Communities with vacant or unused land, particularly brownfield sites and public right-of-ways, offer opportunities for park development. Developing small, multi-benefit "pocket" parks can be a good way to satisfy community goals when property and funding are limited. For example, Cudahy River Park demonstrates how developing a small park at low cost can significantly improve storm water management and provide local residents with the opportunity to interact with the natural world and specifically, the LA River.

Figure 3 - 61: *Cudahy River Park was built on this vacant site where Clara Street and the LA River bike path meet.*

Credit: North East Trees

Leadership and Collaboration

A high level of organizational capacity, including staff expertise and resources, is required to spearhead park development processes. Lead organizations should honestly assess their qualifications and collaborate with agencies, organizations, elected officials, and consultants that complement their expertise. For example, the development of Maywood Riverfront Park was coordinated by the City of Maywood's Planning Division and supported by many partners. The Trust for Public Land initiated the project's development and was the primary organization responsible for acquiring and assembling sites; the Center for Creative Land Recycling provided financial and technical assistance to evaluate environmental conditions and the viability of brownfield sites; the U.S. Environmental Protection Agency (EPA) led remediation efforts on the Superfund site; etc.

When there is a gap that a partner cannot fill, project leads can consider hiring consultants to do specific tasks. For instance, to develop Marsh Park Phase II, the Mountains Recreation and Conservation Authority (MRCA) hired consultants to assist with community outreach, park design, and the environmental review process. It is important to include professionals that have the applicable expertise and experience in working through these types of projects.

Collaboration is especially important when securing use agreements and permitting approvals. These processes rely heavily on technical documentation, include complex jurisdictional and legal negotiations, and require coordination between multiple agencies, departments, and individuals. While numerous partnerships can slow decision-making, they may also allow for the development of larger, more ambitious park projects and may increase the competitiveness of grant applications. All project partners should identify their responsibilities early in the process and create systems for exchanging information between themselves and with the public.

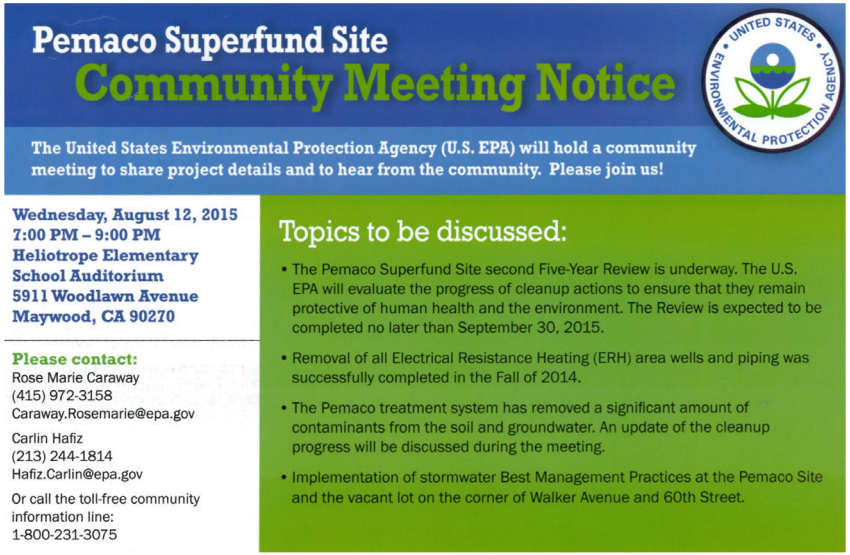
Community Engagement

Park projects serve as an opportunity for community empowerment through meaningful contributions to park visioning, design, development, and maintenance processes. Given the scope and scale of LA River park projects, most are coordinated by non-profits and/or government agencies with significant capacity and past experience in park development. But this does not mean that the project cannot be community driven. Although community engagement can be time consuming, there are many benefits. Involving the community early in the process can provide critical support to drive a project forward and early community support for a project can help avoid project delays at later stages. Local residents who know the area can also provide important perspectives on how to design a project to maximize community benefit and avoid or address potential unintended consequences associated with it.

Project leads should strive to identify all stakeholders, user groups, and beneficiaries, and include them in the development process. To begin, consider potential project limitations, like budget, to direct engagement efforts and manage expectations. Presenting preliminary designs may facilitate constructive dialogue by giving community members something on which to build.

It is important to tailor your engagement strategy for each specific community. For example, to solicit public input on the development of Maywood Riverfront Park, EPA held numerous bilingual neighborhood meetings to discuss site remediation and City of Maywood staff knocked on the door of every residence within a couple of blocks of the site. This grassroots and personal outreach was important to build trust and community involvement because many residents were not accustomed to participating in public processes or speaking at large community meetings.

Figure 3 - 62: *A Flyer announcing a community meeting related to development of the Maywood Riverfront Park.*



Pemaco Superfund Site

Community Meeting Notice

The United States Environmental Protection Agency (U.S. EPA) will hold a community meeting to share project details and to hear from the community. Please join us!

Wednesday, August 12, 2015
7:00 PM – 9:00 PM
Heliotrope Elementary School Auditorium
5911 Woodlawn Avenue
Maywood, CA 90270

Please contact:
Rose Marie Caraway
(415) 972-3158
Caraway.Rosemarie@epa.gov

Carlin Hafiz
(213) 244-1814
Hafiz.Carlin@epa.gov

Or call the toll-free community information line:
1-800-231-3075

Topics to be discussed:

- The Pemaco Superfund Site second Five-Year Review is underway. The U.S. EPA will evaluate the progress of cleanup actions to ensure that they remain protective of human health and the environment. The Review is expected to be completed no later than September 30, 2015.
- Removal of all Electrical Resistance Heating (ERH) area wells and piping was successfully completed in the Fall of 2014.
- The Pemaco treatment system has removed a significant amount of contaminants from the soil and groundwater. An update of the cleanup progress will be discussed during the meeting.
- Implementation of stormwater Best Management Practices at the Pemaco Site and the vacant lot on the corner of Walker Avenue and 60th Street.

Credit: U.S. Environmental Protection Agency

The development of Marsh Park Phase II is an example of community-driven park design. MRCA asked residents what amenities they would like included in the park. This resulted in a park that serves many users and age groups by providing different spaces for play, quiet reflection, outdoor education, and active recreation. Specifically, local residents requested fitness stations that have turned out to be popular among users. Locals and bike path users also pointed out that there were no public restrooms for nine miles along the bike path, and MRCA responded by including this amenity. Later in the process, neighbors raised concerns about increased parking, traffic, and pollution. MRCA eased their concerns—sometimes through personal meetings with Park-adjacent property owners—by clearly communicating details about the new event pavilion and how community impacts would be mitigated by the City of Los Angeles.

Figure 3 - 63: *Fitness stations in Marsh Park were requested by the community and now are popular with park visitors.*

Credit: Meléndrez

Project Timeline

Depending on the scale and scope of a project, park development is often a long process. Accurately developing project timelines and reducing the likelihood of unexpected delays requires project leads to coordinate the design and implementation of multiple and overlapping phases of a project. The development of Maywood Riverfront Park illustrates how multiple project partners cooperated to plan and implement a shared and complex work plan and timeline for site cleanup and construction. Specifically, the team came together at the beginning of the project to set remediation, funding, and construction timelines and to determine when and how each stage would be completed. Although the project experienced long permitting and use agreement delays, project proponents used the delays to reassess and expedite portions of their implementation plans.

Timelines play a critical role in funding because of grant requirements and availability. If projects are delayed, funding may be withdrawn as per grant agreements. Anticipating delays and setbacks will help to keep projects on track and budgets in check. Permitting processes can be especially time intensive and can cause long delays. Communicating with permitting agencies early in the project, before design plans are finalized, can avoid changes to a project timeline and budget.

What are important design considerations?

Site Selection

In addition to sites identified in planning documents, such as the Los Angeles River Revitalization Master Plan, potential areas to develop parks along the LA River include unused private parcels, former industrial sites, brownfields, public utility right-of-ways and easements, existing public spaces, as well as city or county-owned properties. Small, uniquely shaped lots in underserved communities can be especially promising places for pocket parks.

When selecting a site, project proponents should consider: community need, site and surrounding site usage (legal and informal), location, ownership, existing environmental assets and concerns, site access, the presence of public utilities, and applicable regulations. Site location should help support neighborhood goals, allow for regional connectivity, and potentially promote economic improvements. For example, Sunnynook River Park connects the LA River greenway with Griffith Park and serves many communities including Atwater Village, Silverlake, and the Elysian Valley.

Figure 3 - 64: *Before Sunnynook River Park was developed, the site was unimproved public property.*

Credit: City of Los Angeles Bureau of Engineering

Sites along the LA River are likely to have a patchwork of owners and agency jurisdictions. It is necessary to clearly identify and hold preliminary meetings with those who own or have the rights to use potential project sites. Those meetings are the first step to pursuing site acquisition, use agreements, or leases to obtain control of the site. For example, project proponents had to acquire and negotiate use agreements with six site owners in order to develop Maywood Riverfront Park. Similarly, the two sites used to develop Sunnynook River Park are owned by two agencies. Each one has different standards for site use, design, and access.

Previous and current site use is important to consider both for acquisition and the suitability of using the site for public use. Project leads should take into account how surrounding residential, commercial, and industrial land uses can support or hinder park development. Sites nearby schools, commercial districts, and landmarks may warrant prioritization while sites with environmental contamination may require extra consideration on how to fully clean up a site for public use. Contamination and environmental risks should always be taken into account when considering use of brownfield sites. To move a project forward after site selection, potential risks must be identified and mitigated. To develop Maywood Riverfront Park, for example, some of the sites' previous industrial uses and contamination required The Trust for Public Land to negotiate with the former property owners; many government agencies were also involved to assess public health hazards and determine if sites were safe after clean-up and remediation. Although extensive remediation may prolong the park development process, it is critical.

In each case study, environmental conditions affected project location and design, including where amenities could or should be located. For example, mature trees may already provide shaded areas where picnic seating can be located. Local sources of pollution such as runoff, vehicular exhaust, and noise may also affect site selection and use.

Figure 3 - 65: *A bicyclist using the LA River bike path along Maywood Riverfront Park.*

Credit: Rich Reid, The Trust for Public Land

Access to the site also plays an important role when considering project locations. Site selection should prioritize locations that improve transportation corridors through examining the location of transit stops, sidewalks, bike lanes, roadways, and available parking.

The consideration of on-site utility infrastructure is also very important. Design requirements such as safe universal access, lighting, irrigation, and drinking water may require new infrastructure. However, if public utility infrastructure, such as power lines, exists on site, project leads may be required to relocate amenities or be subject to extensive regulations that limit use. This was the case for the City of Los Angeles when it was developing Sunnynook River Park. One of the sites used is owned by the LA Department of Water and Power: they require a certain amount of clearance around electrical towers and are subject to strict federal requirements to develop under transmission lines.

Figure 3 - 66: *Clearances required around power lines are creatively used for bike rest areas.*

Credit: Andrew Pasillas

Design Concepts

Park designs should be creative, flexible, and address community needs within the project budget and implementation timeline. This section underscores the importance of community involvement in the process and also highlights key considerations for site configuration, preexisting site use, user safety, environmental improvements, public art and education, and future maintenance requirements.

Successfully soliciting and incorporating public input requires continuous, robust, and open communication with community members. They often know of potential issues, like pollution and crime, as well as which amenities would be the most beneficial. The development of Marsh Park Phase II and Maywood Riverfront Park are both good examples of successfully incorporating valuable community feedback into park designs. Elysian Valley residents wanted fitness stations at Marsh Park, which have turned out to be that Park's most popular amenity. Maywood residents wanted a safe place to play for small children and students at Heliotrope Elementary School. The City of Maywood responded by creating a state-of-the-art playground, basketball and handball courts, as well as grassy fields. Citizens were also concerned about pollution from surrounding roadways, so the Maywood Riverfront Park's final design includes dozens of trees in an attempt to provide a visual, sound, and air quality screen from streets.

Figure 3 - 67: *Maywood Riverfront Park responded to community requests to provide a safe and exciting playground for local children.*

Credit: Dore Burry

Amenities

Determining how and where to put amenities depends on site conditions, land use planning requirements, building codes, and other regulations. Existing assets may also define amenity placement and programming. These include native vegetation, shaded areas, utilities, connections to transportation networks, and topography. The development of Sunnynook River Park illustrates how existing access and community feedback can direct the design process. The community was strongly opposed to removing mature, non-native trees from the site. As a result, designers incorporated the trees into the final park plans, locating social and education spaces near large trees, which utilized their inherent shade and shelter.

Recreation and Safety

Final park designs should also consider how best to provide opportunities for safe active and passive recreation. Opportunities to provide active recreation involve dedicated sports fields, equipment, and formal amenities that may require capital and maintenance costs. Opportunities for passive recreation include walking paths, open fields, and picnic areas, which often require less investment than large active recreation facilities. Project proponents must also consider user safety and security including industrial contamination, poorly lit areas, or nearby traffic. For example, Sunnynook River Park provides protected zones for bike path rest areas complete with seating and bike racks. Project designers were also careful about where they placed drainage infrastructure so it would not negatively impact bicyclists. The Park's irrigation systems and watering areas were specifically placed to operate in coordination with the site's storm water collection and infiltration areas. By localizing water distribution and drainage, rainwater is directed away from the well-traveled bike path. Each amenity should be considered for its ability to satisfy community needs, and provide safe enjoyment for all local residents, users, and beneficiaries.

Preexisting uses at the park development site, especially industrial ones, can significantly impact project design and development. For example, Maywood Riverfront Park's original design included soccer fields and rolling grass hills throughout the Park, but remediation infrastructure, including wells capped with concrete boxes, led the design team to reconsider their plan. In areas with many wells, they developed walking paths and handball courts so concrete surfaces would be seamlessly incorporated into the Park.

Environmental Benefits

Environmental improvement strategies should also be considered to provide local and regional benefits. The goals of the projects profiled in this chapter include the ecological benefits of native habitat restoration and water quality benefits of managing storm water. Specifically, the case studies provide multiple examples of implementing storm water best management practices, including creating bioswales, catchment systems, filtration basins, dry streambeds, permeable surfaces, and using native plants. For example, the City of LA Bureau of Engineering contoured Sunnynook River Park so that it would collect runoff in shallow depressions to direct and slow flows, remove debris and contaminants, and allow water to infiltrate into the ground and the LA River. The City also developed a wildflower meadow at the south end of the site to complement the storm water treatment area planned for the neighboring Glendale-Hyperion Viaduct Complex. Sunnynook River Park also addressed the City and the Los Angeles River Revitalization Master Plan's goal to restore the varied and complex local plant and animal habitats along the LA River. By creating native riparian and woodland habitats throughout the site, the Park created an opportunity to connect communities of wildlife historically divided by significant infrastructure developments such as Interstate 5. This will help gradually rebuild ecological linkages and support the LA River as an urban wildlife refuge.

Figure 3 - 68: *Example of a bioswale to capture, clean, and replenish stormwater above the LA River.*

Credit: Cameron Robertson (Marsh Park, Top); Dore Burry (Maywood Riverfront Park, Bottom)

Public Art

Many new parks and projects along the LA River include public art in their final design. Cudahy River Park features tall, custom decorative gates depicting agave plants along the Park's fence. For Marsh Park, MRCA commissioned artist Brett Goldstone to create 160 feet of decorative fencing with artistic representations of the LA River environment. At the northwest corner of the Maywood Riverfront Park, a sculpture plaza welcomes visitors.

Educational Opportunities

Project proponents should also consider how to incorporate educational opportunities, including interpretive signage, into new park designs. For example, education programming at Marsh Park Phase II introduces participants to the plants and animals in the LA River ecosystem and the importance of natural resources. Programs include classes taught by naturalists from MRCA, summer programs, a kayaking program, and others. There are organized activities for adults as well, such as bird watching and art and outdoor survival classes.

Operations and Maintenance

Maintenance and operations should also be considered during the design and budgeting phase of park development. To minimize maintenance and operation needs, Sunnynook River Park designers, for example, used graffiti-resistant sign coverings and efficient irrigation systems for native landscaping. With complex sites, multiple user interests, and diverse local needs, park project proponents can incorporate the goals of all constituents by pursuing several design strategies.

Figure 3 - 69: *Marsh Park Phase II entry gate.*

Credit: Andrew Pasillas

What are important cost and funding considerations?

Costs

To create new parks along the LA River, project proponents must develop a realistic, yet flexible budget that considers both expected and unexpected costs. The park projects that are featured here ranged in cost from less than $400,000 to more than $10.5 million dollars. The high end of that range is not representative of typical park projects but instead exemplifies a complex remediation process required to safely reuse contaminated sites. It cost $5.9 million to acquire six industrial sites to develop Maywood Riverfront Park. Design and construction cost about $4.6 million. In addition, EPA spent about $40 million to remediate industrial contamination on a Superfund site. In comparison, design and construction for Cudahy River Park cost $378,000; Sunnynook totaled $1.7 million, and Marsh Park Phase II was about $4.4 million.

The Los Angeles River Revitalization Master Plan provides guidance regarding park development costs. For example, it states in Section 10.16, that the typical unit construction cost to develop passive recreation should range from $1 to 2 million per acre, or $23 to $46 per square foot. Expected development costs include purchasing land, hiring consultants (to assist with community engagement, design, environmental reviews, etc.), permitting fees, and construction. Typically, before projects can begin the financing process, site use must be secured with the proper titles, leases, and/or use agreements. An operations and maintenance plan may need to be in place before project proponents can secure use agreements and grants. For example, in order to obtain use agreements from the California Department of Transportation and LA Department of Water and Power to build Sunnynook River Park, the City of LA Bureau Of Engineering completed design proposals and partnered with the City of LA Department of Recreation and Parks to demonstrate what was intended for the site and how it would be managed and maintained.

Funding

In most instances, park development projects must piece together multiple sources of grant funding. The following table summarizes the various funding sources obtained by the featured case study projects.

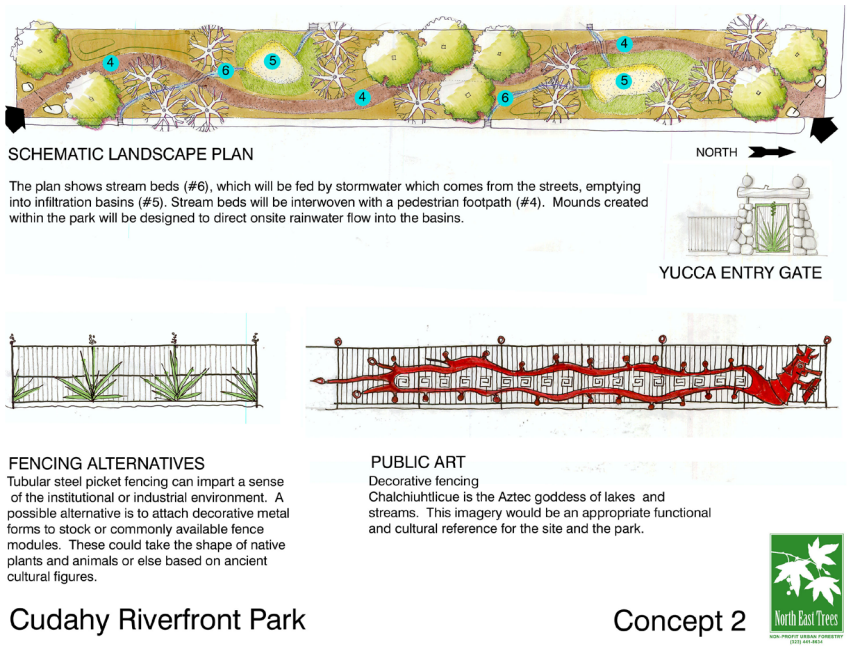
Table 3 - 15: Major funding awarded to case study park projects for development along the River

	Funders	Amount
Cudahy River Park	LA River Access Grant from LA County Parks and Open Space District, under Proposition A	$363,000
	Rivers and Mountains Conservancy, under Proposition 50	$150,000
Marsh Park Phase II	Santa Monica Mountains Conservancy, under Proposition 84	$3.3 million
	California State Parks	$725,000
	LA County Parks and Open Space District, under Proposition A	$435,000
Sunnynook River Park	Santa Monica Mountains Conservancy and Mountains Recreation and Conservation Authority, under Proposition 84	$1.35 million
	CA State Resources Agency and CA Transportation Commission, under State Environmental Enhancement and Mitigation Program	$350,000
Maywood Riverfront Park	Environmental Protection Agency	$40 million
	LA County Regional Park and Open Space District, under Proposition A	$5.9 million
	Murray-Hayden Program, under Proposition 12	$2.4 million

Applying for and then receiving grant money can be a lengthy, complex, and demanding process, often requiring time-consuming proposals as well as extensive planning. We recommend considering funding possibilities when developing project goals and implementation strategies. Usually, the project's initial planning and design processes must be completed before applying for grants from cities, counties, state, or federal programs. Funding can be difficult to secure especially at the start of projects when site control, acquisition or use agreements, or extensive design-development plans are still in flux. Therefore, it is important to complete as much early project planning as possible before applying for grants. Project proponents should expect to piecemeal funding and implement the project in different phases. In addition, it may be more strategic to partner with potential funders and agencies early in the development process rather than approaching them for the first time through a proposal.

Funders have their own rules, and therefore project leads should be very clear and aware of the requirements, limitations, and timelines of each grant. Advanced planning and detailed scheduling is often necessary to ensure that funds are available for implementation and expenditures. Some grants are administered as reimbursements, requiring all expenses to be paid up front. This was the case for the development of Sunnynook River Park, so the City of LA secured a loan from its Public Works Trust Fund. Without these initial funds, the project could not have moved forward. Understanding the funding structure was crucial for scheduling when costs would be covered and reimbursed. Funding had to be available in the right amount at the right time, often requiring changes in the project timeline. Project leads should anticipate delays and cost overruns and consider budgeting more money for contingencies. In every case study profiled, project proponents accounted for contingencies

Figure 3 - 70: *Project leaders for Cudahy River Park developed alternative design proposals to find the best project solutions that fit within their budget.*



Credit: North East Trees

and increased their budgets by 10-15%. Maintaining clear, consistent communication with funders is also critical to provide progress updates and to manage expectations.

Some of the projects presented in this chapter were part of larger, multi-phase efforts in which initial park developments or features could be used to demonstrate the lead organization's ability as well as community interest in the larger project. For example, MRCA used Marsh Park Phase I as a platform to solicit support and funding for Phase II. MRCA used a similar approach to develop Maywood Riverfront Park. With one site secured and a long wait for the other five parcels to be ready for construction, MRCA developed a small, interim park with grass and benches. They used the attention from the small park to secure considerable additional funding to continue the larger park's development.

Project proponents should be creative when considering how to cover project and long-term park management costs. For example, MRCA uses the permitting fees collected from public use of the events pavilion at Marsh Park to fund some of the Park's operations and maintenance.

Figure 3 - 71: *The open-air Spanish mission-style pavilion at Marsh Park provides a venue for special events for up to 200 people. Rental fees help support maintenance costs for the park.*

Credit: Cameron Robertson

What are the important planning and permitting considerations?

Permitting

Obtaining permits to develop parks along the LA River is often the most complex part of development. Permitting fees can be expensive and the procedure to secure them can be labor intensive. Often, highly technical documentation must be completed and provided to permitting agencies. Permitting requirements may also limit, change, or delay project design and implementation and therefore, should be considered as part of the planning process. We recommend that project proponents meet with technical experts to determine requirements before the project begins as well as partner with entities with experience navigating the permitting process with multiple agencies. Consultants can be especially helpful in this area, as demonstrated by MRCA's work with landscape architecture firm, Meléndrez, for the community outreach, design, and permitting of Marsh Park Phase II.

Permitting requirements are affected by site conditions and project scope. If buildings exist on the site, demolition permits must be obtained to manage exposure to hazardous materials such as asbestos and lead. Grading, hauling, and landscaping each require separate permits. These permits may be obtained through municipal building and safety departments and function to ensure that project implementation is in accordance with the applicable municipal, building, health, and safety codes.

Figure 3 - 72: *North East Trees design and construction team working on Cudahy River Park.*

Credit: North East Trees

Environmental impact assessments, in accordance with the California Environmental Quality Act, may be required for park projects. Expert consultants can help with this process, but project proponents should be prepared for a lengthy and expensive procedure. Should environmental assessments identify project impacts, additional permits and/or mitigation may be required. Local green building codes, as well as other environmental standards may require specific permits. For example, many projects along the LA River require a LA County Municipal Separate Storm Sewer System (MS4) Permit to account for the impacts of surface drainage and storm water drainage and retention during construction. MS4 Permits outline Low Impact Development strategies and best management practices for watershed improvements that must be implemented on site. These include dry wells and vegetated swales to manage storm water and to improve local environmental quality. Many of these strategies are tailored to local environmental needs, and can be found in watershed-specific plans.

Use Agreements

As mentioned above, it is essential to clearly identify and hold preliminary meetings with those who own or have the rights to use potential project sites. Those meetings are the first step to pursuing site acquisition, use agreements, or leases to obtain control of the site. We recommend that project proponents also establish how communication will be maintained throughout the process. Many funders require written confirmation of use agreements, lease contracts, and property titles before applications are accepted.

It is important to keep in mind that there may be multiple agencies with jurisdiction over the proposed project site and various regulations on use. In particular, it is important to communicate with the LA County Department of Public Works (LACDPW). Flood control easements administered by LADPW cover the entire LA River corridor, up to 25 feet beyond the top of the river bank. Any proposed development within this easement, regardless of parcel ownership, must accommodate flood control and be reviewed by the LA County Board of Supervisors. The lands extending immediately beyond the riverbank contain a diverse array of restrictive easements, including utility, heavy and light rail, streets, and highways that will involve other agencies and property owners. Local planning departments can help to identify parcel ownership and easements.

From the case studies featured in this chapter, we learned that the process to secure site use may prove to be the most complex and costly aspect of the entire project. In both Sunnynook and Maywood park projects, for example, negotiation over site acquisition and use agreements required extensive, long-term discussions among numerous parties. Even though the City of LA was leading the development of Sunnynook River Park, owned the site, and would manage its operations and maintenance, negotiating a use agreement between all of the agencies that were involved took almost a year. Project leads should consider seeking expert advice or partnering with experienced organizations to help negotiate use.

Figure 3 - 73: *Use agreements were negotiated with both Caltrans and LADWP before Sunnynook River Park could be built.*

Credit: City of Los Angeles, Bureau of Engineering

What are important project maintenance considerations?

Long term operations and maintenance should be considered during all steps of park development and may be a requirement for securing use agreements and/or funding. For example, during the development of Sunnynook River Park, the City of LA's Department of Recreation and Parks agreed to operate and maintain the Park and it was that agency, not the project lead, which entered into 30-year use agreements with landowners.

Project leads, along with the entity responsible for operations and maintenance, should ensure a feasible and sustainable program. If any landscaping or vegetation is incorporated into the project, managers should plan on a plant establishment period, as the project proponents did for each case study featured in this chapter. Each project's construction and landscaping teams remained working on site for six months to a year, to ensure that vegetation was established and all systems were in working order.

It is important to have experienced contractors manage the costs and schedules of maintenance. In addition, there may be opportunities to develop community partnerships. For fiscal reasons and to empower park users, community volunteers are sometimes involved in park maintenance, landscaping, and operations. For example, LandSkate Crew, a community group in Elysian Valley, has maintained and operated the popular Marsh Street Skate Park since 2007.

Figure 3 - 74: *Families can picnic while local youth spend their afternoon at the Marsh Street Skate Park*

Credit: Andrew Pasillas

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Chapter 4

PATHWAYS along the Los Angeles River

INTRODUCTION

Definition and Benefits

Linear pathways serve as a backbone to the Los Angeles River greenway, connecting parks, access points, and bridges. Despite the importance of a pathway network as part of a complete greenway, there are gaps along the 51 miles of the LA River (102 miles total including both sides of the river).

This chapter aims to help fill in those gaps by providing examples of successful greenway path developments along the LA River. We highlight lessons learned from those projects to support future efforts that can collectively create a continuous greenway path along the entire length of the LA River. Featured projects expand both the linear path or trail and the adjacent greenway. The greenway can be expanded or enhanced in several ways: 1) by restoring native habitat and landscaping; 2) by including features such as park space and meandering nature trails; and 3) by developing amenities such as bathrooms, bike racks, and drinking fountains.

In this chapter, we refer to both pathways and trails. These words are often used interchangeably in the context of the Los Angeles River and this Guide. But "pathways" or "paths" are sometimes used specifically to refer to a paved segment designed for bikes and other active transportation uses while the word "trail" can explicitly refer to an unpaved segment designed for pedestrian and equestrian uses. For example, the Los Angeles River Revitalization Master Plan calls for a greenway with "a continuous bike path and a pedestrian trail that incorporates grade-separated crossings for safety at all major cross streets, and provides parallel facilities where needed to minimize user conflicts."[1]

1 City of Los Angeles Department of Public Works. (2007) Los Angeles River Revitalization Master Plan. Pages 5-6. Retrieved from http://www.lariver.org/5.1a_download_publications_LARRMP.htm

Figure 4 – 1: *Pathway users enjoy a shaded bike path and seating areas along the LA River.*

Credit: Andrew Pasillas

Figure 4 – 2: *The beginning of a meandering nature trail with restored native habitat connected to the Valleyheart Greenway's path.*

Credit: Andrew Pasillas

Pathways along the LA River serve both commuters and recreationists, including pedestrians, cyclists, equestrians, and those with limited mobility. A primary goal in developing paths is balancing the interests of these different stakeholders so that use by one group does not limit the use of another. The following benefits of pathways highlight the need for their continued development:

- Mobility: A network of continuous pathways with clear separation from motorized traffic provides a safe and efficient route for recreation or active transportation (walking, biking, etc.) between local and regional destinations.
- Reduced Auto-dependency: Increased active transportation in place of automobile trips yields benefits to society at-large, including improved air quality and decreased traffic congestion.
- Community Activation: High usage of pathways can create a greater sense of community, encouraging people to feel safe and comfortable in neighborhood outdoor areas. Mobility enabled by pathways can facilitate social interaction across communities, connecting diverse populations and improving quality of life.
- Social Equity: Active transportation is low-cost and more accessible than car ownership. The benefits are particularly impactful for those with limited or no ability to operate a motorized vehicle, including youth, elderly persons, and low income residents.
- Health: Walking, running, biking and other forms of physical activity are linked to an array of health benefits including reduced risk of heart disease, obesity, and related illnesses. Exercise can also promote good mental health.

Figure 4 - 3: *A popular bike path under utility infrastructure located near Sunnynook River Park.*

Credit: Andrew Pasillas

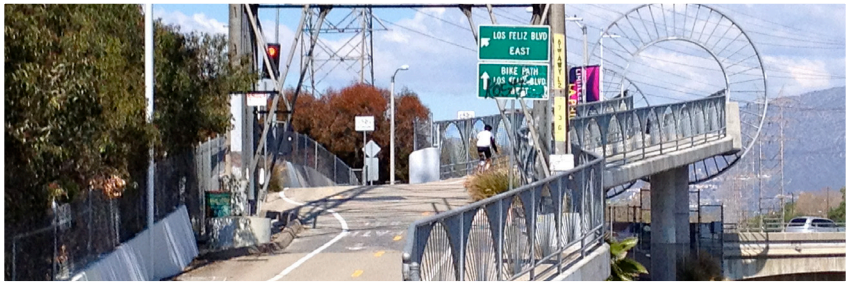
Pathways are most impactful when they are uninterrupted, allowing greenway users to move freely along the LA River. Unfortunately, LA River pathways are segmented by roads and other barriers. Undercrossings or overpasses – crossings that go under or over a barrier – can connect pathways. These types of crossings can be expensive and may require significant public investment. As such, this component of pathway projects is often difficult to incorporate in the project scope of individual development efforts, including those studied in this chapter. We do not specifically highlight undercrossings or overpasses in this Guide. However, the City of Los Angeles' Los Angeles River Revitalization Master Plan (LARRMP) calls for these and all other types of crossings in future efforts to ensure a safe and continuous LA River greenway.

Many pathways along the LA River were designed as part of a park project that includes community access points. Organizing this Guide by four project archetypes provides a logical structure for readers to navigate, but we recognize that this organization requires a simplification of projects that involve a combination of improvements rather than merely one type of feature. It is important that pathways are one part of a complete and comprehensive river greenway. We also recognize that a project-by-project approach to river revitalization can sometimes feel piecemeal. Our aim is to accurately document what has happened in the past to help inform and inspire future efforts that over time may become ever more transformative and comprehensive.

Figure 4 - 4: *Crossing Laurel Canyon Boulevard to access Valleyheart Greenway can be dangerous, underscoring the importance of connected pathways along the LA River.*

Credit: Andrew Pasillas

Figure 4 - 5: *Built in 2002, the Alex Baum Bicycle Bridge is a 120-foot crossing over Los Feliz Blvd. that provides access to the LA River pathway.*



Credit: Henry McCann

Figure 4 - 6: *Crossing under Vanowen Street along the West Valley Bikeway and the LA River's south bank.*

Credit: Andrew Pasillas

Importance: Current Conditions along the Los Angeles River

The LA River flows for 51 miles, but only about half of it is accessible to residents for walking, running, or cycling. In recent years, there have been many important efforts to expand the greenway path network along both sides of the LA River (102 miles). These efforts have generally focused on the upper part of the LA River where pathway projects integrated greenway features and amenities. The case studies profiled in this chapter tell the story of how three successful projects filled gaps in the pathway through the San Fernando Valley and created a vibrant and inviting greenway space along the LA River. The lessons learned can support future projects seeking to close the remaining gaps in the pathway network.

The case studies are also meant to inspire and support work in the lower half of the LA River. The longest continuous stretch of pathway has long been located along the southern portion of the LA River, beginning in the City of Vernon at Atlantic Boulevard and going for 17 miles south to the City of Long Beach. However, the pathway in this stretch only exists on one side of the LA River and there are no pedestrian bridges here to connect the two sides. In addition, greenway development is limited and inconsistent. For example, compared to the upper LA River, much of the lower LA River portion has fewer trees that provide shade, minimal amenities, and limited connection to parks, community access points, and local businesses.

Figure 4 - 7: *Although unpaved and restricted, pedestrians use this part of the lower LA River.*

Credit: Henry McCann

Figure 4 - 8: *The start of the lower LA River bike path at Atlantic Boulevard in City of Vernon.*

Credit: Henry McCann

Figure 4 - 9: *Unlike for much of the lower LA River, in the City of Long Beach the bike path is well maintained and landscaped.*

Credit: Henry McCann

Current Plans

Throughout the Greater Los Angeles area, interest is growing in active transportation as an affordable and sustainable alternative to motorized transportation. However, its adoption and use will only be as strong as the facilities that support it. An overarching goal of both the County's Los Angeles River Master Plan and the City of Los Angeles' Los Angeles River Revitalization Master Plan is to create a continuous, uninterrupted greenway that would support this type of mobility. The plans set forth a specific vision that would provide a dedicated bicycle path on the south and west sides of the LA River, a multi-use trail on the north and east sides, and, where feasible, implement both types of pathways on both sides.[2] Other planning efforts, such as the Greenway 2020 movement led by River LA (formerly the Los Angeles River Revitalization Corporation), aim to garner support for the development of this continuous 51-mile active transportation and recreational corridor among LA River-adjacent communities.[3]

Figure 4 - 10: *Cyclists (active recreationalists) on the LA River bike path travel past fisherman (passive recreationalists) in the Elysian Valley.*

Credit: Andrew Pasillas

2 City of Los Angeles Department of Public Works. (2007) Los Angeles River Revitalization Master Plan. Retrieved from http://www.lariver.org/5.1a_download_publications_LARRMP.htm

3 Los Angeles River Revitalization Corporation – Greenway 2020. (2015). Retrieved from http://www.larivercorp.com/greenway2020

Strategically Prioritizing Pathway Projects

With the goal of a continuous 102-mile greenway and limited resources to implement such a vision, criteria to prioritize pathway locations are required. Analysis should consider user demand, financial feasibility, environmental conditions, and larger questions, like how pathways can link bike and pedestrian networks within LA River-adjacent communities. The following questions can help to prioritize new pathway locations:

1. What value do pathway amenities add to the community?

2. Why is a pathway needed in this particular location? What linkages to significant local and regional destinations will it provide?

3. Who are potential pathway beneficiaries?

    - What are their needs?

    - What is required to ensure shared usage is feasible?

In this chapter, we explore in detail how three innovative projects approached these questions. Guidance for future pathway development is provided in the final section.

Learning from Case Study Projects

The following case studies are meant to inspire and inform future efforts to develop open space along the LA River through transferrable lessons learned. Each project—located in the densely populated and park-poor San Fernando Valley area in the City of Los Angeles—had the goal to provide safe and convenient places to walk, jog, bike, rest, or otherwise enjoy time along the LA River. The projects differed in pathway implementation, as well as in project size, complexity, and cost. We examine each project's origins, goals, and timeline; project proponents and community collaborators; site selection and design; cost and funding; permitting and use agreements; as well as operations and maintenance.

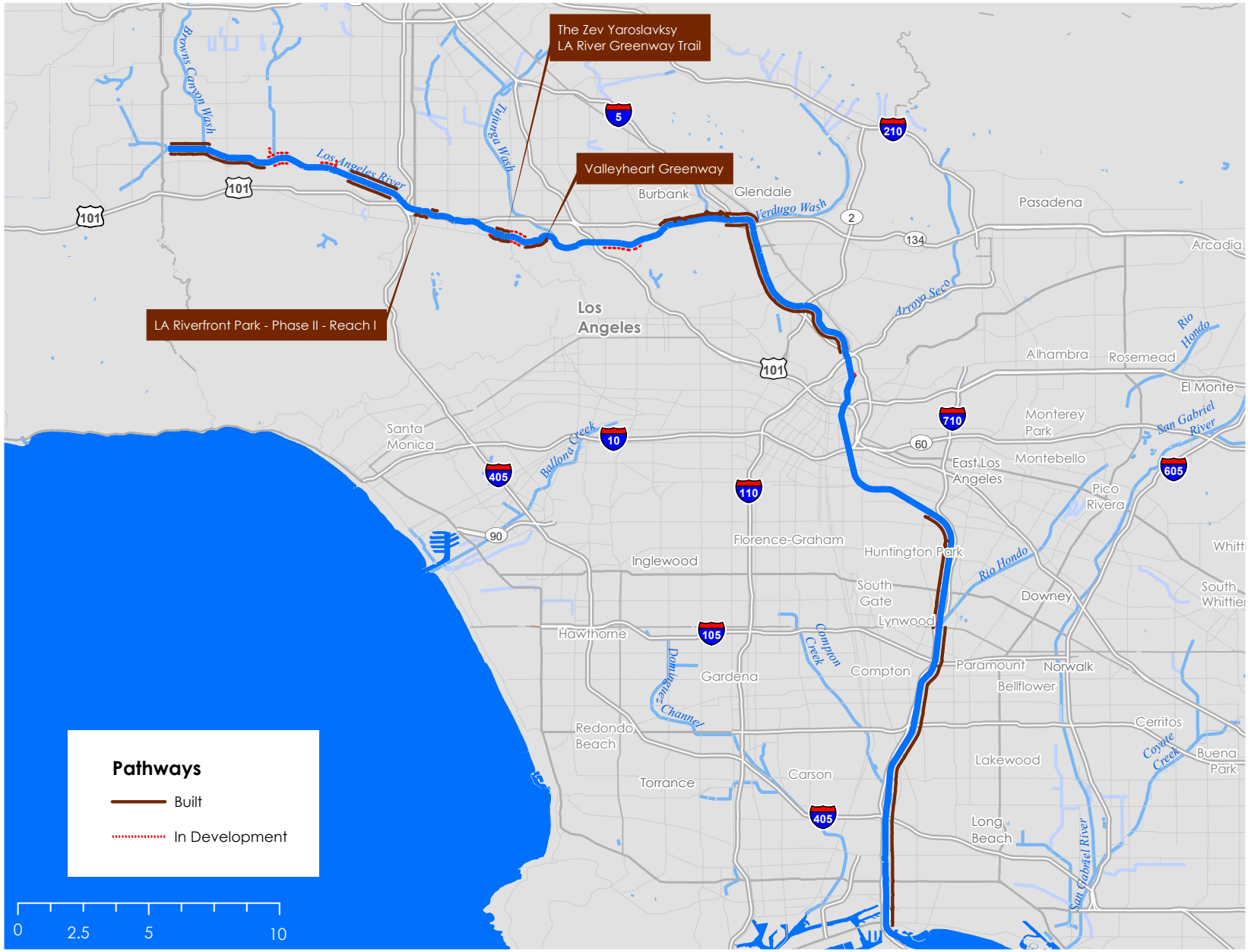
We present projects from smallest in scope to the largest, most complex, and most expensive project. The costs listed (Tables 4 – 1 through 4 – 3) include money spent on construction and planning and do not include site acquisition costs. The third project profiled is part of a larger, comprehensive project while the others are smaller projects that fill in key pathway gaps by intentionally linking up with existing or proposed projects. This chapter ends with guidance for pursing similar projects, and summarizes best practices and lessons learned from the case studies. A summary of the defining elements of each project is shown on the following page:

Table 4 - 1: Valleyheart Greenway Path	
Location:	City of Los Angeles, Studio City neighborhood: between Laurel Canyon Boulevard and Radford Avenue
Form and Scale:	Transformed a quarter-mile strip of underutilized land into a natural riparian corridor with a pathway and community-driven artistic features
Key Benefits:	Example of how to integrate natural features instead of man-made hardscape materials; restored natural riparian habitat; created a bike and pedestrian route to connect to surrounding land uses
Keywords:	Community-driven design; youth involvement; nonprofit organization and government collaboration; artistic gates, benches, and gardens; riparian environment
Lead Proponents:	The River Project and Los Angeles County
Cost:	$870,000
Completed:	2004

Table 4 - 2: Zev Yaroslavksy L.A. River Greenway Trail	
Location:	City of Los Angeles, Studio City neighborhood: between Coldwater Canyon Avenue and Whitsett Avenue
Form and Scale:	Transforming an inaccessible half-mile long maintenance road into a walking trail/path with restored native habitat
Key Benefits:	Closes a half-mile pathway gap, creating a three-mile continuous path surrounded by 4,000 low-maintenance native plants
Keywords:	Dirt walking trail; native habitat restoration; storm water management with bioswale; creative fundraising and effective piecing together of multiple grants
Lead Proponents:	Community Conservation Solutions
Cost:	~$2.3 million
Completed:	Anticipated completion fall 2016

Table 4 - 3: Los Angeles Riverfront Park and Pathway	
Location:	City of Los Angeles, Sherman Oaks neighborhood: between Sepulveda Boulevard and Kester Avenue
Form and Scale:	Developed a half-mile long bike path with natural and man-made features
Key Benefits:	Addressed multiple-users' needs for mobility and enjoyment of nature
Keywords:	Class I Bike Path standards; well-designed and landscaped rest areas with seating; example of overcoming challenges with plan review, use agreement, and permitting
Lead Proponents:	City of Los Angeles
Cost:	~$6 million (for both Reach I and II—about a mile of pathway)
Completed:	2015

Figure 4 - 11: *Pathways along the Los Angeles River, labeling out those featured in this chapter.*



Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

CASE STUDY #1
Valleyheart Greenway Path

In the Los Angeles neighborhood of Studio City, the Valleyheart Greenway project transformed a vacant lot into two-acres of Los Angeles River greenway with meandering nature trails, native landscaping, gardens, and public art. The project successfully translated stakeholder input into the final design of the greenway and is a model for how community collaborations can lead to project success. This case study is focused on the development of a quarter-mile walking path.

Cooperation between the lead organization, The River Project, and the LA County Department of Public Works, exemplifies a strategic approach to the development process. The River Project, a small nonprofit organization, excelled at driving productive community engagement and design development while the County led construction efforts. The project extends the LA River greenway and connects to the Studio City River Greenway west of the site.

Origins, Goals, and Timeline

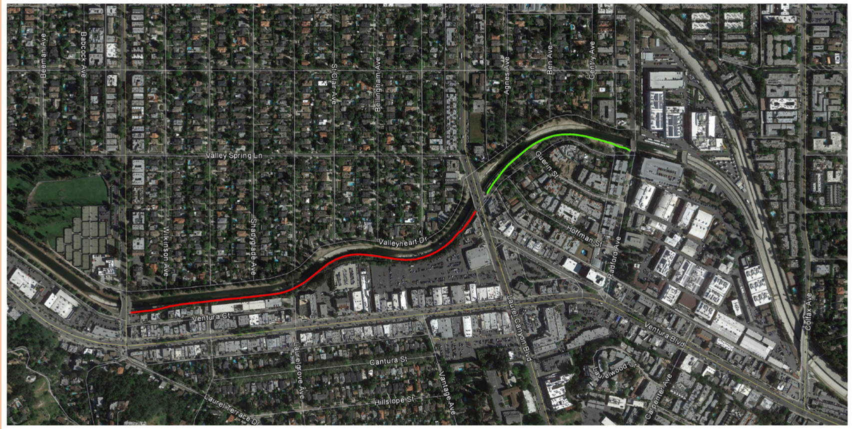
Before the development of Valleyheart Greenway's path, local residents used the vacant site to walk their dogs. There were no formally developed amenities, little vegetation, and no shade. When CBS Studios proposed turning the site into a parking area, nearby residents took a keen interest in it, making hand-drawn signs that advocated for a different type of improvement.

Figure 4 – 12: *Student-designed Great Toad Gate welcomes users at the east entrance to the Valleyheart Greenway.*

Credit: Andrew Pasillas

The creation of Valleyheart Greenway was community driven. Planning began after the City of LA released plans to develop the adjacent Studio City River Greenway project (also called the LA River Greenway). Community members wanted Valleyheart Greenway to have fewer hardscapes and more natural features compared to the City-led project. The River Project worked with locals to satisfy their interests. Project proponents hoped to reach the goals outlined below as well as to create a new model for public-private partnerships along the LA River.

Figure 4 - 13: *Aerial perspective of Valleyheart Greenway (green line) in context to the Studio City River Greenway (red line), surrounding residential neighborhoods and a business corridor.*



Credit: Luskin Center for Innovation and Google Earth

Table 4 - 4: Goals of and opportunities for the Valleyheart Greenway project
Project Goals
Enhance public access to the LA River through outreach and the creation of a usable greenway
Increase riparian habitat
Stimulate a sense of community ownership of the greenway
Educate the community about LA River issues, such as the natural riparian heritage and the LA River's relationship to the Pacific coast
Project Opportunities
Revitalize natural areas along the LA River
Involve the community, including local children, in the process
Coordinate community goals with agency design and engineering standards
Present a feasible, fundable model for future revitalization projects
Provide the California Coastal Conservancy with an ideal project to implement

Information from: The River Project, Los Angeles River Community Design—Studio City, March 2002.

Project Goals

Prior to the development of Valleyheart Greenway, relatively few pathway projects had been established along the LA River. They were primarily in the Elysian Valley area and led by the nonprofit organization, North East Trees, with Lynne Dwyer as the landscape designer. Ms. Dwyer's designs seek to minimize the use of man-made hardscape materials like asphalt, and instead emphasize the use of local materials like river rocks and vegetated softscapes to enhance the natural aesthetics of the LA River. The River Project aimed to implement these design objectives on the north and south banks of the river.

In 2001, the community-driven design process began. In 2002, the Los Angeles River Community Design—Studio City report was finished and then presented to the funders of the study, the California Coastal Conservancy and the Los Angeles and San Gabriel Rivers Watershed Council. Designs were completed for both banks, but developing the north bank was put on hold due to funding and other constraints. Construction for Valleyheart Greenway on the south bank began in August 2003 and was open to the public in June 2004.

Project Proponents and Community Collaborations

The lead organization responsible for managing the Valleyheart Greenway development process was The River Project—a nonprofit that advocates for and utilizes a watershed approach to natural resource protection, conservation, and enhancement. The LA County Department of Public Works (County) was responsible for project funding and construction. Carpenter Avenue Elementary School and the Studio City Residents Association were also key project partners.

The River Project carefully selected the planning and design team including: a local landscape architect, ecologist, civil engineer and cost estimator. They incorporated the community's design preferences and released the Los Angeles River Community Design—Studio City report. The report includes design development documents, cost estimates, and maintenance recommendations for the development of both banks of Valleyheart Greenway.

The County led the construction bid process and was required to award the job to the lowest bidder. The River Project was concerned that the community-driven design might not necessarily be prioritized and translated through the construction process. Their staff worked closely with County engineers to ensure that the community's vision was honored and implemented.

The River Project recognizes that each community along the LA River has its own history, culture, and character and believes these should inform and drive the design of greenway amenities. Therefore, they informed locals of the history of the LA River's evolution in Studio City. The River Project also engaged the community and encouraged them to envision and articulate what they saw as the benefits of the future Valleyheart Greenway. Stakeholders included students, homeowners, renters, activists, and business owners.

The River Project had an innovative idea to educate and involve elementary school students in the development of Valleyheart Greenway. Not only did they teach students about the LA River, but they also incorporated their ideas and art as part of the final design. For instance, The River Project conducted workshops with second grade students at Carpenter Avenue Elementary School (now named Carpenter Community Charter School) to teach them about the

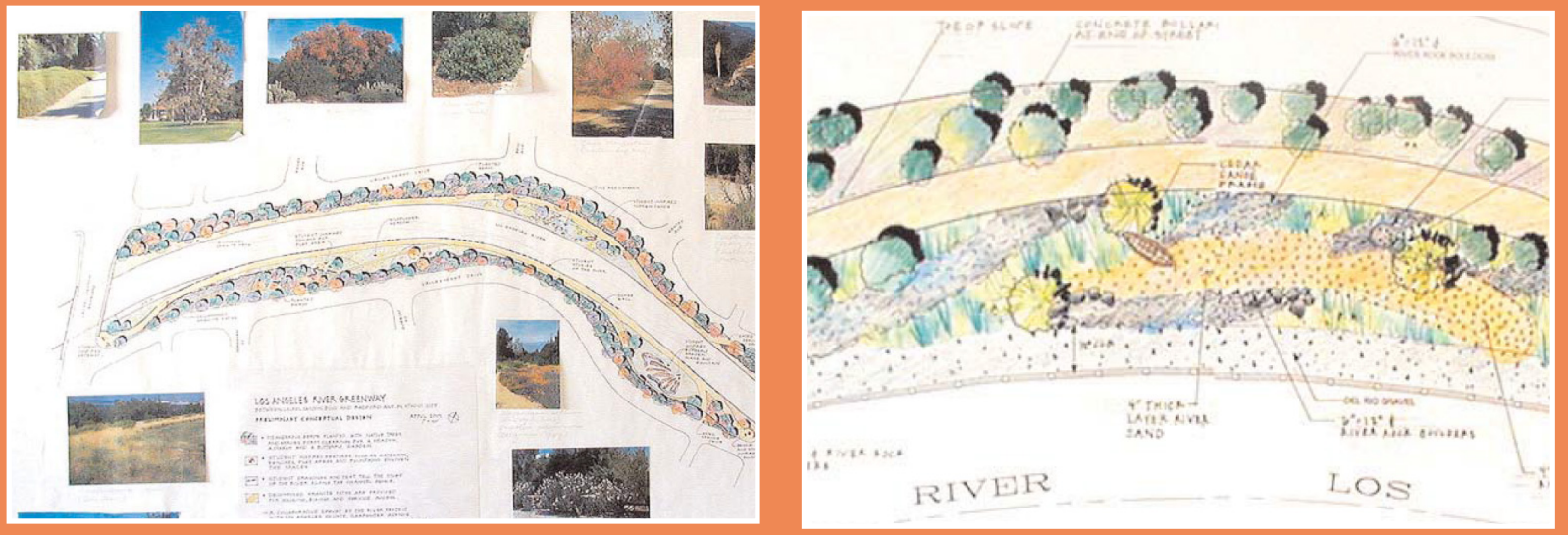
LA River's natural state, how it had been transformed, and what it might look like in the future. The River Project also held a series of workshops with fourth and fifth grade students to educate them on the river's history, habitat, indigenous inhabitants, and how to design park projects. Lessons were coordinated with teachers to ensure that they met curriculum goals.

The River Project targeted these age groups because they thought they would be creative and could challenge current LA River perspectives. The younger students wrote and illustrated a beautiful series of river stories. The older students created designs for various greenway amenities, which led to the development of a garden, a butterfly-shaped bench, a wall with a rattlesnake sculpture on it (Rattlesnake Wall) and a LA River gate that looks like a toad (Great Toad Gate). The students' parents also became engaged in the Valleyheart Greenway discussion.

In April 2001, The River Project planned an Earth Day event to celebrate both the work of the students and to launch the new pathway project. With guidance from North East Trees, students planted native trees and shrubs along the eastern edge of the project area. Elected officials and community leaders publicly recognized the students' work. As a result, the children felt rewarded for their efforts, a portion of the project area was immediately transformed, and there was more community support to develop Valleyheart Greenway.

After the Earth Day event, The River Project engaged more local groups and businesses to educate them on the project and solicit their input. They used the school to keep in contact with parents, hosted an information booth at weekly farmer's markets, and held meetings with neighbors and the Studio City Residents Association. The River Project staff hand-delivered meeting invitations to every household in the immediate project area. Residents who attended learned about conceptual designs, area maps, the work of students, and current site conditions. The meetings helped to identify project concerns and design preferences. For example, the community wanted more places to access the pathway than what was originally proposed. They also came to understand the tradeoffs of developing a desirable LA River pathway: increased visitation, traffic, and maintenance challenges.

Figure 4 – 14: *Design plans for the Valleyheart Greenway.*



Credit: The River Project

Site Selection and Design

The location of Valleyheart Greenway, between Laurel Canyon Boulevard and Radford Avenue, was chosen for four reasons: 1) the site was vacant, 2) the community voiced their interest in developing the LA River greenway instead of the proposed parking lot at the site, 3) the site could serve as a convenient picnic area for customers of the Sunday farmers markets, and 4) it would extend the Studio City River Greenway being developed between Whitsett Avenue and Laurel Canyon Boulevard. The site, which is approximately a quarter-mile long, is an easement owned by the LA County Flood Control District.[4]

The goals of Valleyheart Greenway were to restore riparian habitat to encourage native wildlife to return, and also to create an area for residents to stroll, meet neighbors, picnic, bike, and enjoy the natural environment. These goals, input from students and locals, and agency requirements drove the design of Valleyheart Greenway and its path. A civil engineer and a local landscape architect familiar with this stretch of the LA River assisted The River Project. The parties developed the following documents to guide the project: site survey; general specifications; a construction cost estimate; as well as plans for existing structure demolition, grading, hardscaping, planting, and maintenance. In addition, a local artist and a local metalworker were engaged to translate the original student design drawings of Great Toad Gate into engineering documents and to realize it as a signature element of Valleyheart Greenway.

4 Because this project is located within the jurisdiction of Los Angeles County and was also implemented by Los Angeles County, permitting was not a major issue. Therefore, we do not discuss permits or use agreements in this case study. A more general description of permitting is included in the introduction to the Guide.

Figure 4 – 15: *Original site conditions lacked natural vegetation.*

Credit: The River Project

Table 4 - 5: Key designs requirements and constraints
Maintenance truck accessibility, including a flat turnaround area for emergencies and periodic cleaning of the weir, a dam that diverts or regulates flow
Features (e.g. fencing, guardrails, retaining walls) must meet specific standards for public use
Plants must be placed to avoid their roots potentially damaging the river channel wall
Access points and trails must accommodate use by both pedestrians and service vehicles

Information from: The River Project, Los Angeles River Community Design—Studio City, March 2002

Figure 4 – 16: *Weirs, dams that divert or regulate water flow, need periodic cleaning to remove plants and debris.*

Credit: The River Project

The City of LA Department of Transportation planned to develop a Class I asphalt bike path along the river. The River Project gave a lot of thought as to where the Valleyheart Greenway bike path should be placed. It made sense for it to be located on the south bank between Whitsett Avenue and Laurel Canyon Boulevard, due to its proximity to an adjacent shopping district. However, various physical and technical constraints made it impossible for bikes to cross Laurel Canyon Boulevard safely from the Studio City Greenway to the entrance of Valleyheart Greenway path. A final determination of the placement of Valleyheart bike path would take many years to resolve, so in the meantime, The River Project wanted to challenge people's assumption that paths must be paved. They developed a 12-foot wide, porous decomposed granite pathway that would serve multiple community benefits. In preparation for the future City of LA Class I bike path development efforts, The River Project also preserved a level area of 20 feet from the river fence.

Table 4 - 6: Examples of Valleyheart Greenway design features

Berms	A series of meandering berms, made of relocated soil, run the length of the project area creating a natural transition from the street to the LA River.
Clearings	Three clearings, a wildflower meadow, a wetland, and a maze in the shape of a butterfly were included in the final design.
Hardscaping	12-foot-wide porous, decomposed granite pathway for pedestrians and bicyclists. Aggregate concrete was used at street level and on the ramp near the Laurel Canyon gateway. Replaced the chain link fence with an undulating metal picket fence matching that of the Studio City River Greenway.
Student Designs	Great Toad Gate; Rattlesnake Wall; butterfly-shaped benches, flower seats, a half-log picnic table; a fountain in the shape of an Anna's Hummingbird, Stories of the River fencing; among other components.

Information from: The River Project, Los Angeles River Community Design—Studio City, March 2002.

Figure 4 – 17: *Cyclist entering the path near Radford Avenue.*

Credit: Andrew Pasillas

Figure 4 – 18: *The River Project staff gave student designers the opportunity to have their names engraved at the Vallyheart Greenway.*

Credit: Andrew Pasillas

Cost and Funding

The cost to construct the Valleyheart Greenway on the south bank of the LA River was $800,000. In addition, the Los Angeles River Community Design—Studio City report cost approximately $70,000 for a total project cost of $870,000, not including site acquisition costs.

Working with a cost estimator was helpful to accurately assess project costs. However, there were some unexpected costs. For example, the County installed drainage cells at each end of the project, instead of what The River Project had planned, wildflowers or vegetation. The drainage cells were not installed properly and ultimately had to be removed which added to the budget. Despite this, the project's design renderings and estimated costs were relatively accurate.

The County paid for the construction costs (although could not cover the cost of implementing all of the student's designs). The Los Angeles River Community Design—Studio City report was funded by the California Coastal Conservancy and the Los Angeles and San Gabriel Rivers Watershed Council under Proposition 204, the Safe, Clean, Reliable Water Supply Act of 1996.

Operation and Maintenance

For the first three years after opening, The River Project assumed responsibility for operation and maintenance of both Valleyheart Greenway and its path and Studio City Greenway (which were completed around the same time). They established the Native River Gardeners program to empower interested volunteers to help with greenway upkeep. Staff led regular maintenance sessions, posting

the schedule on their website. In addition, the elementary school students who helped design the project took on maintenance as a service-learning project when they got to high school.

After the first three years, the County contracted with a landscape maintenance firm to assume the responsibility for ongoing operations and maintenance of Valleyheart Greenway and its path. While contractor turn-over resulted in a period of irregular performance at Valleyheart Greenway, the County has continued to work closely with The River Project to address their concerns over native plant management, efficient irrigation, mulch replacement, and other issues.

The River Project attributes the minimal security and liability issues at Valleyheart Greenway to strong community engagement and personal investment.

Figure 4 – 19: *Path is wide enough to allow for easy maintenance.*

Credit: Andrew Pasillas

Next Steps

Interpretive signs along Valleyheart Greenway and its path were included in the original design of the project, but did not materialize due to funding delays. However, at the end of 2014, LA County Supervisor Zev Yaroslavsky prioritized transferring the funds needed before he left office. The River Project anticipates this amenity to be implemented by fall 2016.

CASE STUDY #2
Zev Yaroslavsky L.A. River Greenway Trail

The development of the Zev Yaroslavksy L.A. River Greenway Trail, located in the City of Los Angeles neighborhood of Studio City, will be completed in 2016. This project, led by the nonprofit organization Community Conservation Solutions, will connect to existing Los Angeles River pathways on either side of the Los Angeles River. Filling this "missing link" will enable the longest, continuous stretch of greenway trail in the San Fernando Valley. In addition, the project exemplifies an ecosystem-based design to restore natural habitats and improve water quality.

Origins, Goals, and Timeline

A main goal of the Zev Yaroslavksy L.A. River Greenway Trail project is to bridge the gap in the LA River greenway in order to create a continuous three-mile trail, the longest in the San Fernando Valley. The project site is currently an underutilized stretch of linear land along the river. Regional leaders, decision-makers, and community members have long advocated for expanding the LA River greenway and increasing park and open space.

Communities in the San Fernando Valley are among the most park-poor in the state: there is less than one acre of park land per 1,000 residents. This is far less than the national recommendations for communities to have 6 to 10 acres per 1,000 residents. This project aims to create open space for the nearly 200,000 people who live within three miles of the site as well as increase connectivity for

Figure 4 – 20: *Rendering of the Zev Yaroslavsky L.A. River Greenway Trail project, which is proposed for the LA River's north bank.*

Credit: Mia Lehrer + Associates, 2014

greenway users. In addition, the trail will be adjacent to the proposed Los Angeles River Natural Park, which would safeguard the last remaining, unprotected open space along the LA River in the San Fernando Valley.

Project planning began in 2011. Construction began in September 2015 and is scheduled for completion by the fall of 2016.

Figure 4 – 21: *Map of the trail in relation to parks, transit stops, and other amenities.*

Credit: Mia Lehrer + Associates, 2014

Figure 4 – 22: *This image was taken in October 2015, soon after construction broke ground on the trail.*

Credit: Andrew Pasillas

Project Proponents and Community Collaborations

The nonprofit organization Community Conservation Solutions (CCS) directs the Zev Yaroslavksy L.A. River Greenway Trail project. The mission of CCS is to work on complex and challenging problems where people and nature intersect. CCS selected two lead consultants to join their development team: the landscape architecture firm, Mia Lehrer + Associates (ML+A), serves as the design lead and Land IQ specializes in native habitat restoration. VCA Engineers, Inc. and Owen Gabbert Designs also supported the development team.

CCS recognizes the importance of coordination between contractors as well as working with a myriad of public agencies as partners and funders. The project's public agency partners and funders include the California Natural Resources Agency, California Department of Transportation, the Santa Monica Mountains Conservancy, Los Angeles County, and the City of Los Angeles.

Support from federal, state, and local elected officials was also important. The official project title—Zev Yaroslavksy L.A. River Greenway Trail—honors former LA County Supervisor Zev Yaroslavsky's effort in securing a significant amount of funding for the project.

Community engagement is and continues to be an integral part of the multi-step development process, from helping to inform design considerations to supporting construction and maintenance. CCS has worked to develop partnerships with environmental nonprofit organizations, community associations, business organizations, schools, and youth groups. For example, North East Trees was hired as the project's construction contractor because of their vast experience with LA River restoration projects. Their staff includes licensed professional arborists, environmental scientists, as well as landscape architects and designers.

To share with and hear from a wide range of stakeholders, CCS held several community meetings with the assistance of groups like Save LA River Open Space and the Studio City Residents Association, which also provided project funding. In addition, project proponents plan to work with community volunteers to help plant native trees during the construction phase.

Given the habitat restoration directives of the project grant funders, CCS made sure to communicate to stakeholders that this would influence the project's design. This means that the project's open space areas might look more organic, natural, and wild than traditional images of a planned park.

Site Selection and Design

The project site is identified in the City of Los Angeles' Los Angeles River Revitalization Master Plan (LARRMP). The linear trail is being designed to be unpaved and made from dirt, consistent with LARRMP guidelines for walking trails on the north bank of the LA River.[5] The walking trail along the river will connect with a nature trail that meanders through a native plant garden with informative signage for self-guided tours about the native habitat

5 LARRMP also calls for bike paths to be developed on the River's south bank (see the next featured case study as an example)

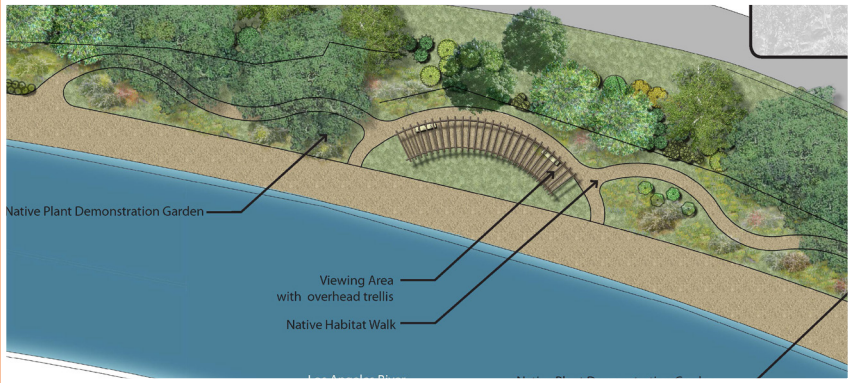
and its restoration. Other amenities planned along the trail include an Americans with Disabilities Act-compliant ramp, benches, interpretive story panels integrated into the fence to visually tell both the human and natural history of the LA River, and a drinking fountain for both people and pets.

For trail construction materials, the CCS team and North East Trees found a solution to a budget constraint—utilize dirt already on-site, mixed with a binding agent and then compacted—instead of using more expensive decomposed granite. The non-paved, joint-friendly trail surface is user-friendly and will provide public health benefits by encouraging physical activity in a natural location away from urban congestion.

Figure 4 – 23: *Site plan showing the location of bioswales, pedestrian ramps, and other project features.*

Credit: Mia Lehrer + Associates, 2014

Figure 4 – 24: *Site plan of the Native Habitat Walk Demonstration Garden.*



Credit: Mia Lehrer + Associates, 2014

The trail's design also takes into account several environmental considerations including storm water management and habitat restoration. The project includes grading and construction of a natural bioswale, an engineered rock-lined depression area that will capture and naturally clean storm water runoff before it enters the LA River.

The overall objective of the Zev Yaroslavsky L.A. River Greenway Trail project is to restore complex native riparian habitats and to enhance the LA River's function as a natural habitat corridor. Landscaping plans were driven by a science-based, ecosystem-based approach. Currently, a lot of LA River-adjacent land contains old, non-native trees that provide little habitat for wildlife. Some of these will be removed and over 4,000 native trees and plants will be planted to support habitat biodiversity. Animals, birds, and insects need distinct microenvironments when foraging for food, mating, or finding nesting materials. In addition, these plants will extend their roots to help reduce soil erosion, minimize sediment loading in the river, and increase storm water infiltration in the ground. Another benefit of the new native trees and plants will be to sequester carbon and provide natural cooling by countering urban heat island effects.[6,7] From CCS's perspective, this cutting-edge greenway trail project will set a standard for native landscaping best practices, which should be replicated along the entire LA River.

The location of the project site facilitates community access to and awareness of the LA River. Artistically themed and hand-crafted entry gates and fencing will line the river channel and portray the LA River's natural and human history.

Figure 4 – 25: *Rendering of trail from Whitsett Avenue.*

Credit: Mia Lehrer + Associates, 2014

6 CCS estimates that the planned trees will sequester an estimated 300,000 pounds of carbon dioxide within the first 20 years of implementation. (2015). Zev Yaroslavsky L.A. River Greenway Trail. Retrieved from http://www.conservationsolutions.org/largwt.html

7 The term "heat island effects" describes built environments that absorb and emanate heat more than rural and open space areas. (2015). U.S. Environmental Protection Agency. Retrieved from http://www.epa.gov/heat-islands

Cost and Funding

The Zev Yaroslavksy L.A. River Greenway Trail project creatively pieces together many small grants to complete a significant project. The total estimated project cost is approximately $2.3 million and is funded by a number of sources. A portion is funded by the California Department of Transportation, which allocated mitigation funding in response to habitat damage resulting from the widening of Interstate 405 in the Sepulveda Pass. Additional funding is provided by the California Natural Resources Agency, Santa Monica Mountains Conservancy, the City of LA, Studio City Residents Association, CCS, private donors, and Proposition A (LA County Regional Park and Open Space funds). Sub-contractors are also contributing some pro bono time to the project.

Even before putting together more official grant applications, CCS was successful in obtaining many different grants due to early engagement with a variety of stakeholders, civic leaders, elected officials, and other partners. As an incentive and acknowledgment tool, funders would have the right to name components of the project. Options ranged from $400,000 for the trail name to $200,000 to name the Native Habitat Walk and River Viewing Area to $500 to plant a native tree or engrave an outdoor paving tile.

With project funding secured, CCS still faced an issue typical of publicly-funded projects. In general, agency funded projects operate on a reimbursement basis, meaning CCS would need to cover expenses up front. It can then take three to six months before repayment is issued. To help provide "bridge financing"—a loan used until permanent financing is secured—CCS secured a loan from The David and Lucile Packard Foundation. This investment program provides low-interest loans for projects already funded, but that have a cash flow issue. The loan in the amount of $700,000 allowed CCS to move forward with project construction and to remain on schedule.

Figure 4 – 26: *Rendering of the trail's Native Habitat Walk and River Viewing Area.*

Credit: Mia Lehrer + Associates, 2014

Permitting, Use Agreements, Operations, and Maintenance

North East Trees brought contracting expertise and helped inform how certain design decisions might impact permitting and cost. The organization also took the lead in applying for permits from Los Angeles County and the U.S. Army Corps of Engineers (USACE). Many different County departments and divisions had to be engaged, which slowed the pace of the project. CCS worked closely with North East Trees to prioritize tasks and streamline the process. Even with this preparation, the permitting process took more than a year. CCS tried to anticipate all permitting related costs but unexpected fees were encountered.

The project site is owned by the Los Angeles County Flood Control District (LACFCD). The Mountains Recreation and Conservation Authority (MRCA) agreed to conduct operations and maintenance for the project upon its completion. To secure use of the site, a 20-year use agreement was established between the two entities. It recognizes MRCA's intention to operate the project as a public recreational facility upon completion of construction, and provides guidelines for proper maintenance and future improvements.

Plans for operations and maintenance were a requirement for the State and County grants for which CCS applied, and thus, MRCA's commitment to serve as the lead entity responsible was critical. MRCA is very experienced in this area, specifically for park projects that are revitalizing the LA River.

Figure 4 – 27: *Rendering of the 'Rivers and Mountain Entry Gate' to the trail at Whitsett Avenue.*

Credit: Mia Lehrer + Associates, 2014

CASE STUDY #3
Los Angeles Riverfront Park and Pathway

Residents of the Sherman Oaks neighborhood in the City of Los Angeles had long used the banks of the Los Angeles River for walking and biking, despite limited amenities and access to it. More than a decade ago, they requested that the City transform a maintenance road—which was technically not for public use—into a public pathway within a park, now known as the Los Angeles Riverfront Park (or Reach I).

Opened in 2015, Los Angeles Riverfront Park and its pathway are located on the south bank of the LA River between Sepulveda Boulevard and Kester Avenue. The pathway is a well-lit, half-mile long asphalt walking and bike pathway that allows users to enjoy the river while avoiding travel on busy streets. The project also includes greenway features, including a half-mile bioswale to manage storm water, and exemplifies the successful blending of man-made hardscapes with natural landscaping elements.

The City is now applying lessons learned from Reach I of the project to develop Reach II, another greenway path on the LA River's south bank between Whitsett Avenue and Laurel Canyon Boulevard in Studio City. This case study focuses on Reach I, but sometimes refers to both because the projects have joint budgets and construction contracts.

Figure 4 – 28: *Pedestrian strolling along the pathway near Kester Avenue.*

Credit: Andrew Pasillas

Origins, Goals, and Timeline

Los Angeles Riverfront Park and its pathway have a long history that began in 1996 with the passage of Proposition K, which prioritized and funded 183 initiatives for recreational facilities, outdoor improvements, and parks—including Los Angeles Riverfront Park—within the City of LA.

The goal of the Park was to transform a municipal maintenance road into a public, accessible, and safe walking and biking path surrounded by a greenway that community members of all ages could enjoy. It is part of an effort to create a continuous pathway and LA River greenway along the 32 miles of the LA River within the City of Los Angeles.

The Los Angeles Riverfront Park development broke ground in September 2013, with an official ceremony. In June of 2015, the project was complete and a ribbon cutting ceremony was held to officially open it to the public. This represented the end of a longer than anticipated project timeline that had multiple delays during the plan review and approval processes, as well as unexpected construction setbacks. As will be discussed in this chapter's guidance section, the Los Angeles Riverfront Park project serves as an example of how to overcome challenges during permitting, use agreement, and construction phases of development.

Table 4 - 7: Implementation timeline for the Los Angeles Riverfront Park and its pathway

Timeline	Date
Original proposal is submitted by Mia Lehrer + Associates and notice to proceed (NTP) is issued under a City of Los Angeles Department of Recreation and Parks contract.	Early-2005
The Project is submitted to the County of Los Angeles for plan check in February of 2009. Reviews, comments, and re-submittals continue for 3 years.	2009-2012
Bidding on the project begins in February and the project is awarded in June to the construction company Simgel Company, Inc.	2012
The Land Use Agreement is obtained for the project.	August 2012
The County requests re-submittal of the project and suggests that Section 408 clearance may be necessary.	September 2012
The project is submitted to the USACE for review.	October 2012
The project leads obtain a construction permit for Reach 1.	August 2013
Construction of Reach 1 begins.	September 2013
The project leads obtain a construction permit for Reach 2.	May 2015
Reach 1 is opened to the public. The team also breaks ground on Reach 2 on the same day.	June 2015
Reach 2 construction completed (expected).	February 2017

Project Proponents and Community Collaborations

The City's Bureau of Engineering, Recreational and Cultural Facilities Division led the development of Los Angeles Riverfront Park and its pathway. The project was also supported by two subcontractors. Project design was led by Mia Lehrer + Associates (ML+A), a landscape architecture firm with an expertise in LA River related projects, and construction was led by Simgel Company, Inc. The Los Angeles County Department of Public Works and the U.S. Army Corps of Engineers (USACE) were the permitting agencies involved in the project.

Consistent with a Proposition K requirement, there was a strong focus to ensure that the project was community-driven. The City created and convened a Local Volunteer Neighborhood Oversight Committee (Oversight Committee) to solicit and respond to community feedback to the project.

Site Selection and Design

The project site, between Sepulveda Boulevard and Kester Avenue, is a right-of-way of the Los Angeles County Flood Control District. It was a former maintenance road, parallel to the LA River, which had not technically been open for public use. The fact that community members used it despite barriers to accessibility indicated a high public demand for a properly developed park and pathway.

Figure 4 – 29: *Location of Los Angeles Riverfront Park—between Sepulveda Boulevard and Kester Avenue—in relation to nearby major roads and freeways.*

Credit: Luskin Center for Innovation via Google Earth

Figure 4 – 30: *Preexisting conditions of the maintenance road.*

Credit: City of Los Angeles

The Oversight Committee informed the design of Los Angeles Riverfront Park, as did Proposition K funding requirements. The final design addressed the community's safety and aesthetic concerns, implemented storm water best management practices, included a mix of softscaping (e.g. native vegetation) and hardscaping (e.g. asphalt) elements, and incorporated ramps for users with limited mobility.

For security, certain areas of Los Angeles Riverfront Park were planted with low clearance vegetation. This allows police and others with an interest in security to monitor the site. Lighting along the pathway was also installed. In addition, community members did not like the existing chain-link fence along the river. Project proponents responded by including a beautiful wrought iron wave-shaped fence that follows the natural contours of the pathway. The fence design is also consistent with numerous other projects along the LA River greenway.

Receiving funds under Proposition K meant that the project had to include best management practices to treat storm water runoff. This became a focus of the project's layout. The pathway and gabion walls were designed to move storm water into a remarkably long (half-mile) bioswale, a depressed area that captures and cleans the water. The bioswale naturally replenishes soil with storm water minimizing the need to irrigate plants along the pathway. A drainage system under the bioswale also releases naturally filtered water, every 100 feet, into the LA River.

Figure 4 – 31: *Wave-shaped fencing, Class I Bike Path, bioswale, and gabion walls at Los Angeles Riverfront Park.*

Credit: Andrew Pasillas

ML+A aligned landscaping decisions for the Los Angeles Riverfront Park and its pathway with the County's Los Angeles River Master Plan, Landscaping Guidelines and Plant Palettes.[8] They selected native plants that would require little or no irrigation and maintenance—mainly grasses and trees such as California sycamores and coast live oaks. Efforts were also made to protect existing, mature trees during construction. The continued growth of these new and existing trees should shade the pathway in the future.

Figure 4 – 32: *Native plants at the Los Angeles Riverfront Park.*

Credit: Andrew Pasillas

Figure 4 – 33: *Rest areas along the pathway encourage users to sit and relax.*

Credit: Andrew Pasillas

8 Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes. (2004). Retrieved from http://ladpw.org/wmd/watershed/LA/LAR_planting_guidelines_webversion.pdf

Softscaping elements were balanced with hardscaping components at the Park. For example, the use of rock walls (called gabion walls) creates a natural look, which includes nooks and crannies for wildlife and serves as a physical barrier that directs storm water. In addition, asphalt was used to pave the bike path because it is cost efficient, works well for cyclists, and has a decent life expectancy. The entrances at either end of Los Angeles Riverfront Park and its pathway include scenic overlooks, with drinking fountains and benches. These entrance points were developed specifically because they provide clear visibility of the LA River.

Figure 4 – 35: *Close up of a gabion wall.*

Credit: Andrew Pasillas

Figure 4 – 34: *Bike facilities, seating area, and the pathway along Sepulveda Boulevard.*

Credit: Andrew Pasillas

Figure 4 – 36: *A staircase midway along the path connects the surrounding community and a small neighborhood park to the pathway.*

Credit: Andrew Pasillas

Project proponents rebuilt Americans with Disabilities Act-compliant ramps at both the east and west ends of Los Angeles Riverfront Park. While this delayed project implementation, the ramps allow everyone to use the pathway and, as an added benefit, maintenance and police vehicles can easily access the site.

Figure 4 – 37: *Los Angeles Riverfront Park and its pathway near Kester Avenue.*

Credit: Andrew Pasillas

Cost and Funding

While this case study focuses on developing Reach I of Los Angeles Riverfront Park, Reach I and II share one budget and construction contractor.[9] Project proponents estimate that the cost to construct both projects will be approximately $5 million, not including planning, design, and other non-construction related expenses. These likely add about $1 million to the total budget.

Prop K provided roughly $6 million for the joint projects. Proposition K, which was passed by City of LA residents in 1996, raises $776 million over 30 years (ending in 2026) for the City to acquire, improve, construct, and maintain parks.[10] The Los Angeles Riverfront Park was prioritized as one of 183 initiatives included in the ballot measure.

The project experienced numerous delays that altered design outcomes and budgeting. One example was during the permitting process. As described in the next section, the City had to submit project planning documents to the County more than once. This delayed the implementation timeline. In another example, early site plans included numerous shrubs and trees lining the entire bike path. However, financial constraints forced project proponents to limit their use of native vegetation and to rely more on hydroseed—an affordable blend of seeds and mulch that is sprayed on top of soil. The solution was cost-effective and useful on the sloping land adjacent to the bike path.

9 E170406F - Los Angeles Riverfront Park Phase II- Sepulveda to Kester & Coldwater Cyn to Whitsett. (2012). Retrieved from http://www.labavn.org/index.cfm?fuseaction=contract.opportunity_view&recordid=13416&CFID=931495&CFTOKEN=71812911

10 Belgum, Deborah. (1996, November 27). $776-Million City Parks Measure Passes -- Barely. Los Angeles Times. Retrieved from http://articles.latimes.com/1996-11-27/local/me-3501_1_parks-measure

Due to funding limitations, project proponents had to be creative when developing greenway features. For example, they incorporated gabion walls instead of constructing a full retaining wall. The cost of installing gabions can vary because construction can be quite time-intensive. A more costly design decision was choosing to install wave-shaped picket fencing instead of simple chain-link fencing. This choice was partially in response to community feedback about aesthetics and because the wave-shaped fencing is consistent with other greenway developments.

Figure 4 – 38: *Results of planting hydroseed are shown next to gabion walls used for seating.*

Credit: Andrew Pasillas

Permitting and Use Agreements

Securing permits and the land use agreement to develop Los Angeles Riverfront Park and its pathway took approximately a year and a half to complete. The Los Angeles County Department of Public Works was the primary agency responsible for reviewing and approving the City's development plans, as it does for all proposed projects immediately adjacent to the LA River. A permit from the U.S. Army Corps of Engineers was also required because all projects that may impact the LA River's flood control channel must obtain a Section 408 Permit. Several City and County representatives were involved in developing an appropriate use agreement between the two entities.

The County requires project proponents to participate in a development "plan check" when the agency reviews project drawings and specifications to verify their compliance with codes. The City submitted their plan, but the County had several concerns that needed to be addressed. The City and ML+A were patient and responsive to the County. They reworked their plan, resubmitted it, and were approved.

The project site is located within the Los Angeles County Flood Control District's right-of-way. In order for the City to build Los Angeles Riverfront Park and its pathway there, the two entities needed to draft, approve, and sign a land use agreement.

Establishing the agreement for 25 years was a resource demanding process. It required approvals from the City's Board of Recreation and Parks Commissioners, City Council, the Mayor's Office, the LA County Board of Supervisors, as well as both the City's and County's legal staff. Each step required advanced scheduling.

Operation and Maintenance

The City Department of Recreation and Parks operates and maintains the Los Angeles Riverfront Park as a public recreational facility.

Project proponents made a number of design decisions based on future park and pathway operations and maintenance. This includes ML+A's efforts to design a project that would allow for easy and minimal future maintenance. For example, during the plan check process, the County emphasized its preference to have a five-foot wide space for maintenance on either side of planting areas. However, because many of these areas within the Park are on a slope, leaving a five-foot area without plants could have created an erosion issue. ML+A's solution was to create an area for maintenance just above the slope.

Because operation and maintenance budgets are often limited, ML+A designed the Park and its pathway to minimize maintenance needs and costs. For example, the bioswale was designed to include a number of places that drain clogging can be easily removed. Plants were also selected to minimize the need to irrigate and were placed in a way so that they do not have to be frequently trimmed, if at all.

Figure 4 – 39: *Maintenance of the bioswale.*

Credit: Andrew Pasillas

Simgel Company, Inc. worked with the City during construction to ensure that planting occurred under opportune conditions. They planted trees, other vegetation, and hydro-seed at specific times of the year and under certain climate conditions to increase the likelihood that the plants would be well-established. Well-established plants require less maintenance.

GUIDANCE: LESSONS LEARNED AND BEST PRACTICES

This section presents important considerations for those interested in developing a Los Angeles River greenway path. A summary of lessons learned and best practices from projects presented earlier in this chapter are outlined below.

The three case studies featured represent different types of bike and/or walking path projects. They were developed in conjunction with other greenway features, ranging from habitat corridors with native species and storm water management areas, to functional artistic gates, seating areas, and water fountains. Different site conditions, funding levels, project partnerships, and other factors influenced the characteristics of each pathway and its greenway features. Despite this diversity, all three have successfully expanded the network of greenway paths, demonstrating how the linearity of the LA River can be utilized to enable active transportation and community connections. Table 4 – 8 summarizes the case studies and their key characteristics.

Table 4 - 8: Summary of the case studies and their key defining characteristics

	Valleyheart Greenway	Zev Yaroslavksy L.A. River Greenway Trail	Los Angeles Riverfront Park and Pathway
Summary	Transformed a quarter-mile strip of underutilized land into a pathway with a natural riparian corridor as well as community and student-driven design features	Fills a Los Angeles River greenway gap by transforming an inaccessible half-mile maintenance road into a public walking path with restored native habitat and storm water management features using creative fundraising	Developed a maintenance road into a half-mile walking and Class I bike path with natural and man-made features addressing multiple-users' needs
Project Lead	The River Project (nonprofit organization)	Community Conservation Solutions (nonprofit organization)	City of Los Angeles Bureau of Engineering, Recreational and Cultural Facilities Division (local government)
Partners	Carpenter Elementary School, County of Los Angeles Department of Public Works, Studio City Residents Association	Land IQ, VCA Engineers Inc., North East Trees, Owen Gabbert Designs, LA Conservation Corps, Save LA River Open Space	Mia Lehrer + Associates, Simgel Company, Inc.
Location	Studio City, City of LA: between Laurel Canyon Boulevard and Radford Avenue	Studio City, City of LA: between Coldwater Canyon Avenue and Whitsett Avenue	Sherman Oaks, City of LA: between Sepulveda Boulevard and Kester Avenue
Users	Pedestrians and cyclists (ADA compliant)	Pedestrians (ADA compliant)	Pedestrians and cyclists (ADA compliant)
Cost	$870,000	~$2.3 million	~$6 million (for both Reach I and II)

Table 4 - 8: Summary of the case studies and their key defining characteristics (cont. from previous page)			
	Valleyheart Greenway	Zev Yaroslavksy L.A. River Greenway Trail	Los Angeles Riverfront Park and Pathway
Funding	Proposition 204, the Safe, Clean, Reliable Water Supply Act of 1996 (allocated by California Coastal Conservancy and the Los Angeles and San Gabriel Rivers Watershed Council); LA County; and community fundraising	California Department of Transportation mitigation funding (allocated by California Natural Resources Agency); Proposition A, LA County Regional Park and Open Space funds, (allocated by Santa Monica Mountains Conservancy); the City of LA; Studio City Residents Association; Community Conservation Solutions; pro bono time from sub-contractors; LA County Board of Supervisors Zev Yaroslavsky; and The David and Lucile Packard Foundation provided a loan	Proposition K
Status	Complete (2004)	Anticipated completion (Fall 2016)	Complete (2015)

Table 4 - 9: Lessons learned: summary of challenges and strategies to overcome them		
Development Process	Challenges	Solutions
Community engagement	• Authentically engaging the community • Balancing the needs of diverse stakeholders	• Cast a wide net to reach a range of community and regional stakeholders • If possible, involve the public at all major project stages • Allocate sufficient time and resources for community outreach and community engagement • Partner with experts and/or seek grants that reward authentic community engagement
Design	• Educating the community to genuinely participate in the design process • Balancing unique designs with permitting requirements • Accommodating the interests of multiple users	• Pursue community-driven design processes • Use common design standards such as the Los Angeles River Master Plan's Landscaping Guidelines and Plant Palettes[11] • Communicate with permitting agencies to ensure that designs meet requirements • Utilize common signage standards such as Los Angeles River Master Plan's Sign Guidelines[12] to help direct users on how to share the pathway

11 Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes. (2004). Retrieved from https://dpw.lacounty.gov/wmd/watershed/LA/LAR_planting_guidelines_webversion.pdf

12 Los Angeles River Master Plan Sign Guidelines. (2003). Retrieved from https://dpw.lacounty.gov/wmd/watershed/LA/FINALsignGUIDELINES.pdf

Table 4 - 9: Lessons learned: summary of challenges and strategies to overcome them (cont. from previous page)		
Development Process	Challenges	Solutions
Physical sitting	• Potential sites may be limited and/or unusual shapes	• Be creative when considering potential sites • Meet with permitting agencies to discuss site conditions that may affect future permitting processes
Cost	• Balancing upfront costs with longer term maintenance costs • Managing unforeseen site conditions • Covering project costs up front	• Blend man-made (i.e. hardscape) and natural (i.e. softscape) features: hardscape materials, like asphalt paths, do not require much maintenance, but can be costly upfront; softscape materials, such as dirt paths, can be less costly but often require more maintenance • Budget extra time and money for unexpected site conditions and other issues • Identify entities that can loan cash to cover upfront cost (see below)
Funding	• Identifying sources • Covering all project costs • Addressing strict guidelines, including grants provided on a reimbursement basis	• Consider potential funding sources when developing project goals and partners • Leverage partnerships and consider unique approaches for limited funding opportunities • Be creative; plan to piecemeal grants together • Understand all funders' requirements; communicate with them clearly and often • Identify entities that can loan cash to cover upfront costs, like The David and Lucile Packard Foundation or City of LA's Public Works Trust Fund
Permitting and Use Agreements	• Identifying and connecting with the appropriate agency staff • Managing project delays, including multiple project reviews	• Identify direct points of contact early; partner with entities familiar with permitting projects along the LA River; ask questions • Share partial designs with permitting agencies for pre-review to avoid future issues • Be persistent in seeking updates from permitting agencies • Be cooperative and make changes when necessary
Operations and Maintenance	• Identifying a suitable management entity • Sustaining sites without dedicated funding	• Consider partnering with an entity experienced in maintaining greenway paths, such as the Mountains Recreation and Conservation Authority • Develop a maintenance budget when designing the project plan • Consider selecting materials and vegetation that require little to no maintenance
Implementation Schedule	• Managing unexpected delays and changes in the project timeline	• Expect delays, allocate extra time, and keep partners and funders up to date on progress • Ensure partners agree on expectations from the start • Demonstrate leadership by making adjustments when necessary

How do I lay the foundation for a pathway project?

Establishing a Vision

A foundational first step is to identify opportunities to create additional or improved pathways along the LA River and then develop a vision. For example, Community Conservation Solutions identified: 1) a lack of public access to the LA River in Studio City; 2) an underutilized maintenance road; 3) a need to restore native habitat; and 4) an opportunity to connect three miles of previously segmented greenway. This ultimately led to the development of the Zev Yaroslavsky L.A. River Greenway Trail.

Informal community usage of sites can help identify where formal greenway paths should be developed. Like the Zev Yaroslavsky L.A. River Greenway Trail, the Los Angeles Riverfront Park and Pathway project transformed a maintenance road that was technically closed to public use. The fact that community members used it despite barriers to accessibility indicated high public demand for an official pathway. Similarly, local residents proactively improved the site of the Valleyheart Greenway before it was developed. They cleaned up trash and planted flowers. It was apparent that locating a safe and accessible pathway there was a logical alternative for pedestrians to avoid busy streets.

Figure 4 – 40: *Stairs from the adjacent neighborhood to access the Valleyheart Greenway.*

Credit: Andrew Pasillas

Leadership and Collaboration

Complex LA River greenway path projects can be successfully led or strongly influenced by community members. The development of Valleyheart Greenway is a prime example of how a small, new community-based organization, The River Project, successfully implemented a path project. Often nonprofit organizations, when compared to government agencies, can lead projects more nimbly and are not subject to as many development requirements, like competitive bidding for construction. Yet, greenway path projects should also involve government agencies because they often have expertise, site jurisdiction, and permitting authority. Often, agencies can be official partners and funders of greenway developments.

A lesson learned from the case studies is the importance of working collaboratively and creatively with an array of public, private, and civil society partners. For example, The River Project worked closely with the Los Angeles County Department of Public Works, Carpenter Elementary School, and others to develop the Valleyheart Greenway. By jointly promoting the project and sharing in milestone successes along the way, partners were empowered and committed to the long-term success of the project.

It is important to involve key partners early in the process, even if only to notify them of the project concept. In particular, the U.S. Army Corps of Engineers (USACE) and various LA County departments, including the Flood Control District and broader Board of Public Works, should be consulted. These entities share control over the LA River and how it operates as a flood control system. While their main focus is to protect the structural integrity of the channel, they are becoming more open to the role that pathway projects can play in LA River greenway utilization.

Figure 4 – 41: *Paved area allows maintenance vehicles to easily access the Valleyheart Greenway.*

Credit: Andrew Pasillas

Sharing early designs with permitting agencies can shorten the overall project review and permitting process. For example, when designing the Los Angeles Riverfront Park and its pathway, Mia Lehrer + Associates submitted their partial plan for pre-review. This allowed the agencies to consider and direct the designer on whether or not proposed features may impact flooding. We recommend this approach to mitigate issues early rather than to correct them later.

There are also benefits to early and consistent communication with local elected officials, such as councilmembers and district supervisors. As the Zev Yaroslavsky L.A. River Greenway Trail Project demonstrates, elected representatives can provide critical financial and community support for projects. It is important to think about how to engage and incentivize community leaders to prioritize your project to meet their goals.

Community Engagement

When developing a project work plan and overall strategy, think about how community members could participate at each stage of greenway path development. Although community engagement can be time consuming, there are many benefits. Involving the community early in the process can drive a project forward and early community support for a project can help avoid project delays at later stages. Local residents who know the area can also provide important perspectives on how to design a project to maximize community benefit and avoid or address potential unintended consequences associated with it.

There are a variety of ways to interact with the public, from basic outreach to genuine community engagement and empowerment. For example, the City of LA convened a Local Volunteer Neighborhood Oversight Committee as a way to share information and receive community feedback regarding the development of the Los Angeles Riverfront Park and its pathway. Community-based organizations are often particularly well suited to coordinate public engagement in the local community. The River Project led a successful grassroots effort that produced outstanding results. The River Project went door-to-door to nearby residents asking them to be part of the process and also involved local children during the design stage of developing Valleyheart Greenway and its amenities. A couple of years later, those same kids helped maintain the pathway as a high school service project. In the future, perhaps they will bring their children to the pathway and its popular park. This is a much different outcome than what would occur if stakeholders just attended one community meeting about the project.

Timeline

While future projects will differ in complexity, an average project timeline is approximately three years, beginning with community engagement and ending with a “grand opening”. Design, permitting, and land use agreements alone can take 12 to 18 months to complete. However, project delays should be expected and require that project proponents be responsive and flexible. Delays can create an opportunity to reevaluate expectations and priorities. They can also be a significant source of lessons learned for future project phases or new greenway developments.

What are important design considerations?

Site Location

Pathways along the LA River are implemented along linear land areas that provide a clear separation from vehicular traffic. We recommend selecting sites for future pathways that enable an efficient, continuous, and accessible network. An efficient pathway allows users to travel directly to their destinations.

Filling in current pathway gaps to create a complete network can support an intra-urban active transportation network linking both local and regional destinations. Each case study featured connected its path to an existing one. For example, the Valleyheart Greenway connects with the Studio City River Greenway. Pathway sites should also be selected to allow for local and regional accessibility, considering the location of current and planned transit stops and parking facilities. The project proponents for the Zev Yaroslavksy L.A. River Greenway Trail, for instance, emphasize its proximity to a nearby public parking garage, which Community Conservation Solutions is proposing to repurpose to also serve as a bicycle hub.

Design

LA River pathways should be representative of distinct neighborhoods and communities. Key considerations when designing a pathway are community feedback, intended use and users, current site conditions, necessary amenities, as well as local and regional connectivity and accessibility.

Figure 4 – 42: *Spoke Bicycle Cafe in the Elysian Valley provides bikeway users with drinks, food, bicycle repairs, and a social space.*

Credit: Andrew Pasillas

Encouraging stakeholder feedback in the design process can yield long term community support and ownership of new pathway projects. For example, proponents of Valleyheart Greenway involved local students to help design unique features along the pathway, including "Rattlesnake Wall" and butterfly-shaped benches.

The design of a pathway should foster efficient local and regional active transportation. Standards, such as those defined by the California Department of Transportation's Highway Design Manual, should be used when appropriate. For example, the Class I Bikeway at Los Angeles Riverfront Park is completely separated from motorized traffic for the exclusive use of bicycles and pedestrians.[13]

Figure 4 – 43: *The Los Angeles River Headwaters' pathway in Canoga Park being utilized by a range of user types.*

Credit: Andrew Pasillas

Figure 4 – 44: *The West Valley Bikeway in Canoga Park is a Class I Bike Path with amenities such as lighting and signage.*

Credit: Andrew Pasillas

Figure 4 – 45: *Select segments of the Los Angeles River Headwaters Project in Canoga Park feature meandering, paved walking trails in addition to a primary path.*

Credit: Andrew Pasillas

13 Highway Design Manual. (2015). Retrieved from https://www.google.com/webhp?sourceid=chrome-instant&ion=1&espv=2&ie=UTF-8#q=dot%20chapter%201000%20design%20material

Designers should consider if the pathway is to accommodate pedestrians, bicyclists, and/or equestrians. Each user must be able to use the pathway safely. Pathways can vary in length, width, and material. The selection of pathway material—decomposed granite, enhanced soil, or asphalt—should be determined by user needs and project budget. Asphalt pathways are the most accommodating for bicyclists but are more expensive than decomposed granite and packed dirt trails. Dirt is the least expensive material to use but may require more maintenance when compared to asphalt paths.

Budget considerations will also affect which amenities and greenway features to include along the pathway. These features include walls and fencing, landscaping, as well as signage, lighting, benches, tables, bike racks, fitness equipment, and, where feasible, restrooms and/or showers. Fencing and walls can be designed to be more than just functional: they can reflect the community's history, culture, and character. For example, proponents of Valleyheart Greenway built a student-designed wall with a rattlesnake on it. Murals can be a great way to involve local artists and to promote public support for the project.

The placement of amenities will also be driven by the physical conditions of a project site. Physical barriers, such as mature trees, can restrict or enhance certain design approaches. For example, the location of the Great Toad Gate, which was designed by local students and included in the development of Valleyheart Greenway, had to be moved from its originally planned location due to a telephone pole. The LA River's linearity also somewhat restricts pathway designs.

Figure 4 – 46: *Fitness equipment amenities on the West Valley Bikeway in Canoga Park.*

Credit: Andrew Pasillas

Figure 4 – 47: *Examples of directional, instructive, and informative signage found throughout the LA River corridor.*

Credit: Andrew Pasillas

Pathway accessibility originates primarily at pathway ends, via ramps, which should be developed in compliance with the Americans with Disabilities Act. These ramps can be designed to allow vehicular access, which can help with maintenance and/or emergency response. The demand for midpoints of access is also common, given that pathways can be long. Adjacent land uses will be influential in determining where additional access points should occur. The projects featured in this chapter include a range of accessibility options that allow for easy and practical access to their pathways. It is also important to keep in mind that pathway design can only direct access to a certain extent. Eventually, users may establish their own access points, which can impact landscaping. For more information, see Chapter 2: Access to the Los Angeles River.

Landscaping is another important design consideration that may impact future maintenance of the site. For example, drought-tolerant and native vegetation requires less trimming and watering than other plants. It is also useful to consider opportunities to restore the LA River's natural environment. The Zev Yaroslavksy L.A. River Greenway Trail exemplifies a comprehensive effort to restore the native ecosystem for wildlife and to improve storm water management. Old, invasive species were removed and over 4,000 native species were planted.

Figure 4 – 48: *A range of vegetation was used to landscape the Los Angeles Riverfront Park's pathways.*

Credit: Andrew Pasillas

What are important cost and funding considerations?

As presented earlier, the cost of projects featured in this chapter ranged from $870,000 to over $6 million. This is because projects differ in length/size, features and amenities, materials, and existing site conditions. For example, projects like the Los Angeles Riverfront Park that utilize asphalt will have a higher material cost than projects, such as the Valleyheart Greenway, which incorporate a combination of decomposed granite and concrete for the pathway material.

Project proponents should attempt to balance man-made hardscape elements, such as paved walking areas with softscape elements, such as landscaped vegetation. The immediate- and long-term maintenance costs associated with each type of greenway feature should also be considered. For example, using vegetation as a natural wall may cost less upfront when compared to a concrete wall, but could require significant ongoing maintenance attention.

Figure 4 – 49: *Studio City River Greenway, adjacent to the Valleyheart Greenway, relies heavily on hardscape elements.*

Credit: Andrew Pasillas

As with all development projects, unexpected costs can occur at any state of development. This includes additional monies needed for unforeseen conditions or project delays. For example, The River Project, which led the development of the Valleyheart Greenway, did not expect LA County to install drainage cells at each end of the pathway instead of wildflowers or vegetation as they had planned. The installation of the drainage cells as well as their removal (because they were not installed properly) added to the project's overall budget. Setting aside 10 to 15% of project costs for contingencies can be a good strategy. Prioritizing amenities and greenway features by considering their associated costs can also help project proponents move forward when there are budget constraints.

Funding Sources

Money to fund the development of LA River pathways must often be obtained from multiple sources. Building partnerships is crucial to overcoming this challenge. For example, through its years of work on comparable efforts, Community Conservation Solutions has developed strong relationships with potential funders. They successfully secured over $2 million in state and county grants from numerous agencies to build the Zev Yaroslavksy L.A. River Greenway Trail. They also creatively incentivized funders to give money in return for the opportunity for naming rights for the trail, trees, and other features along the path.

To successfully apply for grants, project proponents must have a clear understanding of application requirements and may need to complete pre-development work and a plan for operations and maintenance. Project proponents should have a good concept

of what the project will look like, and utilize staff time or consult with partners to translate community needs into a clear vision for design. It is essential that applications are as accurate as possible. We recommend not overselling project features if it is unlikely that they will be implemented. In order to fulfill grant application requirements, many funders require the lead project proponent to commit to or to identify an entity to conduct project operations and maintenance. The lead entity may seek a partner with strong experience in operations and maintenance, such as the Mountains Recreation and Conservation Authority, early in the process.

Many grants do not provide a lump sum and instead provide reimbursements on expenditures over time, meaning that the project developer has to put forward money to cover expenses up front. It can then take months before a government funder issues repayment. To finance project development, Community Conservation Solutions acquired a $700,000 bridge loan from The David and Lucile Packard Foundation. This investment program provides low-interest loans for projects already funded by secure sources. This and other types of loan programs, like the City of LA Public Works Trust Fund, can help to address cash flow concerns.

What are important planning and permitting considerations?

Working with government bureaucracies can take time. Having a main point of contact at LA County helped streamline the review process for the Los Angeles Riverfront Park and its pathway. However, this is not standard: be prepared to engage with multiple points of contact, in multiple divisions or departments. It takes persistence to regularly communicate with agency contacts.

Because LA River greenway path projects are often innovative, permitting agencies may encounter new concepts that require review. While projects should ideally reflect the needs and characteristics of the local community, designers should also utilize common design standards for which permitting agencies are familiar. For instance, designers should consult the Landscaping Guidelines and Plant Palettes from the Los Angeles River Master Plan.[14]

It is also important to communicate with permitting agencies early in the planning process to identify permitting requirements and to ensure they will be met through proposed designs. In particular, see LA County Flood Control District's (LACFCD) submittal and permitting requirements.[15] The U.S. Army Corps of Engineers, Los Angeles District (USACE) also has information available about its permitting procedures.[16] USACE and LACFCD review and approve projects to ensure they will not negatively affect the function of the LA River channel for flood control. Each project along the LA River has different site conditions that USACE must understand in terms of its potential effect on the structural capacity of the river channel walls. For instance, USACE asked the City of LA to avoid using heavy machinery to construct the Los Angeles Riverfront Park and its pathway for fear that it could negatively affect the channel wall. As a result, the City did some construction work manually or used smaller vehicles and machinery. This affected project resources and the project timeline.

14 Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes. (2004). Retrieved from https://dpw.lacounty.gov/wmd/watershed/LA/LAR_planting_guidelines_webversion.pdf

15 Flood Control District Permits. (2016). Retrieved from http://dpw.lacounty.gov/ldd/floodcontrol/permitsubmittals.cfm

16 Permit Process. (2016). Retrieved from http://www.spl.usace.army.mil/Missions/Regulatory/PermitProcess.aspx

Challenges can be anticipated during LA County's plan check process, which requires the review and approval of project drawings and specifications to verify compliance with codes. The procedure will be a learning experience and requires time to work through. Solutions, such as outlining expectations among partners at the project's onset, may avoid later complications, such as multiple agency reviews. However, be aware that setbacks do happen. For instance, the development of the Los Angeles Riverfront Park and its pathway was delayed numerous times due to permitting issues associated with both minor and major alterations to design plans. Once essential planning approvals had been worked through, project proponents needed to ensure that certain deadlines were met.

Use Agreements

The need to obtain land use agreements varies along the LA River. In each case examined in this chapter, the Los Angeles County Flood Control District owns the path right-of-way. Project proponents had different approaches to securing land use based on their partnerships with the County. For example, The River Project formed a strong partnership with the County, which expedited the process for the Valleyheart Greenway project. In contrast, the City of Los Angeles had to navigate a resource intensive multi-step process to secure a use agreement with the County for the Los Angeles Riverfront Park.

Negotiating use agreements can take a long time. For example, development of the Los Angeles Riverfront Park and its pathway required that the language for the 25-year use agreement between the LA County Flood Control District and the City of LA be approved by the City's Board of Recreation and Parks Commissioners, City Council, the Mayor's Office, the LA County Board of Supervisors, as well as both the City's and County's legal staff. Each step required advanced scheduling. Project proponents should engage with public stakeholders to ensure that community leaders, such as council members, make the project's development a clear priority. This can help guide agency staff to prioritize crucial development phases, such as use agreements.

What are important project maintenance considerations?

It is important to think about future pathway maintenance early in the planning and design of a project. Project leads may want to work alongside designers to select plants and materials that will minimize maintenance needs and costs. Native vegetation may require less watering and trimming than non-native species. The Los Angeles River Landscape Maintenance Manual provides helpful guidance on plant selection and care.[17] Project leads may want to select a project design consultant experienced in designing projects that minimize maintenance needs. Two of the three featured projects worked with the landscape architect firm Mia Lehrer + Associates, reportedly because of their expertise in designing LA River greenway projects that minimize maintenance needs. It is also important to select caregivers who understand how to differentiate between native and invasive plants.

17 Los Angeles River Landscape Maintenance Manual. (2002). Retrieved from http://www.ladpw.org/WMD/watershed/LandscapeMaintenanceManual.pdf

Figure 4 – 50: *Regular maintenance is necessary to ensure safe accessibility to and efficiency of the greenway.*

Credit: Andrew Pasillas

Figure 4 – 51: *Pathway construction material should be considered for both short- and long-term maintenance requirements.*

Credit: Andrew Pasillas

Permitting agencies like LA County often require maintenance agreements to be in place before they approve any aspect of the project. Project proponents should consider partnering with an entity experienced in operations and maintenance, such as the Mountains Recreation and Conservation Authority. But even with a maintenance partner, project leads may want to stay very involved in maintenance. For example, The River Project transferred maintenance responsibilities over to the County but continues to monitor the site and to cooperate with the County to address native plant care and other maintenance issues.

Maintaining a pathway is critical for its long-term success as a community asset. Small things that go unaddressed can have a large impact on both public perception and usability of the pathway. For example, minor cracks or the presence of sand, dirt, or gravel on a paved or decomposed granite pathway could negatively affect the safe mobility of cyclists or persons with physical disabilities. As much as possible within budget, address nuisances along the pathway, such as trash and graffiti, which could affect community perceptions about the path.

Creating a sense of community ownership for a pathway can motivate users to help protect a valuable asset for which there has been a significant investment. After all, pathways along the LA River should represent each unique neighborhood.

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Chapter 5

BRIDGES across the Los Angeles River

INTRODUCTION

Definition and Benefits

This chapter focuses on non-motorized bridges across the Los Angeles River (LA River) and its tributaries for pedestrians, cyclists, and equestrians. Bridges for active transportation are also known as footbridges, pedestrian crossings, and multi-use bridges. They may vary in length and design, but the fundamental purpose is to connect two sides of the waterway, especially along greenway paths. At some locations, these bridges cross the river's main channel. At others, they cross a tributary, which flows into the main channel, thus providing continuous movement along one side of the river.

Figure 5 – 1: *Simple bridge crossing over a drainage weir enables a continuous pathway connection on the south bank of the Los Angeles River Headwaters project, just south of De Soto Avenue.*

Credit: Andrew Pasillas

Figure 5 – 2: *Cyclist walking across Sunnynook Footbridge in Atwater Village.*

Credit: Andrew Pasillas

The following are some of the many benefits of bridges:

- Mobility and Safety: Footbridges can create a continuous, uninterrupted, and secure active transportation network along the LA River greenway. They also link adjacent neighborhoods and broader communities that have been historically disconnected.
- Accessibility to Economic and Social Centers: Bridges provide community members with access to important destinations such as transit stations, schools, parks, employment centers, and shopping districts.
- Aesthetics: By including artistic elements in construction designs, bridges can enhance user experience by improving the aesthetics of the LA River greenway or even become a destination in and of themselves. Design and artistic elements can be created by local community members strengthening community identity and pride.
- Health: Many LA River-adjacent communities are heavily burdened with environmental hazards, and thus have much to gain from the physical and mental health benefits of safe and continuous river pathways, which include increased physical activity, active commuting, contact with nature, and community connectedness.

Although this chapter focuses on bridges, many proposed bridges along and across the LA River are part of larger, more comprehensive projects that involve other greenway elements such as park space, pathways, and community access points. Organizing this Guide by four project archetypes provides a logical structure for readers to navigate, but we recognize that this organization requires a simplification of projects that involve a combination of improvements rather than merely one type of feature. It is important that bridges are one part of a complete and comprehensive river greenway. We also recognize that a project-by-project approach to river revitalization can sometimes feel piecemeal. Our aim is to accurately document what has happened in the past to help inform and inspire future efforts that over time may become ever more transformative and comprehensive.

Importance: Current Conditions along the LA River

Pedestrian bridges over the LA River are geographically concentrated, are few in number (relative to the number of bridges for cars and trucks), and often were built with a focus on utility, not aesthetics. For example, there are no pedestrian bridges in the lower half of the LA River, south of the City of Los Angeles. The lack of connectivity for these 17 miles fails to leverage the value of the established pedestrian pathway along this portion of the LA River. Instead, the river is a barrier to community connectivity and accessibility.

Figure 5 – 3: *View of the LA River bike path south of the City of LA, showing the lack of access from one side of the waterway to the other.*

Credit: Henry McCann

Figure 5 – 4: *A bridge in Studio City allows for pedestrians to pass over the LA River but does not provide access to the LA River.*

Credit: Andrew Pasillas

Most of the 80 bridges over the LA River were designed for vehicles, not pedestrian and cyclists. The pedestrian crossings that do exist, are decades old and are intended to be purely utilitarian pieces of infrastructure, evident through their structure and materials used. Some of these bridges are narrow and wooden, others have wrought iron fencing or metal truss crossings, and some are simple, bulky concrete structures raised over the channel.

Figure 5 – 5: *Pedestrian crossing the Colfax Avenue footbridge in Studio City.*

Credit: Andrew Pasillas

Current Plans

Interest in building bridges across and along the LA River has increased recently. It has resulted in a number of exciting plans and projects. The County's Los Angeles River Master Plan recommends that continuous bike paths and multi-use trails be placed along the LA River, which requires bridges. The City of LA's Los Angeles River Revitalization Master Plan (LARRMP) provides more specific direction on where to prioritize bridge development, including 1) at the end of local streets; 2) to connect to major destinations; 3) at tributary confluences; and 4) next to vehicle crossings where expanding existing facilities to accommodate active transportation users would be more costly than developing a new footbridge. As such, the LARRMP recognizes that bridges for cars and trucks will continue to be relied upon by non-motorized users and calls for pedestrian and bicycle amenities in these areas.

Strategically Prioritizing New Bridge Creation

While the benefits of bridges can be significant, they can also be costly and difficult to implement. Therefore, it is important for project proponents to strategically prioritize new bridge investments. Compared to other greenway projects, pedestrian bridges are hard to modify or enhance once built. Therefore, avoiding the need for future changes is a priority. We offer the following questions to help prioritize and plan for new footbridges:

1. Why is a bridge needed in this particular location?
2. Who will be the beneficiaries of this bridge and what are their needs?
3. What will be the large-scale social benefits of this bridge (i.e. improves bicyclist/pedestrian safety, supports local economies by improving access to businesses, strengthens neighborhood connections, or provides access to key destinations)?

Learning from Case Studies

Several efforts are underway to build bridges along and across the LA River. In this chapter, we profile three such efforts: 1) Aliso Creek Confluence bridge; 2) Jewel at the Bend bridge; and 3) La Kretz Crossing. Unlike most case studies in this Guide, every bridge story is of a current, ongoing effort rather than a completed project. The least complete project is presented first.

We feature these specific case studies for several reasons. First, because they are diverse and their best practices and lessons learned can be applied to future footbridge developments. Second, we were able to gather a great deal of primary and secondary source information in order to fully document projects. Since many existing bridge projects were completed a while ago, it was difficult to locate project managers and to learn about their enterprises. Finally, we wanted to highlight current efforts that are taking a more comprehensive approach to defining footbridge function—creating bridges that are destinations in and of themselves.

The Aliso Creek Confluence bridge case study is written as an abridged profile representing an example project that is small in scope, but has significant connection and mobility implications. The Jewel at the Bend bridge and La Kretz Crossing development projects are documented as full case studies. Both stories include their origins, goals, and timeline; project proponents and community collaborators; site selection and design; cost and funding; permitting and use agreements; as well as operations and maintenance. The chapter ends with guidance on how to pursue similar projects as well as a summary of best practices and lessons learned. The following summaries highlight notable elements of each project:

Table 5 - 1: Aliso Creek Confluence Bridge	
Form and Scale	Utilitarian footbridge that will span approximately 60 feet across a LA River tributary—the Aliso Creek Confluence
Expected Benefits	Recreational loop connection, accessibility to a new two-acre park, enhanced mobility for pedestrians
Keywords	Preliminary development, small scale and cost, confluence bridge
Lead Proponents	Trust for Public Land
Status	50% of construction drawings completed as of Spring 2016

Table 5 - 2: Jewel at the Bend Bridge	
Form and Scale	Two-span curvilinear concrete bridge that will stretch approximately 320 feet across the LA River's main channel
Expected Benefits	Pathway and park connections, improves commuting between local areas of employment, social gathering space, landmark
Keywords	Feasibility study, community-driven design
Lead Proponents	City of Glendale
Status	Preferred bridge design selected as of Spring 2015

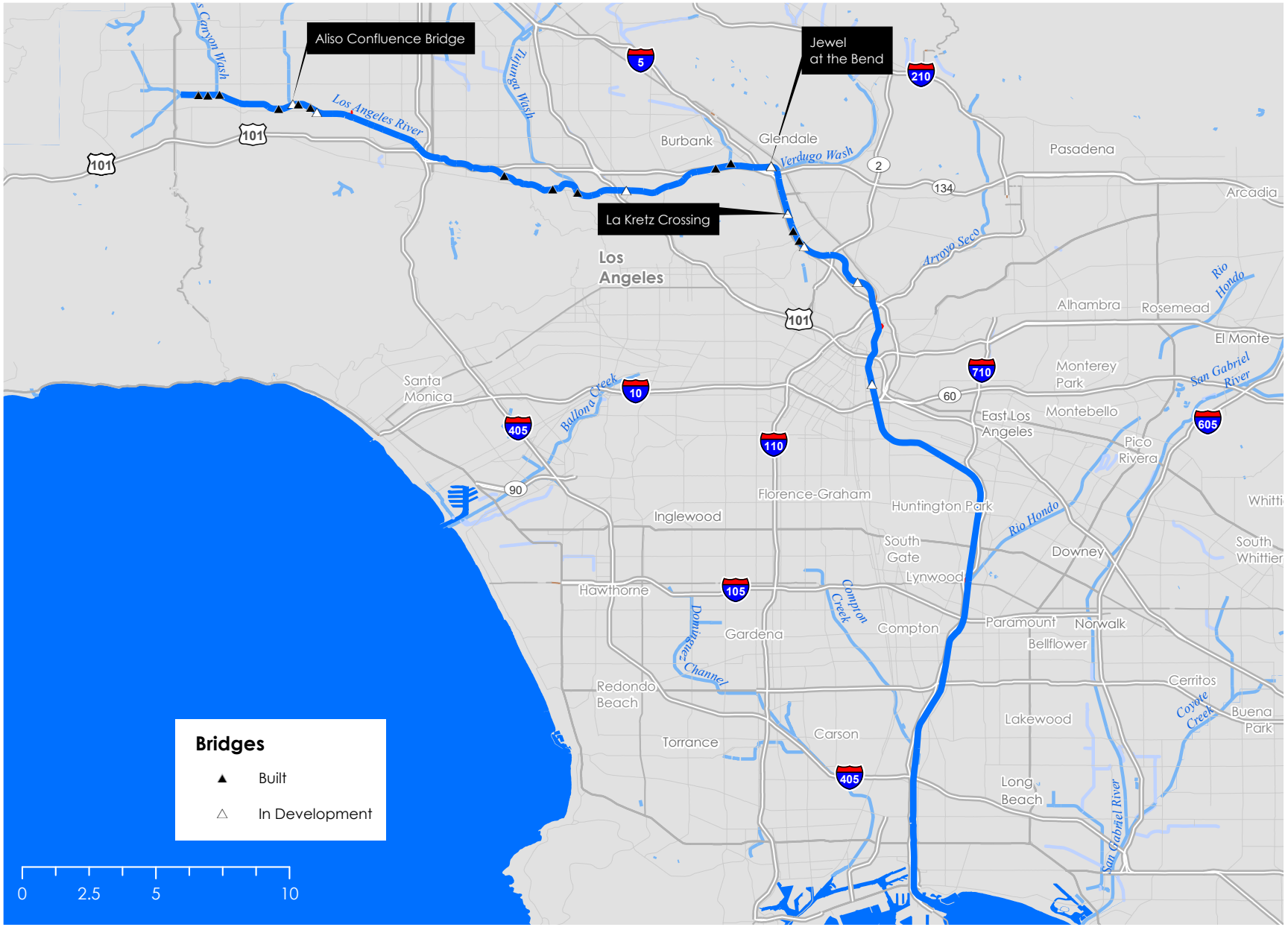
Table 5 - 3: La Kretz Crossing	
Form and Scale	Highly aesthetic concrete and cable-stayed bridge with an in-channel pylon design that will span approximately 390 feet across the LA River's main channel
Expected Benefits	Accommodation of multiple uses, safe connection to existing bike path and parks, enhanced community and LA River identity
Keywords	Cable-stayed design, equestrian crossing, permit coordination, private donor
Lead Proponents	River LA
Status	Anticipated completion in late 2017

Figure 5 – 6: *Rendering of the La Kretz Crossing that will offer improved mobility and connection and demonstrate a new perspective on LA River revitalization.*

Credit: River LA

Other bridge projects that were underway during the development of this Guide, but are not featured here, include the proposed Taylor Yard Bikeway and Pedestrian Bridge along San Fernando Road, which will focus on aesthetics and include a recycled water line; the Glendale Bridge Improvement Project, which proposes to restore a historic bridge for vehicles and build a new footbridge; and the planned pedestrian bridge crossing that will be part of LA River Bike Path from Lankershim Boulevard to Barham Boulevard.

Figure 5 – 7: *Pedestrian bridges over the Los Angeles River, labeling those featured in this chapter*



Credit: UCLA Luskin Center and Norman Wong, UCLA Lewis Center

ALISO CREEK CONFLUENCE BRIDGE

The Los Angeles River & Aliso Creek Confluence Project, previously known as the Reseda River Loop, is a multi-phase project that involves the two-acre Confluence Park (which broke ground in November 2015), a refurbished quarter-mile nature trail, a one-mile bike path, and a pedestrian bridge (the Aliso Creek Confluence bridge). This planned bridge is meant to address a common issue along the LA River corridor—tributary crossing. The footbridge will benefit LA River-adjacent communities by connecting the pathways and the new park to create a recreational loop.

Although development of the Aliso Creek Confluence bridge was on hold due to funding issues and other constraints at the time of this Guide's development, the project proponent has established valuable partnerships to enable its future completion. The following paragraphs provide details regarding bridge development, including progress thus far and key milestones.

The Los Angeles River & Aliso Creek Confluence project was originally outlined as one of 240 potential LA River projects in the Los Angeles River Revitalization Master Plan (LARRMP). In 2009, the Los Angeles River Project Office (now known as LARiverWorks, within the Office of Mayor Eric Garcetti) identified it as an important demonstration project due to its potential impact on multiple communities and its comprehensive nature—ultimately incorporating pathways, a park, and a bridge.

The Trust for Public Land (TPL) is the lead project proponent of the Los Angeles River & Aliso Creek Confluence project, including its proposed bridge. TPL has an extensive history working on dozens of open space projects in the Greater LA area, including many along the LA River.

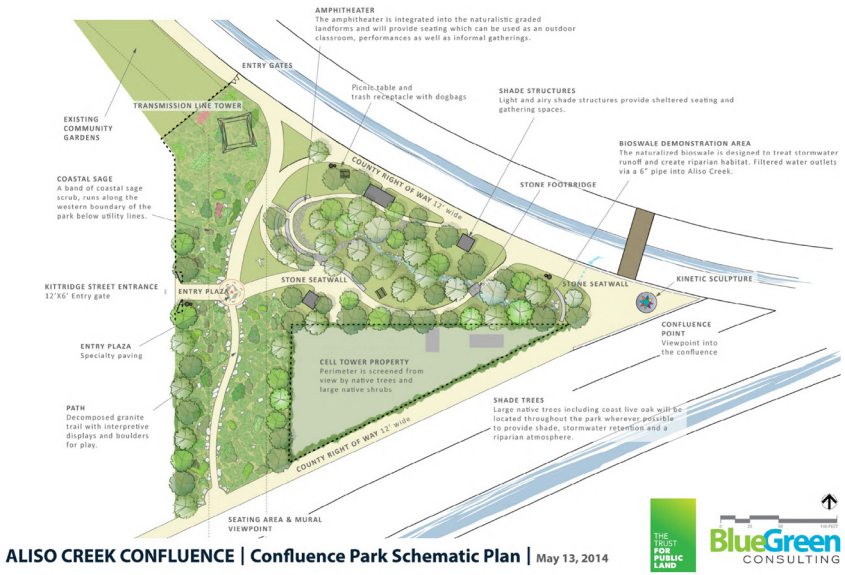
The proposed bridge would be the keystone of the Los Angeles River & Aliso Creek Confluence Project because it would increase access to and mobility options throughout the greenway. It will benefit a range of local users, such as students, residents, and community gardeners.

Figure 5 – 8: *Community gardeners along the Aliso Creek channel could benefit from the Aliso Creek Confluence bridge's development.*

Credit: Andrew Pasillas

Key stakeholders for the Los Angeles River & Aliso Creek Confluence Project include a range of public, private, and government representatives who have voiced their interest through one or more of the 13 public workshops conducted over six months in 2009. These meetings helped to define a specific project goal to increase usable open space for residents to walk, jog, bike, and explore. While the pedestrian bridge was recognized as a crucial component of the recreational loop, there was minimal in-depth discussion about bridge type, material, and cost in these early meetings. TPL emphasized to stakeholders that bridge functionality would be the primary design consideration.

Figure 5 – 9: *Schematic plan of Confluence Park. The brown line shows the approximate location of the bridge over Aliso Creek.*



Credit: The Trust for Public Land and BlueGreen Consulting

Figure 5 – 10: *Current condition of Aliso Creek Confluence.*

Credit: Andrew Pasillas

The bridge design goal is straightforward: develop a pedestrian crossing based on existing models that is functional and simple in both structure and material while being aesthetically pleasing. The final design and form will be influenced by which entity is responsible for the long-term operations and maintenance of the completed bridge.

Compared to other LA River bridge projects, the Aliso Creek Confluence bridge will be relatively inexpensive. An early estimated cost is approximately $600,000, which is still a large amount of money to be covered by one grant. Although TPL has pursued both public and private funding opportunities, they have not yet secured funding for the entire project. The footbridge will play an important role in LA River revitalization. However, its small size makes it difficult to fund as a stand-alone project. The organization and its partners continue to research potential grant opportunities.

In developing the Los Angeles River & Aliso Creek Confluence Project, TPL spent three years establishing use agreements with the LA County Flood Control District (LACFCD), the City of Los Angeles Department of Water and Power, and the City's Department of Recreation and Parks to develop the park as well as the right-of-way along the west side of Aliso Creek. Although the bridge will be located within this area, the use agreement does not include the bridge because typically, public agencies require funding to be in place before executing use agreements. Not only will funding need to be secured, but responsibility for bridge operation and maintenance will need to be established before the use agreement can be amended.

Identifying an entity to manage future footbridge operations and maintenance has been a significant challenge. While the City's Department of Recreation and Parks has agreed to operate and maintain the walking trail and park, they have not agreed to manage the footbridge because it is outside their usual scope of responsibility. Organizations such as the City's Department of Public Works already have a large bridge maintenance program with established standards and procedures. They could potentially take on management of the Aliso Creek Confluence bridge.

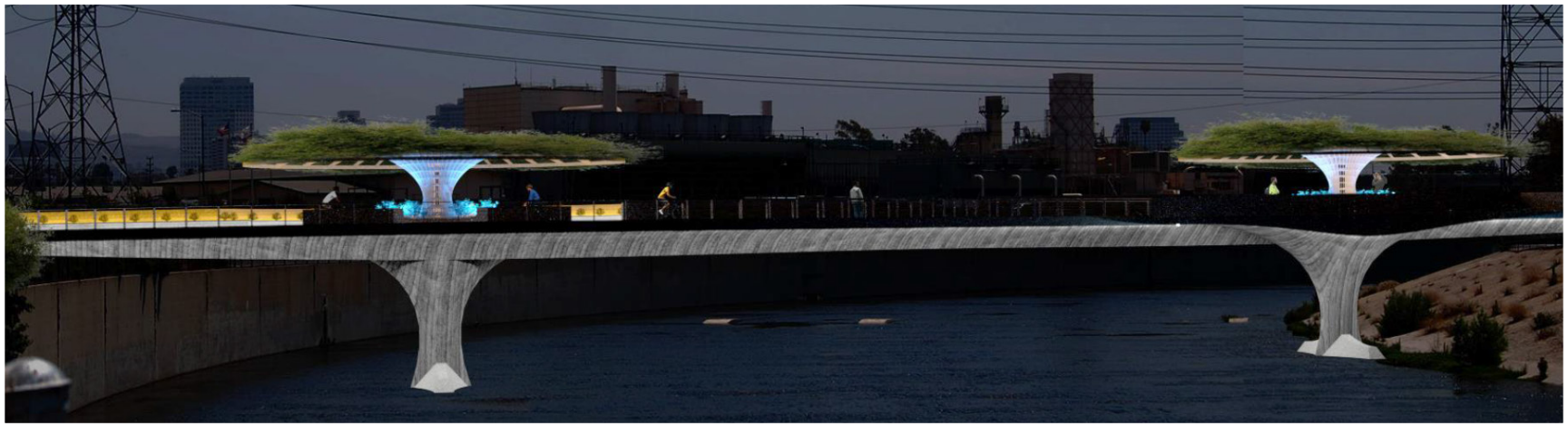
As of December 2015, TPL began working with the City's Department of Recreation and Parks and LACFCD to consider a new use agreement for the walking path and bridge. As of the development of this Guide, half of the construction drawings for the bridge had been completed and were being submitted to LACFCD for review. TPL also held multiple meetings with project partners to discuss upcoming grant opportunities to cover the cost of developing the walking path, as well as engaged several potential donors regarding financing the bridge. TPL worked with an intern from the California State University at Northridge to quantify probable maintenance costs for this type of bridge. The goal is to present concrete data to entities that would consider maintaining the bridge. Moving forward, TPL planned to work with project partners to craft creative solutions to the challenges presented by this type of multi-agency project.

CASE STUDY #1
Jewel at the Bend Bridge

The Glendale Narrows Riverwalk (Riverwalk) runs along the Los Angeles River's north bank from the Bette Davis Picnic Area to Interstate 134, opposite Griffith Park. Once complete, the Riverwalk will provide about one mile of pedestrian and biking trails with parks, rest areas, scenic overlooks, an equestrian facility, interpretive signage, public art, and a bridge connecting the Riverwalk to Griffith Park and/or North Atwater.

Community meetings held in 2010 for the Riverwalk project initiated discussion about the entire project and more specifically the role of a bridge as part of the project's three phase approach. Phase I of the Riverwalk project was completed in 2012 and includes a mile of recreational trail, two parks, public art installations, and an equestrian facility. Phase II, which is expected to be completed in 2016, consists of the design and construction of two parks (Flower Plaza Park and Confluence Park, where the Verdugo Wash meets the LA River, adjacent to Interstate 134). Phase III, which is the focus of this case study, includes preparing engineering studies for a future bridge across the LA River. This "Jewel at the Bend" (also referred to as the Glendale Narrows bridge) would connect both sides of the LA River, adjacent greenways and communities, as well as local businesses and Griffith Park. It would also create new public space, elevated above the riverbed.

Figure 5 – 11: *A rendering of a design option for the Jewel at the Bend, which could feature lighting and operate after dusk to allow for unrestricted active commuting.*



Credit: City of Glendale

Origins, Goals, and Timeline

Demand for the bridge component of the Riverwalk stemmed from the community's need for safe pedestrian access to and from Griffith Park. There are no pedestrian crossings for 3.25 miles between the bridges at Riverside Drive and Los Feliz Boulevard. Plus, both crossings are car-oriented and far from desirable pedestrian and cyclist crossing locations.

The City of Glendale wants to improve public health and sees the bridge as an opportunity to enable active transportation along the LA River corridor by connecting greenways. The southern part of Glendale is park-poor. Therefore, providing increased opportunities for recreation is important.

The stated goal of the Jewel at the Bend is to connect pedestrians and cyclists to parks (i.e. Bette Davis Picnic Area, Griffith Park, John Ferraro Athletic Fields, and the Riverwalk parks), recreational amenities, and trails along the LA River. It will provide increased access to the LA River from Glendale's downtown and The Walt Disney Company's Grand Central Creative Campus, which houses nearly 7,000 employees.

Community engagement for Phase III included three workshops held from September through December 2014. Project consultants then utilized community input and worked with City of Glendale staff to publish the Glendale Narrows Bridge – Structural Design and Aesthetic Evaluation Study (based on the Bridge Options Study, explained below) in February 2015. In March 2015, the Glendale City Council approved the study and directed staff to submit grant applications to support bridge construction. The City continues to seek grant funding.

Project Proponents and Community Collaborations

The Jewel at the Bend project is managed by the City of Glendale, which views it as an important piece of its effort to revitalize its riverfront. Key project partners include federal, state, county, and municipal agencies, as well as nonprofits, community organizations, and elected officials (listed in Figure 5 – 13).

Figure 5 – 12: *A wide range of stakeholders were identified to participate in the planning process.*

FOCUS GROUP & STAKEHOLDER MEETINGS

FEDERAL

- U.S. Army Corps of Engineers (several site visits)
- National Park Service - Trails & Conservation Assistance Office

STATE

- Caltrans District 7 (site visit)
- Mountains Recreation and Conservation Authority

COUNTY OF LOS ANGELES

- County of Los Angeles Construction Division, Watershed Management Division, and Mapping and Property Management Division

MUNICIPAL AGENCIES

- City of Los Angeles Department of Public Works - River Project Office
- City of Los Angeles, Ad Hoc River Committee
- City of Los Angeles Interdepartmental Task Force on the River
- City of Los Angeles Recreation and Parks staff (site visit)
- City of Burbank, Community Devlopment Department Transportation Planning staff

CORPORATIONS

- Walt Disney Company
- DreamWorks Animation

NONPROFIT & OTHER ORGANIZATIONS

- Friends of the Los Angeles River
- North East Trees
- Sierra Club Conservation Committee
- Los Angeles County Bicycle Coalition
- Los Angeles River Revitalization Corporation
- Livable Streets
- Glendale Rancho Homewowners' Association (site visits)
- Griffith Park Apartments

ELECTED OFFICIALS

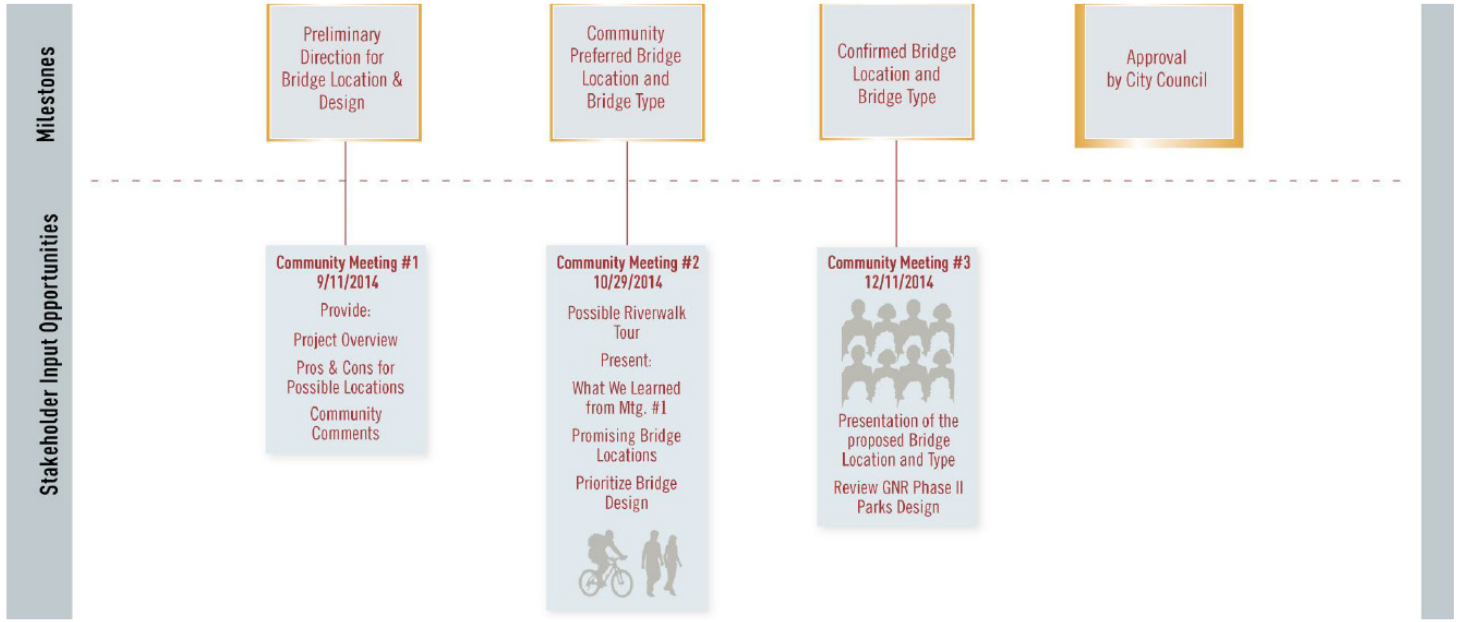
- Staff of Senator Dianne Feinstein (site visit)
- Staff of Senator Barbara Boxer (site visit)
- Staff of Representative Adam Schiff, 29th Congressional District (site visit)
- Staff of State Senator Carol Liu - 21st Senate District (site visit)
- Staff of Assemblymember Mike Gatto - 43rd Assembly District (site visit)
- Staff of Councilmember Ed Reyes - L.A. City Council District 1 (site visit)
- Councilmember Tom LaBonge and staff, L.A. City Council District 4 (site visit)
- Staff of Councilmember Eric Garcetti - L.A. City Council District 13 (site visit)

Credit: City of Glendale

To identify potential bridge locations, preferred design, and funding sources for the Jewel at the Bend, City staff hired Atkins North America, Inc., an international consulting firm with specialized design experience, to lead a Bridge Options Study during Phase III of the project. The study focused on methods of community engagement to drive bridge design decisions such as, hiring consultants to work with the community and showcase potential designs. The following sections discuss the community engagement and decision-making process outlined in the Bridge Options Study and enacted over several years.

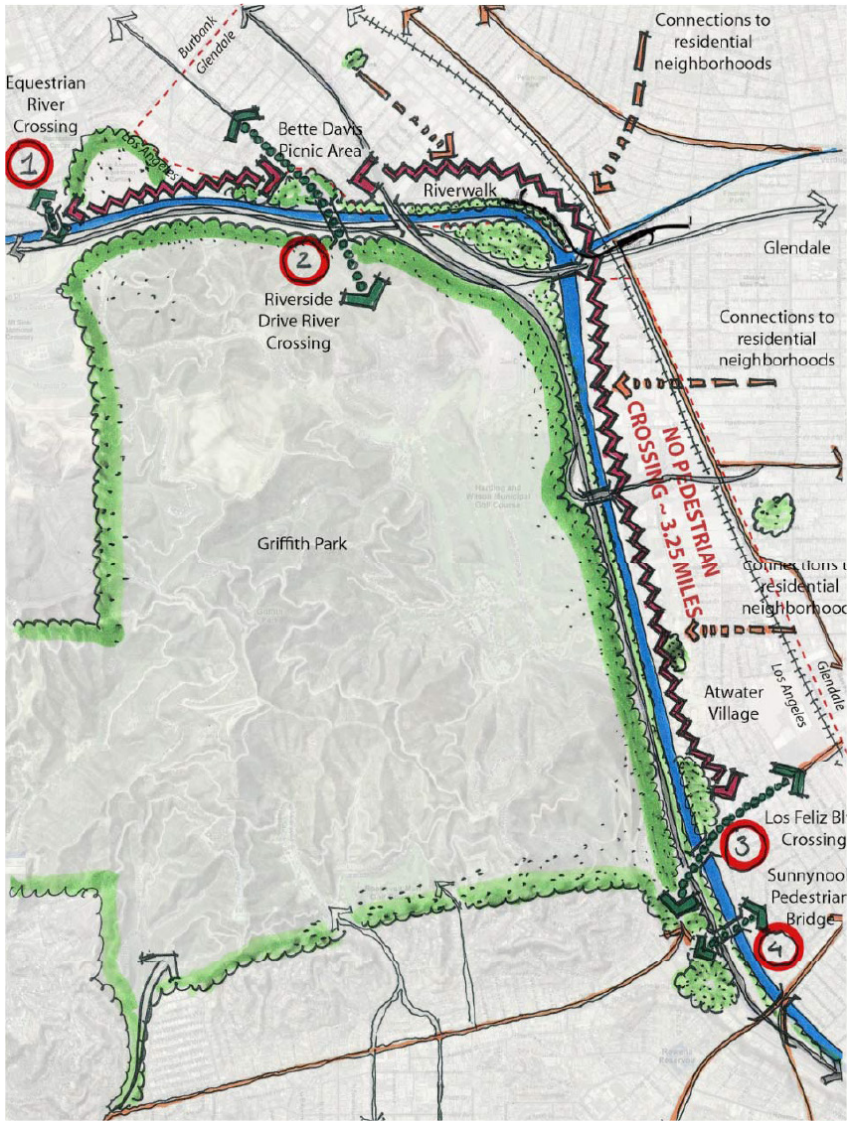
Although the City could have conducted community outreach themselves, they hired an outreach specialist, Katherine Padilla & Associates (KPA) because they believed a third party consultant would receive more honest feedback from the public. KPA developed a Joint Community/City Partnership, a framework to conduct three workshops with established milestones. They kept the meetings focused, redirected off-topic concerns to the appropriate City staff, and created a graphic (shown in Figure 5 – 14) illustrating the community's important role in the development process. KPA explained that they were trying to find the "Sweet Spot"—a balance between community interest and concerns, costs and funding opportunities, and technical considerations.

Figure 5 – 13: *Outlining the public participation process helped the community members visualize how their input matters.*



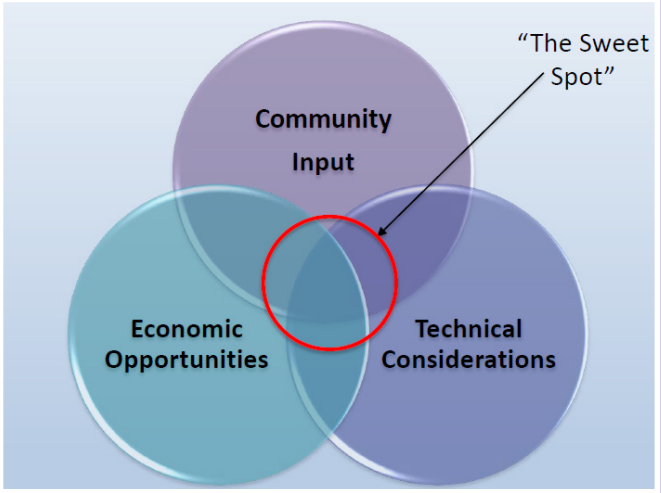
Credit: City of Glendale

Figure 5 – 14: *Illustration presented at a June 2010 Open House. Presenters highlighted opportunities and constraints of the Riverwalk Project to community members.*



Credit: City of Glendale

Figure 5 – 15: *This Venn diagram demonstrates how project proponents illustrated to stakeholders how key factors influence project decisions and outcomes.*



Credit: City of Glendale

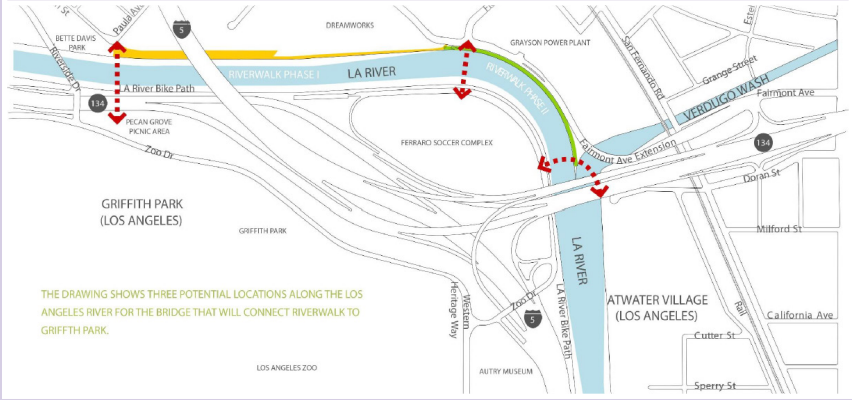
KPA made a far-reaching effort to engage many local, regional, and national stakeholders in the outreach process. Pedestrians, cyclists, equestrians, park users, and other community members all participated. Equestrians were an especially important stakeholder because they use the area frequently and had strong views regarding the bridge's location. KPA was diligent in their responses to the community and tried to accommodate all parties. Their outreach strategy played a crucial role in driving community buy-in to the bridge's value, development, and location.

Site Selection and Design

Selecting the Jewel at the Bend's location was a holistic, community-driven process. Three potential sites were presented and reviewed early in the outreach process. In depth discussions between the City, residents, and the design team followed. The group came to consensus in the second meeting of the series of three workshops.

The following table, adapted from a presentation given at Community Workshop #2, provides pros and cons identified by the community of the three possible bridge locations.

Figure 5 – 16: *This image demonstrates potential bridge Location 1 (left), Location 2 (middle), and Location 3 (right) in proximity to Phase 1 (yellow line) and Phase II (green line).*



Credit: City of Glendale

Table 5 - 4: Pros and cons of three potential bridge locations

Location	Pros	Cons
1	• Only location capable of serving equestrian users • Provides access to both the bike path and Griffith Park	• Could be an expensive alternative because it's a longer bridge • Serving all three potential user groups would require a costlier, wider bridge • Concerns with parking and traffic and impacts on community character • Requires cooperation with the City of LA
2	• Provides the most direct connection to San Fernando Road and serves as a gateway to Ferraro Fields • Provides the most visible and accessible option • Provides easy access for pedestrians and has close proximity to bicycle routes • Provides an ideal commute connection between neighborhoods and commercial centers, including the DreamWorks Animation studio • Close to street parking • Creates opportunity for a visually dramatic bridge	• Does not connect directly to Griffith Park • Requires cooperation with the City of LA
3	• Location is dynamic, visible from Interstate 134, and the shortest option • Connects three neighborhoods/cities • Spans both the LA River and Verdugo Wash • Requires minimal use agreements because it is outside of agency rights-of-way	• Does not connect directly to Griffith Park • Limits pedestrian and cyclist visibility and accessibility

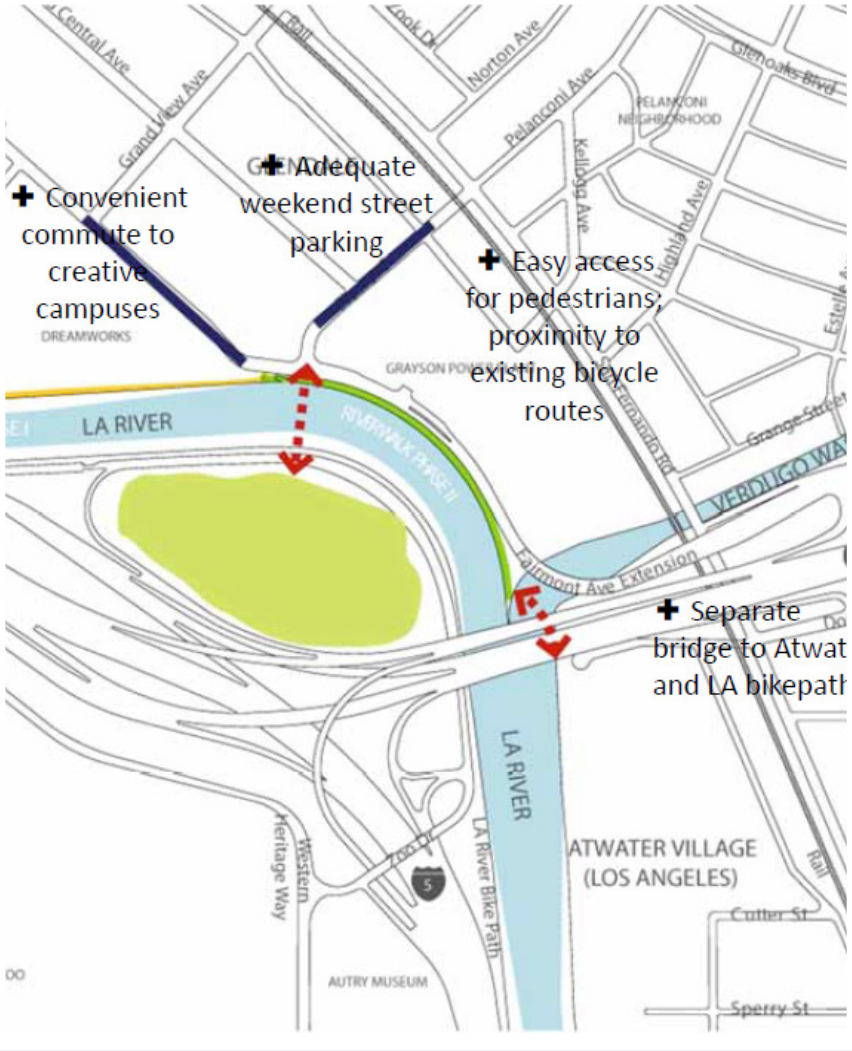
Location 1 was originally preferred by equestrians since it was the only option that was capable of accommodating their needs. However, they changed their stance after recognizing that the proposed location had the potential to drive additional, unwanted traffic to the area. Based on this possible impact to their community, equestrian stakeholders agreed that other bridge locations should be pursued.

Location 3 Is not clearly visible to passersby on foot or on bike, which would impede the level of accessibility targeted for this project. Only those who were already aware of the site would likely use it.

Location 2 was selected as the best site because it would create an ideal commuting corridor providing the most direct connection to San Fernando Road and would serve as a gateway to and from Ferraro Fields. It also creates the opportunity for a visually dramatic bridge. As a result of evaluating this option, both residents and the City began to understand the potential significance and role the bridge could play within the community. In this unique location, the LA River shifts its course by 90 degrees. This led to the concept of the bridge being the "Jewel at the Bend"—a community landmark.

Historically, bridges over the LA River have been similar in design, with a focus on function. To inspire more creative ideas, the City committed to allowing the community to drive the process. Residents were told that they could create and plan for a bridge with an approximate budget of $3 to $25 million. But the City was clear: the amount of funding that could be secured would ultimately dictate what would be built—they did not have the funds internally to cover the entire cost. To the City's surprise, this did not deter residents. They wanted to create a truly unique place.

Figure 5 – 17: *Preferred Jewel at the Bend bridge Location 2 (left). Project proponents agreed that another bridge over Verdugo Wash (right) would be needed to enable a continuous pathway on the wast bank of the LA River.*



Credit: City of Glendale

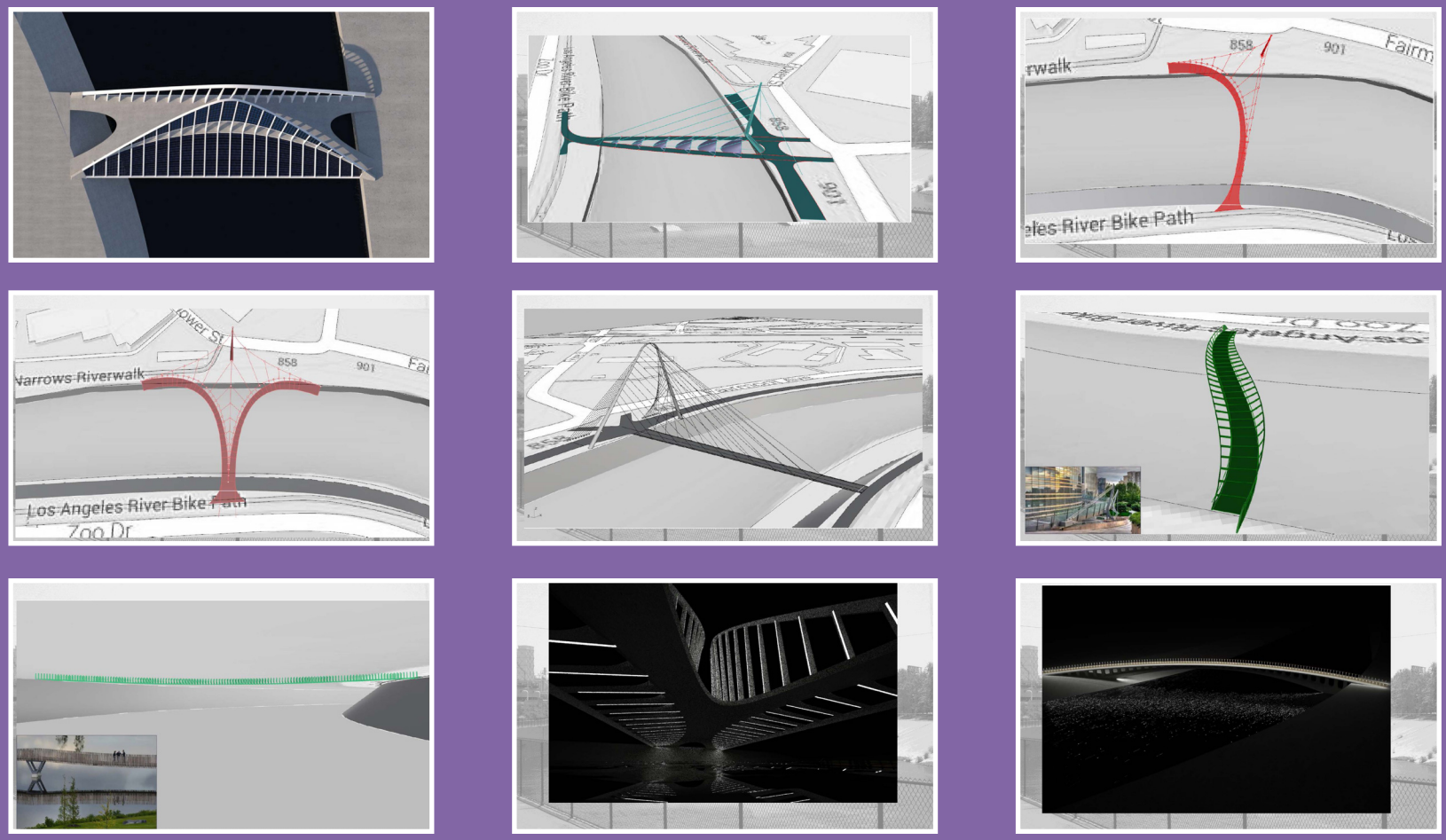
Potential bridge designs were introduced early in the outreach process at Community Workshop #1. Attendees reviewed different types of pedestrian bridges from around the country, including box girder, suspension, cable-stayed, arch, space truss, and stress ribbon.

Figure 5 – 18: *Bridge types presented at the project's first community workshop.*

Credit: City of Glendale

The consultants and workshop attendees discussed each bridge's use, size, construction material, and how each influences design. They also considered the connections to greenway paths on both sides of the LA River, traffic flow, and how structures function during the day and at night. The bridge design sub-consultant —Ty Lin International—created site specific renderings to illustrate what each bridge type might look like in the selected location. KPA then shared these renderings at the community outreach meetings.

Figure 5 – 19: *Original bridge concepts presented to the public.*



Credit: City of Glendale

Construction costs for the sample bridges ranged from $5.5 million for a simple box girder to $24.5 million for a more elaborate suspension bridge. Less intricate designs with a focus on function and the width to accommodate multiple uses proved to be most popular among the community.

The City credits their design team for creating such a successful community-led design process. The design team encouraged the City and stakeholders to consider the bridge not only as a means to get across the river, but also as a destination in and of itself. Ty Lin International's staff asked, what if the point of the bridge was to get to the middle of the river? They could see that the bridge had hidden potential to be a prominent community landmark, a destination in to itself.

The consultants translated the community's ideas and information exchanged through weekly to biweekly meetings with City staff into 10 imaginative, practical bridge concepts that could become icons of LA River revitalization. During Community Workshop #2, the top four designs, with widths ranging from 12 to 20 feet, were chosen for the City to consider. The Garden Bridge Conceptual Design was the favorite and chosen to be further developed by Atkins North America, Inc. and Ty Lin International.

The consultants completed the draft Glendale Narrows Bridge Structural Design and Aesthetic Evaluation Study in February 2015, which was unanimously approved by the Glendale City Council at their regular council meeting the following month. The City Council sees the future bridge as a valuable community asset, especially in northern Glendale, a park-poor area that would have enhanced access to Griffith Park with the creation of the bridge.

The Garden Bridge Conceptual Design specifies that the bridge would be 25 feet above the riverbed, eight feet above the LA River's retaining wall, and have a winding S-shape with shaded seating areas separate from the bike and pedestrian path. It would be five feet thick and the shade structures would be 14 to 16 feet tall. The next three favored bridge designs include a solar arch, a mesh haunch, and a simple concrete truss. Ultimately, the final bridge design may be a blend of aspects from these different concept renderings.

Figure 5 – 20: *Renderings of the Jewel at the Bend showing its placement across the LA River and potential usage at any time of day.*

Credit: City of Glendale

Cost and Funding

The Bridge Options Study (Study), a comprehensive plan for the project, cost $600,000. The City of Glendale covered the cost under Measure R, a half-cent sales tax in Los Angeles County to finance new transportation projects and programs, and to accelerate those already in the pipeline. While the Jewel at the Bend's construction costs, site plans, and architectural drawings are not currently funded, the Study provides a comprehensive plan reflecting community input. The City believes this will improve the likelihood of securing more funding.

The design consultant's straightforwardness with City staff about the true cost of materials and design features was crucial. Having a range of design options and costs allowed project proponents to address funding uncertainty. The City was also explicit with the community: they will develop one or a mix of the top four designs based on how much funding is secured within 10 years.

The construction of the proposed bridge will have an approximate cost of between $3 and $20 million, depending on its size and complexity. A $3 million bridge would be as simple as a straight, functional concrete bridge. A full build out of the preferred Garden Bridge design would cost approximately $20 million. The City has one dedicated staffer pursuing funding opportunities, which could take three to five years. To help facilitate the effort, they developed a public website which includes common supporting documents needed for grant applications.[1]

The City applied for a Los Angeles County Metropolitan Transportation Authority (Metro) Active Transportation Facility grant and was awarded $3.1 million for the bridge. The City hopes this grant will help demonstrate the viability of the project and increase their chances of securing other funding.

The City also applied for, but unfortunately did not receive $22.4 million from the U.S. Department of Transportation's TIGER (Transportation Investment Generating Economic Recovery[2]) Discretionary Grants program for the Jewel at the Bend and another proposed bridge over the Verdugo Wash. The latter was included in this proposal to emphasize the area's need to enable a continuous pathway on the east bank of the LA River as well as its ability to serve as a key connection corridor providing access to the southern-most end of the Riverwalk and to North Atwater in the City of LA. The City may apply for smaller TIGER grants in the future while simultaneously applying for other funding sources to fill in any funding gaps. They may be more competitive if they are not asking for such large amounts of funding from one source.

1 Grant Application Supporting Documents. (2015). Retrieved from: http://www.glendaleca.gov/government/departments/public-works/projects/phase-iii-bridges-grant-supporting-information

2 TIGER Discretionary Grant. (2015). Retrieved from: http://www.transportation.gov/tiger

Figure 5 – 21: *Proposed Verdugo Wash Bridge design, as exemplified from the perspective of the LA River.*

Credit: City of Glendale

Permitting and Use Agreements

Project proponents have yet to secure project entitlements, permits, or use agreements because neither precise bridge connection points nor the design have been finalized. In the future, the City of Glendale anticipates the need to work closely with the City of LA since nearly 90% of the bridge could be within its jurisdiction. Initial discussions between the cities indicate that LA supports the project and will make their permitting processes as seamless as possible.

Operations and Maintenance

Once complete, the City of Glendale will be the primary owner of the Jewel at the Bend, even though a significant portion of it would be within the City of LA's jurisdiction. A small city, like Glendale, would need to allocate considerable staff time and resources to create a bridge management program. The City of LA operates and maintains thousands of bridges and it may be relatively easy for them to also manage the Jewel at the Bend. Informal conversations between the cities indicate that LA may assume some or all of the responsibility (most likely, a 50/50 split). In the end, the project is being driven by Glendale and the bridge may ultimately be their responsibility to maintain.

At the time of this report's development, Glendale was in the early stages of developing a holistic operation and maintenance program, including the future bridge's hours of operation. As a City asset, it would be subject to the same liability restrictions as public parks, i.e. the bridge would be closed at sunset. This can have significant impacts on those using bicycle and pedestrian paths, including commuters. The City is considering this issue and may allow access after dusk in certain areas to maintain the transportation network.

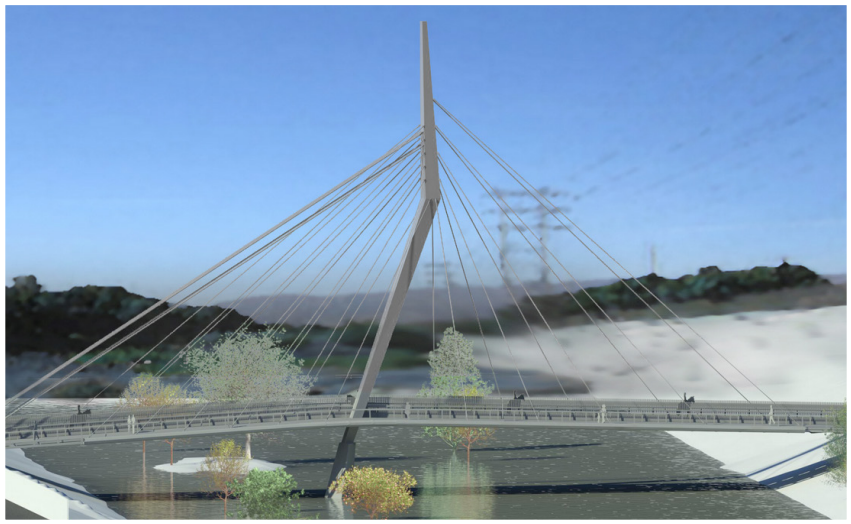
CASE STUDY #2
La Kretz Crossing

The planned La Kretz Crossing, what will be the region's first cable-stayed bridge[3], is designed to connect bicyclists, pedestrians, and equestrians, from North Atwater Park to Griffith Park. It will be the first philanthropically-funded bridge in the City of Los Angeles and has a distinct design, which will be visible from Interstate 5. The La Kretz Crossing will create a unique landmark highlighting Los Angeles River revitalization efforts.

Origins, Goals, and Timeline

In 1998, dangerous crossing conditions and increasing community demand led the LA City Council to approve a study for the design and funding of an equestrian bridge. In 2007, the Los Angeles River Revitalization Master Plan (LARRMP) was adopted, which prioritized the development of bridges for non-motorized transportation to connect the LA River's equestrian trails.

***Figure 5 – 22: R**endering of the La Kretz Crossing looking north.*



Credit: River LA

***Figure 5 – 23:** Attachment to the Active Transportation Program grant application showing current hazardous conditions of the horse crossing area (outlined in red) and opportunity for safe crossing with the proposed new bridge (blue line).*

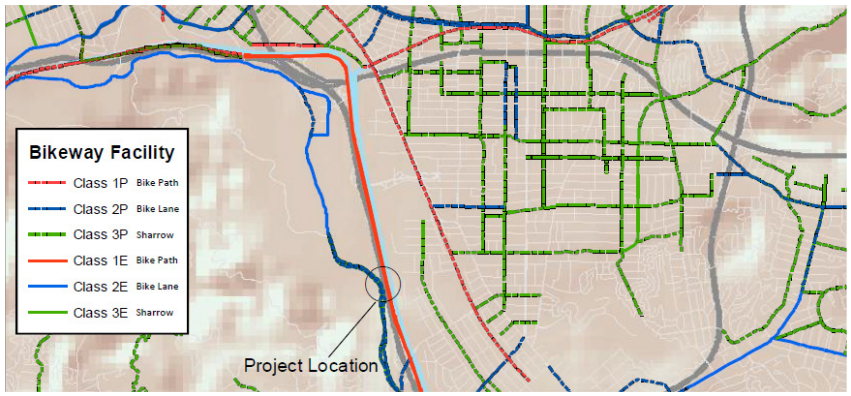
Credit: RiverLA

3 A cable-stayed bridge features at least one tower (or pylon), from which cables directly connect to and support the bridge deck. This is in comparison to other bridge types, such as a suspension bridge, which features vertical cables that attach to the deck and then to a horizontal cable between towers.

Figure 5 – 24: *Current conditions of the LA River where the bridge is proposed.*

Credit: River LA

Figure 5 – 25: *Graphic included in an Active Transportation Program grant application to demonstrate the potential of the bridge to connect existing and future bicycle facilities.*



Credit: River LA

Morton La Kretz—a real estate developer, philanthropist, and LA native—is the primary funder who set the project in motion through his donation. He had been working with the nonprofit River LA[4] for approximately a year to raise the LA River's profile as a valuable asset. In October 2010, both La Kretz and River LA agreed that an iconic bridge in North Atwater was worthy of significant investment.

The La Kretz Crossing is a keystone project of River LA's Greenway 2020 movement to complete a continuous 51-mile LA River-adjacent greenway and establish the LA River as a desirable destination by 2020.[5] Current interest in LA River revitalization has made it easier to propose new and creative infrastructure projects, like a cable-stayed bridge.

The goals of the La Kretz Crossing, established with community input and guidance, are threefold: 1) provide a safe and sustainable new river crossing for pedestrians, cyclists, and equestrians; 2) improve ecosystem and riparian health; and 3) be aesthetically pleasing, blend into the natural atmosphere, and include a "wow" factor.

For Fiscal Year 2014-2015, River LA obtained a California Department of Transportation Active Transportation Program (ATP) grant.[6] However, difficulties with construction contracts led River LA to request a funding allocation extension. A 12-month extension was granted: ATP funds would not be allocated until June 30, 2016. Building the La Kretz Crossing will take approximately 12-15 months after the construction bid is awarded and funds are allocated. Project proponents expect the bridge to be completed in late 2017.

4 River LA was previously called Los Angeles River Revitalization Corporation (LARRC).
5 Greenway 2020. (2015). Retrieved from http://www.larivercorp.com/greenway2020
6 Caltrans Active Transportation Program (2016). Retrieved from: http://www.dot.ca.gov/hq/LocalPrograms/atp/

Project Proponents and Community Collaborations

River LA, a nonprofit established in 2009, implements projects prioritized in the LARRMP.[7] River LA has been discussing LARRMP projects with stakeholders for years. For the La Kretz Crossing, they will engage the community, secure funding, permits, and insurance, and manage construction. They will then formally "gift" the bridge to the City of Los Angeles for them to own, operate, insure, and maintain in perpetuity.

In 2011, River LA developed and implemented a strategic Outreach/ Public Participation Plan. They collaborated with their design team (a group of civil, structural, and bridge design, landscaping, electrical and geotechnical experts) and key permitting agencies, such as the U.S. Army Corps of Engineers (USACE), various City departments, and the LA County's Department of Public Works (LADPW) and Flood Control District (LACFCD). River LA representatives organized meetings, presented at public forums, and spoke with stakeholders at nearly 30 community gatherings, including a LA River Cooperation Committee meeting and a City Council District 4 meeting with equestrians. (Table 5 – 5 displays stakeholders). They held smaller, more targeted meetings with some stakeholders, such as the USACE and various City of LA departments, to ensure that project requirements were understood and addressed.

Table 5 - 5: Key project stakeholders

U.S. Army Corps of Engineers
State agencies: Department of Transportation (Caltrans), Department of Fish and Game, Santa Monica Mountains Conservancy/Mountains Recreation and Conservation Authority, State Water Resources Control Board/LA Regional Water Quality Control Board
LA County Department of Public Works and Flood Control District
City of LA Department of Public Works, Bureau of Engineering, Bureau of Sanitation, and Department of Water and Power
LA Equestrian Center
Equine Advisory Committee
Friends of the LA River
Friends of Griffith Park
LA County Bicycle Coalition
LA Conservation Corps
Neighborhood Councils
North East Trees
The City Project
The River Project
Trust for Public Land
The Council for Watershed Health

Information from: Caltrans Active Transportation Program Cycle 1 Application, May 21, 2014, River LA North Atwater Non-Motorized Multimodal Bridge Project "La Kretz Crossing"

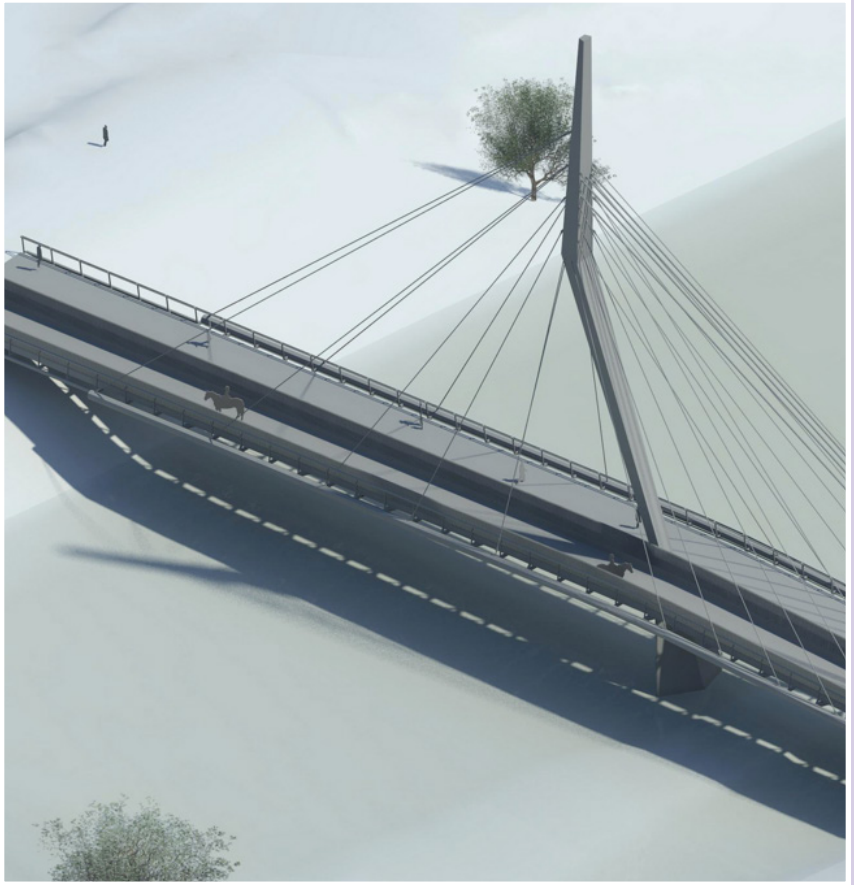
7 About Us. (2015). Retrieved from http://www.larivercorp.com/about_us

Community support for this project was especially important because the bridge is primarily funded by one person, and a cable-stayed bridge across the LA River has never been attempted. It was necessary to respond to and incorporate local feedback in the bridge's development to ensure that the project represented public interests, not just those of the private funder. The benefits of such a project were not obvious to all stakeholders and some were initially uncomfortable with the bridge's high-profile design, placement, and/or large price tag.

River LA listened to the community's concerns and addressed them individually. Ultimately, stakeholder feedback influenced important bridge location and design decisions. For example, equestrian users pointed out that there were stables in the area that would be better served if the bridge was moved slightly downstream. Users also pointed out that the crossing would be safer if it had two separate tracks, one side for equestrians and the other for cyclists and pedestrians. Stakeholders recognized that constructing the bridge could inspire the development of additional pedestrian bridges, particularly between the Elysian Valley and Rio de Los Angeles Park.

River LA is keeping stakeholders informed on project progress. Effective communication will ensure continued community support for the La Kretz Crossing.

Figure 5 – 26: *Aerial view rendering of the bridge's two-track design.*

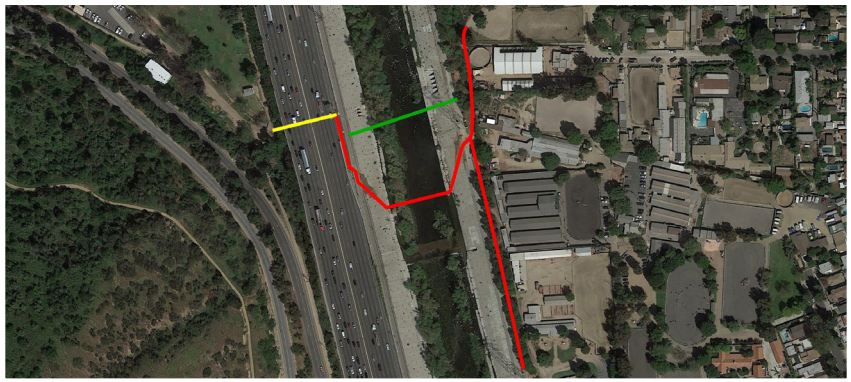


Credit: River LA

Site Selection and Design

LARRMP identified the site of the La Kretz Crossing based on the adjacent community's need to cross the LA River, the desire to accommodate multiple user groups, and the goal to connect bike paths and parks. The project sits on or passes over land that is controlled by the USACE, LACFCD, the Los Angeles Department of Water and Power, and private property owners. The nearest bridge is 0.62 miles south, is car-oriented, and does not accommodate equestrian users. The La Kretz Crossing will connect Atwater Village in the City of LA and the newly expanded North Atwater Park on the LA River's east bank to 7.1 miles of river bikeway on the west bank. It will provide safe, year-round access to pedestrian, bicycling, and equestrian facilities, including a special tunnel for horses under Interstate 5 which connects the bike path to Griffith Park. The pre-fabricated cable-stayed bridge will stretch nearly 390 feet across the LA River, with a deck of approximately 325 feet by 36 feet.

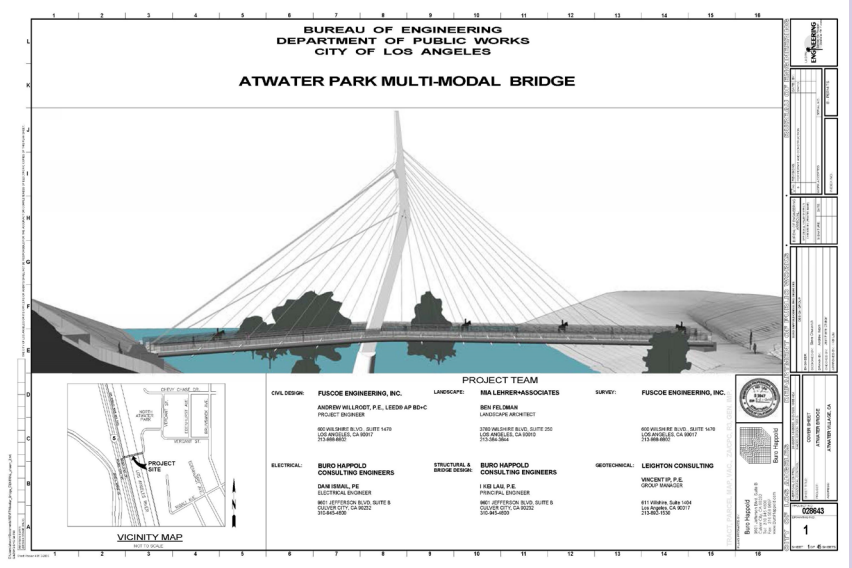
Figure 5 – 27: *Approximate location of proposed bridge (green line) and existing pathways (red line), including the hazardous in-channel crossing currently utilized by equestrians and the tunnel underneath Interstate 5 (yellow line).*



Credit: Luskin Center for Innovation via Google Earth

The primary donor decided on the bridge's design and requested that it accommodate multiple users. River LA presented Mr. La Kretz with a number of possible bridge types and evaluated them based on performance, functionality, and impact on the LA River. A split-deck cable-stayed bridge model was identified as the most fitting. It will create a new and unique LA River identity, minimally impact the waterway, and require less maintenance and renovation over time than other options.

Figure 5 – 28: *Project site plan (with an alternative project name: Atwater Park Multi-modal Bridge).*



Credit: River LA

Satisfying all of the functional requirements, as well as designing a bridge that is aesthetically pleasing, blends into the natural atmosphere, and includes a "wow" factor required a design team of consultants including: Fuscoe Engineering, Inc. (civil design and survey), Mia Lehrer + Associates (landscaping), Buro Happold Consulting Engineers (electrical, structural, and bridge design), and Leighton Consulting (geotechnical). Each performed an important role analyzing the physical setting and existing conditions. For example, a hydraulics and water surface assessment was prepared to determine the impacts on the river channel.

Cost and Funding

The La Kretz Crossing is unique because more than half ($5 million) of the total project cost ($9,038,332.80) was donated by philanthropist Morton La Kretz. To close the funding gap, organizers pursued a public-private partnership. The City and County collectively contributed $1 million in funds and in-kind services (e.g. staff time, environmental, and real estate studies) and the California Transportation Commission provided $3.66 million through their Active Transportation Program (ATP) which funds projects that increase the proportion of biking and walking trips made, improve safety and mobility of non-motorized travelers, reduce greenhouse gas emissions, and provide other benefits.

Most funders have strict donation or grant requirements that must be respected to maintain good relationships and achieve project goals. For example, the private donor for this project stipulated that releasing the final construction funds was dependent on the following.

1. Written commitment from the City to accept the bridge as a gift and to operate and maintain it as a public asset;

2. Substantial progress in obtaining permits from the USACE, the County, and the City; and

3. Competitively bidding the project to an experienced and cost-effective bridge manufacturer and general contractor.

The project would not have been possible without the flexibility and understanding of the primary donor in response to the inherent delays and unexpected costs that are typical of large capital projects. For example, the City was uncomfortable with the bridge's unique design and asked River LA to add additional shock absorbers. While this is not required to meet engineering standards, project proponents decided that it was in their best interest to mitigate the City's concerns and add the seismic features. Other issues, such as unexpected soil conditions in the riverbed, required a more robust foundation and nearly doubled the initial cost estimate of the project.

In June 2015, due to construction delays, River LA requested a 12-month extension to use ATP funds for the project. The California Transportation Commission approved their request and final permitting of entitlements was being reviewed at the time of this Guide's development.

Permitting and Use Agreements

The permit and approval process was difficult and delayed the project on numerous occasions. Table 5 – 6 below outlines the agencies and approvals involved. The process is described in the following paragraphs.

Table 5 - 6: Agencies and permit procedures for the La Kretz Crossing
Caltrans: Encroachment and Transportation Permits for bridge transport and construction staging in the rights-of-ways; NEPA Categorical Exemption and Right of Way Certification (required after ATP award)
Department of Water and Power: Letter of Non-Objection
LA County Flood Control District: Easement acquisition, construction permit, and Flood Permit (required after environmental review)
City Department of Transportation: Traffic Control Plan review
City Department of Recreation and Parks: project and design review
City Department of Building and Safety: construction permit
USACE: NEPA Entitlement Requirement, Section 404 Permit, Section 408 approval for flood control structures, and project review and approval
California Department of Fish and Game: Streambed alteration agreement
State Water Resources Control Board/LA Regional Water Quality Control Board: project review, National Pollutant Discharge Elimination System (NPDES) General Construction Permit, and 401 Water Quality Certification

Engineering approval and permitting for a precedent-setting bridge was challenging for two reasons. First, City engineers are comfortable with specific bridge designs, which primarily include concrete arch structures that meet certain vibration standards. Cable-stayed bridges function differently, which made it difficult to convince City engineers that they were safe. Second, the maintenance needs of a cable-stayed bridge were unfamiliar to City employees. River LA and their design team spent considerable time educating their partners on what type of maintenance would be required.

All development projects, including those along the LA River, must comply with environmental laws to identify and address potential adverse environmental impacts. In September 2013, the City of LA's Bureau of Engineering (BOE) filed a Notice of Determination for a Mitigated Negative Declaration,[8] a declaration that the initial study proved that no significant environmental effect will occur, under the California Environmental Quality Act (CEQA).[9] In March 2013, USACE released a Draft Environmental Assessment in compliance with the National Environmental Policy Act (NEPA)[10] and 17 months later, found that there were no significant impacts expected. USACE also required River LA to obtain Section 404 (Clean Water Act) and Section 408 (Rivers and Harbors Act) permits. See Table 5 – 7 for more information.

Table 5 - 7: USACE permit actions	
Section 404 assesses and authorizes the impacts of discharging fill material into U.S. waters pursuant to the Clean Water Act	This process, which takes about 2-3 months, assesses project impacts on aquatic/ecological features and the "high water mark" as well as potential mitigation strategies. After an ecological/wetland survey and delineation within prescribed project area, USACE determines an appropriate Section 408 Permit process for the project.
Section 408 assesses and authorizes alteration of levees pursuant to the Rivers and Harbors Act	This process assesses project impacts on and potential mitigation of channel discharge conveyance. Depending on the degree of impact, the local USACE (LA District) assesses whether a project requires review and processing at the local level, which takes 6-8 months, or a more rigorous review at both the local and federal level, which takes 12-18 months. After 30% of completed design plans are submitted to USACE, the agency reviews and determines the most appropriate 408 Permit process, which takes about 8 weeks.

Information from: Caltrans Active Transportation Program Cycle 1 Application, May 21, 2014, River LA North Atwater Non-Motorized Multimodal Bridge Project "La Kretz Crossing"

8 For more information, visit http://resources.ca.gov/ceqa/guidelines/art6.html

9 For more information on CEQA, visit https://www.wildlife.ca.gov/Conservation/CEQA/Purpose

10 For more information on NEPA, visit http://www.epa.gov/nepa

BOE requires a "B" Permit to review and monitor extensive public works improvements within the City of LA. This permit has three phases: estimate, design, and construct. Its fee covers the administrative costs of BOE and Bureau of Contract Administration (BCA), the agency responsible for ensuring that policies and procedures for contracts are equitably enforced during project review and monitoring. The City's Department of Building and Safety (DBS) also requires a permit because the landing of the east end of the bridge is on private property, which is under their jurisdiction. Altogether, the City estimated that obtaining these permits for the La Kretz Crossing cost a total of $281,000.

Transferring bridge ownership from River LA to the City required City Council approval because the donation was more than $5,000. BOE's Real Estate Group worked with River LA to ensure the gift agreement was sound: this cost approximately $15,000.

Operations and Maintenance

Upon completion of the La Kretz Crossing, the City will be the primary owner of the bridge. Responsibility for it will be shared among the departments of Public Works, Recreation and Parks, and Transportation.

Steel cable-stayed bridges have specific maintenance needs. While project proponents designed it to have minimal operations and maintenance requirements for the first 10 years, it will need some upkeep which will cost about $1 million for the first decade of operation. For example, every five years, the cables need to be tuned and the timber deck needs to be refurbished. The bridge also needs to be repainted every 10 years. Using standard materials can minimize the time required to educate workers about infrastructure repairs.

To manage the cost of upkeep, River LA developed a creative 10-year maintenance strategy with the Los Angeles Conservation Corps (LACC) through one of its Young Adult Programs, the LA River Corps. LACC provides at-risk youth with job skills training and work experience with an emphasis on conservation and community service projects. LACC has a history of maintaining LA River parks, bike paths, and access points. Working with LACC allows the City 10 years to secure funding before taking over bridge upkeep in perpetuity.

Current Status

The La Kretz Crossing was to be erected between January and August 2013, but due to the delays mentioned above, construction will start in the fall of 2016 and take approximately 12-16 months.

GUIDANCE: LESSONS LEARNED AND BEST PRACTICES

This section presents important considerations for those interested in developing pedestrian bridges across the Los Angeles River or its tributaries. The key characteristics of the bridge projects featured in this chapter demonstrate a diversity of bridges that can be developed. To illustrate an even wider diversity, in this section we also present images of existing pedestrian bridges that cross the LA River or its tributaries. While these case study projects are not yet fully implemented, this section provides a summary of lessons learned and best practices identified to date. The takeaways presented reflect the slow, but progressive nature of building bridges.

Table 5 - 8: Summary of the case studies and their key defining characteristics

	Aliso Creek Confluence Bridge	Jewel at the Bend Bridge	La Kretz Crossing
Summary	Demonstrates utility of a small scale footbridge over a tributary, enabling a continuous greenway; will create access to a new two-acre park and enhance mobility for all pedestrians; the bridge is in preliminary development	Exemplifies community-driven design; project proponents proposed a range of design and location options to community stakeholders who selected their top preferences; final outcome depends on funding but current plans are for a two-span curvilinear concrete bridge	First philanthropically-funded and cable-stayed bridge project in the region; design is aesthetically pleasing and accommodates multiple users including equestrians; will provide a connection to the existing bike path and parks and will enhance community and LA River identity
Project Lead (type)	The Trust for Public Land (nonprofit)	City of Glendale (local government)	River LA (nonprofit)
Location	Reseda neighborhood in the City of LA	City of Glendale and City of LA	Atwater Village neighborhood in the City of LA
Users	Pedestrians, cyclists, local and surrounding community	Pedestrians, cyclists, local and surrounding community	Pedestrians, cyclists, equestrians, local and surrounding community
Cost	~$600,000	~$3-20 million	$9 million
Funding	TBD	Active Transportation Facility grant ($3.1 million) from LA County Metropolitan Transportation Authority; Measure R funding ($600,000 for Bridge Options Study) from the City of Glendale	Philanthropic donation ($5 million); City of LA and LA County (collectively contributed $1 million in funds and in-kind services), and Active Transportation Program grant ($3.66 million) from the California Transportation Commission
Status	50% of the construction drawings are complete	Preferred bridge design selected	Bridge design and construction drawings complete and funded
Next Steps	Continue to work with the County to identify project constraints and opportunities	Identify and secure funding	Initiate construction in 2016, with full build out expected in late 2017

Building creative, community-driven bridges over the LA River and its tributaries is a new idea. Inspired leaders have an opportunity to set a precedent and create their legacy through an exciting, new development. However, lead entities and their partners have to overcome challenges to build out projects while paving the way for others. The three featured case studies provide solutions to challenges and identify some issues that remain opportunities for creative problem-solving.

Figure 5 – 29: *View of the Colfax Avenue pedestrian bridge in Studio City; east of the bridge (left) is a neighborhood, west of it (right) is a commercial corridor. (Location: Studio City)*

Credit:Andrew Pasillas

Table 5 - 9: Lessong learned: summary of challenges to developing a pedestrian bridge and strategies to overcome them

Development Stage	Challenges	Solutions
Motivation	• Lack of knowledge of opportunities, benefits, and processes to develop footbridges over the LA River and its tributaries	• Do a preliminary assessment of how the LA River separates communities and reduces mobility • Educate community leaders and the public on the benefits and processes of developing bridges • Provide examples of successful bridge projects
Community Engagement	• Lack of knowledge of the opportunities and benefits of bridges • Fear of increased traffic • Responding to and incorporating feedback	• Develop a community engagement strategy specific to the community • Local consultants or organizational partners can help lead or support outreach • Discuss with local residents the benefits and challenges of developing bridges while managing expectations • Provide genuine opportunities for community input
Timeline	• Developing an accurate project timeline and scope • Matching funder and agency timelines with project timeline • Managing delays	• Develop a practical and flexible timeline considering uncertainties • Include extra time for project delays • Prioritize project issues • Be prepared for a long, slow process
Design	• Balancing user and maintenance needs as well as aesthetic form • Expanding of the vision of a bridge beyond only an opportunity to cross the LA River	• Hire good design consultants • Develop innovative design options with a range of costs • Incorporate the community's design ideas into feasible options • Select construction materials with minimal maintenance requirements • Discuss maintenance requirements with the entity that will be responsible for it

Table 5 - 9: Lessong learned: summary of challenges to developing a pedestrian bridge and strategies to overcome them		
Development Stage	Challenges	Solutions
Physical Sitting	• Identifying the best site • Identifying where to connect the bridge to existing bike paths, trails, and sidewalks • Managing jurisdictional issues	• Consider site feasibility in relation to other bridges, local and regional needs, existing uses, and potential impacts • Identify existing user amenities • Identify agencies with jurisdiction and discuss project ideas with them early in the process
Permitting and Use Agreements	• Identifying agencies with jurisdiction • Agency push back on new standards and precedents • Managing adjacent property owners' concerns	• Meet with agencies early in the process • Work to understand agency rules, policies, and limitations • Work with property owners to understand and mitigate their concerns
Cost	Justifying high cost with perceived minimal benefits Encountering unexpected costs Responding to project delays	Be clear about project benefits Solicit multiple cost estimates Budget projects conservatively and prepare for unexpected costs and delays
Funding	• Identifying sources • Aligning funder expectations and project outcomes	• Allow adequate time to research and apply for funding • Identify funding opportunities when developing project goals • Develop a concise narrative for applications • Select affordable design options • Communicate regularly and honestly with funders • Consider creative solutions to close funding gaps
Operation and Maintenance	• Identifying an entity to manage long-term upkeep • Creating operation standards that align with function and user needs	• Consider agencies and community groups that have the capacity for and knowledge of bridge maintenance

Lead organizations have found many ways to address the challenges outlined above. Early stage planning, developing clear goals and priorities, collaboration and partnering, community outreach and engagement, and being patient and flexible are critical to success. The remainder of this section details lessons learned through the case studies examined earlier in this chapter.

How do I lay the foundation for a bridge project?

Motivation and Vision

Motivation to construct a pedestrian bridge generally stems from a direct need for improved accessibility and connectivity to, from, and along the LA River and its tributaries. Although currently there are a limited number of LA River pedestrian bridges, those that do exist play a primary role in supporting the LA River greenway as an efficient, accessible, and connected transportation network. The need can be highly localized, such as the Aliso Creek Confluence bridge, which will connect users on two sides of a tributary. Often shorter in length and less prominent than main channel crossings, bridges over tributaries, and weirs are crucial to connecting transportation networks, but are often underappreciated. Bridges can also provide regional benefits and should be considered within the context of the Los Angeles River Revitalization Master Plan and the Los Angeles River Master Plan. For instance, the Jewel at the Bend bridge will meet the community's demand for increased accessibility to parks in northern Glendale.

Footbridge projects demand significant investments of time, resources, and funding, and can have an uncertain implementation schedule. Creating an engaging vision that captures and frames the value of a pedestrian bridge is critical, especially in order to secure financial support. It is essential to have community and political buy-in: the purpose of the bridge must be portrayed beyond an extension of a pathway. It must clearly accommodate the needs of residents in a multitude of ways. For instance, the City of Glendale identified early through its community engagement process, that their Jewel at the Bend could be more than just a way to cross the LA River. They worked with consultants and residents to develop the vision for it to be a destination in and of itself, reflecting not just the community's values, but also providing a strong narrative to secure funding.

Leadership and Collaboration

The development of a pedestrian bridge requires a strong vision, medium- to long-term commitment, and resources. Community organizations or local governments must acknowledge their strengths and weaknesses when taking on a bridge development project. Usually, one group does not have all of the expertise necessary for success; reaching out to partners to fill knowledge gaps is critical. For example, when developing the Aliso Creek Confluence bridge, The Trust for Public Land managed the project based on their experience, but also depended on the expertise of staff at LARiverWorks.

Local municipalities, with institutional knowledge on how to build significant infrastructure projects, should lead or partner with community organizations and advocates. Nonprofit organizations can sometimes be more efficient and nimble than government agencies. For example, River LA secured funding, obtained permits and use agreements, and will oversee construction of La Kretz Crossing. As a private entity, River LA is not subject to the same competitive bidding requirements for construction as the City of Los Angeles. Once the bridge is complete, it will then become a City asset, like a public park, with strong insurance and liability protections. A gift agreement will formally transfer ownership from the donor (River LA) to the recipient (City of Los Angeles) and will establish specific guidelines for project roles, tasks, and accountability.

Community Engagement

Engaging the community is critical for all greenway projects. Bridge development, specifically, should be in areas with the most need and community demand for it. Residents and users likely know what amenities are needed and where. For example, the La Kretz Crossing was identified in the early 1990s as an opportune place for improved equestrian crossing.

Many LA River-adjacent communities are unaware of the benefits of bridges because there are no recent examples of development. Reaching out to stakeholders can help build and maintain support for a project. Some communities are receptive to increased neighborhood access resulting from a new bridge, but others may fear it could bring unwanted visitors. Community engagement is especially important for non-conventional projects, like the La Kretz Crossing. River LA staff attended over 30 community meetings to discuss developing the first cable-stayed bridge in the region.

Community-based organizations that have the trust of local residents may be particularly equipped to conduct community engagement efforts. Consultants can also help solicit community participation and feedback. For example, the City of Glendale attributes community buy-in to the Jewel at the Bend in part due to their consultant's thoughtful engagement process. Providing updates to the community, especially regarding standard and unexpected project delays is important to ensuring long-term support for project development.

Timeline and Construction

Establishing a realistic and flexible project implementation schedule is essential. Delays are inherent with large capital projects and can range from days to years. It is important to consider the compounding nature of delays. For example, the La Kretz Crossing project leads began meeting with stakeholders in March 2011 and expected the project to be complete in August 2013. However, numerous delays postponed projected completion to 2017.

Project construction timelines can vary based on the number of design features, including architectural finishings such as handrails and lighting. The primary lesson is to be patient, yet persistent. Delays can also create opportunities to reevaluate expectations and resource use. Future high-profile bridge proposals should anticipate similar issues.

What are important design considerations?

The design of a pedestrian bridge is primarily influenced by its intended function, users, and budget. With regards to function, intended use should be examined and user groups should be engaged in the design process. Selecting a qualified design consultant is also important: they can be the key to integrating community desires into the design and ultimately, enable the project lead to implement a successful project. For instance, the City of Glendale and their outreach consultant developed a thoughtful and comprehensive strategy, which allowed ample time for community concerns to take shape and be addressed. The City's consultant not only provided engineering guidance, but also incorporated community feedback in a thoughtful and innovative manner. Communication among residents, City staff, and the consultant led to a shared vision and understanding of the value of the Jewel at the Bend bridge.

Function

When planning a bridge project, a series of questions are helpful to consider:

- What is the purpose of the pedestrian bridge?
- Who are the users and do they require specific accommodations?
- Are there LA River crossing opportunities nearby, and whom do they accommodate?
- What are the primary accessibility and connection goals?
- Would a bridge satisfy a local or regional need?

We recommend that project leaders work directly with partners and the community. LA River-adjacent communities are, in general, new to pedestrian bridge developments, and as such, need guidance to understand how functional demands affect bridge design, usage, and potential neighborhood impacts. Successful community engagement can yield creative, user-oriented bridge design ideas. For example, the City of Glendale's community workshops changed perceptions about how the Jewel at the Bend should function to minimize unwanted traffic impacts on local streets: this directly impacted the design options. In the case of the La Kretz Crossing, stakeholder engagement ensured that functionality was not overlooked by the bridge's high-profile design. Both projects demonstrate a key outcome of defining the functionality of large, cross-channel pedestrian bridges and their potential to connect neighborhoods to economic centers and to serve as destinations in and of themselves.

Figure 5 – 30: *The City of LA recently improved the entrances to the Colfax footbridge to be compliant with the American with Disabilities Act. (Location: Studio City).*

Credit: Andrew Pasillas

Figure 5 – 31: *The Laurelgrove Avenue Bridge spans approximately 150 feet over the LA River channel and pathway, connecting a residential neighborhood to the north to a key retail and commercial corridor along Ventura Boulevard to the south. (Location: Studio City).*

Credit: Andrew Pasillas

Figure 5 – 32: *The southern connection point of the Laurelgrove Avenue footbridge terminates at street grade and provides quick direction to an access ramp to the LA River Greenway.*

Credit: Andrew Pasillas

Construction materials can impact operation and maintenance and should be considered during the design phase. For example, the use of steel cables for the La Kretz Crossing was strategic because they are already utilized in other infrastructure projects. As a result, maintenance precedents exist. Amenities and their placement, such as seating, lighting, and landscaping, should also be considered.

Figure 5 – 33: *Access to the Laurelgrove Avenue Bridge is open and includes both signage and a bench.*

Credit: Andrew Pasillas

Figure 5 – 34: *The south entrance to the Variel Avenue footbridge features an American with Disabilities Act-compliant ramp and lighting. (Location: Canoga Park).*

Credit: Andrew Pasillas

Aesthetic Form

When establishing bridge aesthetics, leaders must consider function and funding. Some projects, like the Aliso Creek Confluence bridge, provide access within a limited budget. The design for this project prioritizes natural materials, like weathered steel and hardwood that are proven to withstand high use and require limited maintenance thereby reducing the bridge's cost. Higher-end designs with more components and features, require more material and are likely to result in higher overall costs.

Figure 5 – 35: *Colfax Avenue footbridge is a steel Warren through truss structure that incorporates a wood platform. The use of wood is appropriate because pedestrians are low impact.*

Credit: Andrew Pasillas

Figure 5 – 36: *Ballona Creek pedestrian bridge at Westwood Boulevard. It is a through truss design that is wide and has lighting. (Location: Culver City).*

Credit: Andrew Pasillas

Ongoing community communication, input, and guidance should also influence decision-making. The City of Glendale told the community the budget was roughly $3 to $20 million dollars, depending on funding secured. Their approach and honesty about the budget was crucial to ensuring that the community-led design process would yield feasible options.

Aesthetic form can also be driven by funders, like Morton La Kretz's interest in a cable-stayed bridge. The final form of the La Kretz Crossing was also influenced by the community's demand that the high-profile design be mindful of the natural LA River landscape. In all three case studies, function and design were considered together and with input from stakeholders.

Physical siting

Physically siting a pedestrian bridge and its access points can impact its intended function and users. It is a decision process that should again be largely community-driven. A range of potential locations should be studied and presented to the public, while considering the following:

- Proximity to other bridges that serve intended users
- Existing LA River access points and connections to pedestrian, cyclist, and equestrian routes as well as transit options
- Potential impacts on the surrounding neighborhood, community character, existing uses, and the environment
- Visibility and prominence of the pedestrian bridge
- Jurisdiction, permitting, and use agreements

Selecting a general site location for a pedestrian bridge should be directly linked to community and user needs. Taking inventory of what crossing opportunities are currently available, and how they enable local and regional mobility is an important first step. Once an area has been selected, existing LA River-adjacent amenities should be documented to identify areas that will most benefit from a new bridge. In some cases, guidance for the location is clear.

For instance, the La Kretz Crossing is proposed next to parks and equestrian amenities. Similarly, the Jewel at the Bend will connect to parks as well as bike and pedestrian pathways on both banks of the LA River. It will also serve local businesses and commuters. The Aliso Creek Confluence bridge was sited to increase access to Confluence Park for users on both sides of the tributary.

Figure 5 – 37: *Community access to Sunnyslope Avenue bridge. (Location: Sherman Oaks).*

Credit: Andrew Pasillas

Figure 5 – 38: *Recent enhancements to the Variel Avenue bridge improved its aesthetic appearance and functionality.*

Credit: Andrew Pasillas

Engineering considerations can also impact site selection. For example, the number and placement of features, like pylons, can trigger the need for agency approvals and lengthen the development process. We recommend considering a range of options, including designs that do not utilize in-channel pylons.

Figure 5 – 39: *Renderings of the Jewel at the Bend showing the placement of in-channel pylons.*

Credit: City of Glendale

Figure 5 – 40: *A bridge in Sherman Oaks with connection points above the box-channel structure.*

Credit: Andrew Pasillas

What are important cost and funding considerations?

Because pedestrian bridges are large infrastructure projects, they are inherently expensive and their cost varies significantly based on design. For example, the Aliso Creek Confluence bridge will cost about $600,000, the Jewel at the Bend will be between $3 and $20 million, and the La Kretz Crossing will be just over $9 million. Pedestrian bridges with a range of amenities and engineering challenges can cost tens of millions of dollars.

Expected Expenses

Obtaining construction funding can be a long process, contingent upon the bridge type being proposed. Permitting can also have high costs. For example, an early cost estimate to obtain a "B" Permit and a Building and Safety Permit for the La Kretz Crossing was about $281,000. While the majority of these expenses can be anticipated, the need for multiple project reviews by various agencies can negatively impact a budget. For example, the Aliso Creek Confluence bridge has been reviewed by four agencies, resulting in project delays and increased costs.

Early expenses can include feasibility studies to determine options for bridge types and connection points. These studies can also help to develop community and political support for a pedestrian bridge before construction funding has been obtained. Being comfortable with the shifting nature of the LA River planning environment, especially with regards to funding, is a must. We recommend developing a range of implementable bridge options at different cost scales to ensure that a project is ultimately completed. The City of Glendale utilized this approach for the Jewel at the Bend.

Unexpected Expenses

Unplanned expenses and project delays may arise at any stage of the development process. For example, the La Kretz Crossing unexpectedly needed shock absorbers and a more robust foundation, nearly doubling the initial cost estimate.

The approval and permitting process can be especially long and cumbersome. For creative projects involving numerous jurisdictions, it may be confusing to know what department to go to for various approvals. This type of confusion over the construction of La Kretz Crossing added at least 12 months to the project timeline. Project funders can also set strict timelines for submitting progress updates or spending funds. For example, River LA was unable to meet the deadline to use Active Transportation Program funds for the La Kretz Crossing. This forced the organization to request a 12-month extension, which they were fortunately granted. Delays and potential setbacks should be discussed openly with bridge financers to ensure transparency.

Funding Sources

Funding for footbridges is largely dependent on function and form, and, in most circumstances, is a challenge to identify and obtain. "Seed money" for feasibility studies and other initial expenses can help bridge the gap between project ideas and implementation. It can also influence financial support from others. Project proponents were able to leverage Morton La Kretz's donation for the La Kretz Crossing to secure public funding from numerous agencies.

Simple, utilitarian bridges, like the Aliso Creek Confluence bridge, can be expensive compared to other LA River improvement projects

and difficult to fund due to their small size and perceived minimal impact. This issue requires persistent outreach and coordination with partners to create innovative solutions that accurately present the project as a valuable asset to LA River revitalization.

Multi-million dollar projects, like the Jewel at the Bend, can also face challenges in obtaining funding. Project proponents must have a strong narrative and justification in order to be competitive with other requests. It is unlikely that one funding source will cover the entire development of a project. And therefore, it is important to be creative and to piecemeal sources together. Nonetheless, there are funding opportunities for pedestrian bridge development across the LA River and its tributaries through state and federal grants, propositions, bonds, and private donors.

What are important planning and permitting considerations?

Pedestrian bridges are subject to a complicated and long negotiation process to obtain use agreements and entitlements. Project leads and partners, especially for smaller grassroots efforts, should communicate early and regularly, ask for guidance, and most importantly, conservatively budget for permitting. Interfacing with government agencies can be a slow process. Resubmittals and additional reviews can lead to delays and increased expenses.

For projects with new design concepts, expect planning and permitting processes to take longer than usual. Permitting agency engineers will likely question proposals they have never encountered. Holding conversations about these issues early will help key players become comfortable with your unique project. Similarly, plan to provide technical guidance to partners to help establish new standards and gain agency approval. Problem solving with partners can increase trust, understanding, and collaboration.

Early Conversations and Pre-Support Work

It is crucial that lead entities research site conditions and agency requirements. Early conversations with partners about what will be proposed are especially important during the pre-conceptual or conceptual design phase of footbridge projects. When possible, work within various LA River forums to promote ideas and seek feedback about where setbacks with ownership and permitting are likely to occur. Use these discussions as an opportunity to gauge future difficulties and to prioritize time and resources.

Establishing relationships with agencies responsible for permitting can lay the foundation for a productive bridge development process. For example, River LA held individual briefings with the U.S. Army Corps of Engineers and departments within the City of LA to explain the La Kretz Crossing, and work towards efficient permitting approvals.

Jurisdiction, Permitting, and Use Agreements

It is essential to identify who owns or has the rights to the properties that could be impacted by your project. Private and public properties require different permits and use agreements, agency jurisdiction may not be clear, and agencies have strict standards to protect their liability. For example, most LA River projects, including bridges, require a Flood Permit from the LA County Department of Public Works (LADPW).

Similarly, many of the easements within the LA River corridor restrict certain parcels to narrowly defined uses, which are administered by mutual agreement between easement holders and potential users. Most importantly, flood control easements (also called "drainage easements") administered by LADPW cover the entire LA River corridor up to 25 feet beyond the top-of-bank. Any proposed development within this easement, regardless of underlying parcel ownership, must accommodate flood control and be considered by the LA County Board of Supervisors.

It is important to establish a legal understanding of how the proposed project site is composed, and to spend time upfront identifying responsible parties, fees, and processes in order to avoid surprises and delays.

What are important project maintenance considerations?

A challenging, yet essential component of pedestrian bridge projects is establishing an operation and maintenance program. In general, primary maintenance requirements ensure user safety and structural integrity. This includes scheduling inspections and repairs, providing prescriptive care, and maintaining a clean, safe environment for users. The operation of a pedestrian bridge requires the consideration of if, and when, access will be restricted. This requires a balance of management's liability and creating an effective transportation network. For example, once implemented, the Jewel at the Bend will connect LA River greenway commuters to and from the City of Glendale. However, the City plans to close the bridge from sunset to sunrise, like other parks under its ownership, which would limit when commuters could travel. This issue is still unresolved and demonstrates a common concern that future pedestrian bridges, especially those that are destinations in and of themselves, must address.

Figure 5 – 41: *Example of LA River bridge signage .*

Credit: Andrew Pasillas

Early conversations and consensus on who will operate and maintain the bridge can be useful to address multiple jurisdictional responsibilities (e.g. Jewel at the Bend) and to identify technical specifications that need to be incorporated into the bridge design. Project proponents should also be flexible and creative. In general, when searching for an entity to assume management, it is good practice to ask a lot of questions.

Identifying an agency with the capacity, experience, and resources can be an effective strategy. Project leads should work closely with the agency and ensure the program is sustainable over time. Coordinating this aspect up front can help prevent delays and constraints during other phases of the development process.

Figure 5 – 42: *Browns Canyon Wash pedestrian bridge is a simple steel structure with a concrete platform that does not accommodate maintenance vehicles. (Location: Canoga Park).*

Credit: Andrew Pasillas

Finally, an innovative approach to an operation and maintenance program is to plan management transitions. For example, for the first 10 years of operations, the La Kretz Crossing will be operated and maintained by the LA County Conservation Corps, an organization dedicated to youth workforce development. Thereafter, the City of LA will manage the bridge. This will give the City time to secure resources to adequately take care of the bridge over the long-term.

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SELECT GLOSSARY

This list includes some of the key terms, agencies, and master plans that we refer to throughout the Guide; however, it is not comprehensive. A list of resources is also included at the end of each chapter.

Agencies and Other Organizations

City of Los Angeles Department of City Planning (DCP): Responsible for the City's general plan, including zoning, permitting, and other land use decisions.

City of Los Angeles Department of Public Works: Responsible for the construction, renovation, and operation of City facilities and infrastructure, as well as environmental programs.

- ***Bureau of Contract Administration (BCA)***: Assures contracts are properly and equitably enforced.
- ***Bureau of Sanitation (BOS)***: Responsible for three main project areas: clean water, watershed protection, and solid resources. The Bureau aims to protect human health and the environment. Many of their projects focus on enhancing storm water capture, water quality, and watershed protection.
- ***Bureau of Engineering (BOE)***: Plans, designs, and constructs City infrastructure. BOE administers permits for construction on City property, such as the "B" Permit.
- ***Bureau of Building and Safety (DBS)***: Ensures safe building design and construction in the City. A permit from DBS is required for any construction on privately owned infrastructure in the City.

City of Los Angeles Department of Recreation and Parks (RAP): Responsible for providing residents with safe and accessible park facilities and recreation opportunities. Also supports LA River revitalization efforts.

City of Los Angeles Department of Transportation (LADOT): Responsible for transportation planning, design, construction, maintenance and operations in the City. LADOT's Bicycle Program is responsible for maintaining all of the bike paths within the City, including the bike path along the LA River.

City of Los Angeles Department of Water and Power (LADWP): The largest municipal water and power utility in the nation. LADWP co-authored a Stormwater Capture Master Plan to improve the City's ability to harvest and harness its storm water. The plan includes projects along the LA River to better utilize the channel as a resource.

Community Conservation Solutions: A nonprofit organization that aims to improve water quality and supplies, restore habitat and preserve open space using practical solutions, integrated science, technology, and planning, and through leveraging public and private funds.

Council for Watershed Health: A nonprofit organization whose mission is to advance the health and sustainability of the Los Angeles region's watersheds, rivers, streams and habitat – both in natural areas and urban neighborhoods - through science-based research, education, and stakeholder engagement.

Friends of the Los Angeles River (FoLAR): A nonprofit organization that seeks to protect and restore the LA River's natural habitat and cultural heritage. Their programs include educational activities along the LA River and river "clean-up" days.

LARiverWorks: Housed within Los Angeles Mayor Eric Garcetti's Office, LARiverWorks is a specialized inter-departmental team working to accomplish revitalization of the Los Angeles River.

Los Angeles Conservation Corps (LACC): Provides at-risk young adults and youth with job skills training, education, and work experience. LACC emphasizes conservation and service projects to benefit the community. Their LA River Corps Program focuses on restoring and revitalizing sections of the LA River.

Los Angeles County Department of Public Works (LACDPW): Responsible for six core service areas including water resources. LACDPW oversees flood control, water supply, water quality, and water conservation facilities.

Los Angeles County Flood Control District (LACFCD): Established through the Los Angeles County Flood Control Act in 1915, LACFCD provides flood protection, water conservation, recreation, and aesthetic enhancement within its boundaries. Although part of the LACDPW, the District is governed as a separate entity: the County Board of Supervisors.

Los Angeles County Regional Park and Open Space District (RPOSD): Housed within the Department of Parks and Recreation, the Open Space District was created after the passage of Proposition A, the Safe Neighborhood Parks Act. RPOSD is responsible for acquisition, restoration, and rehabilitation of property for parks, recreation, and natural lands.

River LA: A nonprofit organization tasked with revitalizing the LA River corridor based on guidance from the Los Angeles River Revitalization Master Plan (LARRMP). River LA, previously known as the Los Angeles River Revitalization Corporation (LARRC) works independently and collaboratively with government agencies and other nonprofits to implement sustainable land development projects.

The River Project: A nonprofit organization that advocates for and utilizes a watershed approach to natural resource protection, conservation, and enhancement. Through outreach, advocacy, scientific research, and hands-on educational programs, they aim to provide Angelenos with tools to create climate resilient communities.

Rivers and Mountains Conservancy: One of ten conservancies within the California Resources Agency aimed at preserving open space and habitat to provide for low-impact recreation and educational uses, wildlife habitat restoration and protection, and watershed improvements within Eastern Los Angeles County and Western Orange County.

Mountains Recreation and Conservation Authority (MRCA): A local government public entity dedicated to the preservation and management of local open space and parkland, watershed lands, trails, and wildlife habitat. MRCA works with other public agencies and nonprofits to acquire parkland, and plan and implement park improvement projects.

North East Trees: A community-based, grassroots nonprofit that builds parks to create recreation opportunities and gateways to bike, pedestrian, and equestrian paths. Many of their projects are located along the LA River.

San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC): Created in 1999 by the California legislature and housed within the California Resources Agency. RMC works to ensure the LA River (and other resources within their service area) is preserved and continues to provide recreational opportunities for the public.

The Trust for Public Land (TPL): A national nonprofit that focuses on land conservation, creating parks and other open spaces for people and communities through on-the-ground projects and policy.

United States Environmental Protection Agency (EPA): Responsible for administering the Clean Water Act, the EPA supports environmental projects. EPA state offices oversee environmental permits and project compliance.

United States Army Corps of Engineers (USACE): The LA District focuses on both flood control and ecosystem restoration projects, often involving the LA River. USACE has permitting authority over large stretches of the LA River.

Village Gardeners of the Los Angeles River: A volunteer-led nonprofit organization that engages community members to enhance the LA River greenway between Coldwater Canyon Avenue and Fulton Avenue, in Studio City and Sherman Oaks.

Watershed Conservation Authority (WCA): Seeks to conserve and preserve open space through the improvement of access to parks and trails. Partnering with local and regional entities, WCA helps implement projects along the LA River.

Master Plans

Los Angeles River Master Plan (LARMP): Approved in 1996 by the LA County Board of Supervisors. LARMP was developed by a committee of cities, agencies, and citizen groups coordinated by the National Park Service and the LA County Departments of Public Works, Recreation and Parks, and Regional Planning. The plan aims to provide a long-term vision for the LA River.

- ***Los Angeles River Landscape Maintenance Manual***: Prepared in 2002 for the LA County Department of Public Works as a supplement to LARMP. Provides guidance for the design of amenities, such as plant palettes and outdoor furnishings. Includes information regarding basic standards of care for irrigation, weed management, graffiti, soil testing, etc.
- ***Los Angeles River Master Plan Landscaping Guidelines and Plant Palettes***: Created as a supplement for the LARMP in 2004. This plan enhances the identity of the LA River through planning guidance regarding watershed management, native plant landscapes, public recreation, non-motorized transportation, and sustainable energy, and materials.
- ***Los Angeles River Master Plan Sign Guidelines***: Published in 2003 as a supplement to LARMP, these guidelines outline standards for signage along the LA River.

Long Beach Riverlink: Plan published in 2007, it crafts a vision for the west side of the City of Long Beach, suggesting projects that could connect the City and its communities to the LA River. While the plan is similar to LARRMP, it does not include reconfiguration of the existing flood control levees.

Los Angeles River Revitalization Master Plan (LARRMP): Published in 2007 and developed by the City of LA in collaboration with nonprofits and community stakeholders. The plan provides a framework for transforming the 32 miles of the LA River within the City into a community resource and amenity for all residents and visitors. The plan includes recommendations for short and long-term projects, policy and LA River governance.

Urban Greening Master Plan for the Gateway Cities and Lower Los Angeles and San Gabriel Rivers: Currently in development and led by the Watershed Conservation Authority. The plan aims to enhance the lower half of the LA River by increasing community access, park space, and other recreational opportunities.

Terms

50% Construction Drawings: A term used to designate when approximately 50% of the construction drawings for a project are finished. This is typically a major milestone in project development.

Best Management Practices (BMPs): A set of managerial practices and/or techniques that are deemed most acceptable, both effective and practical, in addressing water quality and soil conservation. Examples of storm water BMPs include permeable pavement, green infrastructure like infiltration trenches, and vegetated drainage channels.

Bioswale: A landscaping element like a drain used to remove pollution from surface water runoff. They provide an alternative to storm sewers.

Brown Fields: Previously contaminated land that is now abandoned or underused.

California Environmental Quality Act (CEQA): Aimed at preventing environmental damage in California due to project implementation. CEQA guides the California Department of Fish and Wildlife regarding permit issuance and project approval. It seeks to encourage public participation, agency transparency, and environmental protections. Most LA River projects have to file a Negative Declaration (ND) or Environmental Impact Report (EIR) to be in compliance with CEQA.

Class I Bike Path: A path separated from cars and typically streets for bicyclists and pedestrians to use. These paths are generally well marked and landscaped with limited cross-flow traffic.

Confluence: The merging of two bodies of water. Usually referring to two rivers of approximately equal width, but also could apply to the meeting of the LA River and a tributary.

Contaminant Plume: An area of polluted ground water.

Decomposed Granite: A natural, permeable hardscape material. It is similar to granite but usually finer. It is made from weathered and eroded solid granite, which is a type of rock.

Easement: A legal right to cross or use someone else's land for a specified purpose.

Environmental Impact Report (EIR): A report required under CEQA for development projects in California. An EIR documents the potential environmental effects from a specified project and ways to avoid, mitigate, and/or offset them.

Equestrian: A person who rides horses.

Erosion: The gradual diminution of something due to natural agents like wind or rocks.

Green Infrastructure: An approach to water management that uses natural processes, such as restoring a stream to its original hydrological flow, to improve water quality, and to manage water quantity.

Hardscaping: The inanimate objects included in landscaping. Hardscaping consists of hard materials, such as concrete, stone, or metal.

Infiltration: The flow of water into soil or another porous substance.

Los Angeles City "B" Permit: Required by the Bureau of Engineering for extensive public works projects, such as construction of bridges, retaining walls, and installation of storm drains. The B Permit has three phases: estimate, design, and construct.

Measure R: A half-cent sales tax in LA County to finance transportation projects. Measure R took effect in 2009. Environmental review, as required by CEQA, is necessary before approval of any Measure R project.

Memorandum of Understanding (MOU): A formal agreement between two or more parties that is not legally binding.

National Environmental Protection Act (NEPA): A national law establishing environmental policies. NEPA was signed into law in 1970 and established the White House Council on Environmental Quality (CEQ) to ensure Federal agencies and decision makers meet obligations set out by NEPA.

Negative Declaration: A document produced after initial review of the project implementation plan that states that the project will have no negative environmental impact.

Open space: An area, such as a park, that is valued as a natural resource for recreation and/or other public benefits.

Permeable Pavement: A sustainable material that allows water to move through it. It can improve storm water capture and enhance water quality.

Pylons: A structure that is used to support infrastructure, for example, in bridge construction.

Right of entry: The legal right to enter an area that is owned by another entity or to take back ownership of an area.

Right-of-way: The legal right to pass through an area that is owned by another entity.

Superfund Site: Ares within the United States that have been identified under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as being contaminated with hazardous substances and pollutants and requiring clean up.

Sustainability: This Guide uses "sustainability" to describe sustainable products, which are products that protect public health and the environment over the entire life cycle of the product. Sustainable products provide environmental, social, and economic benefits.

Tributary: A river or stream that feeds into a larger river or lake.

United States Army Corps of Engineers (USACE) Section 408 Permit: Section 408 authorizes the Secretary of the Army to allow alterations and modifications to USACE properties if those alterations do not negatively impact the public interest or project usefulness. The LA River is partially maintained by USACE, therefore, any changes to it will likely require a 408 Permit.

Use Agreement: A formal agreement between parties regarding use of and access to a public area.

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