

Chapter 4:

Pathways

along the Los Angeles River

Introduction

Definition and Benefits

Linear pathways along both sides of the Los Angeles River 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). Gaps exist both in terms of the pathway network itself and the development of the surrounding greenway.

(INSERT 2.1.1 Pathway users enjoy a shaded bike path and seating areas along the Los Angeles River. Credit: Andrew Pasillas)

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.

(INSERT 2.1.2 The beginning of a meandering nature trail with restored native habitat connected to Valleyheart Greenway's path. Credit: Andrew Pasillas)

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

Pathways along the 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.

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

- **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.

(INSERT 2.1.3 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. As such, we do not specifically highlight undercrossings or overpasses in this Guide. However, the *Los Angeles River Revitalization Master Plan* calls for these and all other types of crossings in future efforts to ensure a safe and continuous River greenway.

Another important note about the scope and organization of this Guide: our focus on individual projects is not an endorsement of a project-by-project approach to river revitalization, which can sometimes feel piecemeal. Instead, our aim is to accurately document what has happened in the past to help inform and inspire similar efforts that over time may become ever more integrated and transformative. In addition, organizing our research and the Guide by four project archetypes provided a helpful, logical structure in our desire to make the Guide reader-friendly. We recognize that this organization requires a simplification of reality in which projects involve a combination of improvements rather than merely one type of feature. For example, the pathways featured in this chapter involve landscaping and habitat restoration surrounding the pathway. We emphasize the importance of pathways as part of a complete and comprehensive river greenway.

(INSERT 2.1.10 Crossing Laurel Canyon Boulevard to access Valleyheart Greenway can be dangerous. Credit: Andrew Pasillas)

(INSERT 2.1.11 Built in 2002, the Alex Baum Bicycle Bridge is an example of a 120-foot crossing over Los Feliz Boulevard adjacent to the LA River's west bank. Credit Henry McCann)

(INSERT 2.1.12 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 available 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 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.

(INSERT 2.1.5 Although unpaved and restricted, users travel along the LA River's east bank on this dirt path demonstrating the need for safe and maintained public pathways. Credit: Henry McCann)

(INSERT 2.1.6 The start of the lower LA River bike path at Atlantic Boulevard in City of Vernon. Credit: Henry McCann)

(INSERT 2.1.7 The lower LA River located in the City of Long Beach, is well maintained and features adjacent landscaping and access to DeForest Park. 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's *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 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 the Los Angeles River Revitalization Corporation, aim to garner support

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

for the development of this continuous 51-mile active transportation and recreational corridor among River-adjacent communities.³

(INSERT 2.1.8 Cyclists (active recreationalists) on the River bike path travel past fisherman (passive recreationalists) in the Elysian Valley. Credit: Andrew Pasillas)

Strategically Prioritizing Pathways Projects

With the goal of a continuous 102-mile greenway and limited resources to implement such a vision, criteria to prioritize pathway locations is required. Analysis should consider user demand, financial feasibility, environmental conditions, and larger questions, like how pathways can link bike and pedestrian networks within 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 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 below 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 pursuing similar projects, and summarizes best practices and lessons learned from the case studies. A summary of the defining elements of each project is shown below:

(INSERT 2.1.9 Map showing the proximity of the case study projects and nearby paths. Credit: UCLA Luskin Center via Google Earth and Norman Wong, UCLA Lewis Center)

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

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: Alternative approach to LA River pathway development that is less focused on 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

Zev Yaroslavsky 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 Proponent: Community Conservation Solutions

Cost: ~\$2.3 million

Completed: Anticipated completion fall 2016

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 Proponent: City of Los Angeles

Cost: ~\$6 million (for both Reach I and II—about a mile of pathway)

Completed: 2015

Pathways 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. This case study is focused on the development of a quarter-mile walking path. 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.

(INSERT: Figure 1 Student-designed Great Toad Gate welcomes users at the east entrance to the Valleyheart Greenway. Credit: Andrew Pasillas)

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 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.

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.

(INSERT: Figure 15 Aerial perspective of Valleyheart Greenway (green line) in context to the Studio City River Greenway (red line), surrounding residential neighborhoods, and business corridor. Credit: Luskin Center for Innovation and Google Earth)

Project Goals
<ul style="list-style-type: none">Enhance public access to the LA River through outreach and the creation of a usable greenway;

<ul style="list-style-type: none"> • Increase riparian habitat; • Stimulate a sense of community ownership of the greenway; and • Educate the community about LA River issues, such as the natural riparian heritage and the River’s relationship to the Pacific coast.
Project Opportunities
<ul style="list-style-type: none"> • 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; and • Provide the California Coastal Conservancy with an ideal project to implement.
Information from: The River Project, <i>Los Angeles River Community Design—Studio City</i> , March 2002.

Table XX: Goals of and opportunities for the Valleyheart Greenway project

Prior to the development of Valleyheart Greenway, relatively few pathway projects had been established along the 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 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, which was funded by the California Coastal Conservancy. 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 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 and fun idea to educate and involve elementary school students in the development of Valleyheart Greenway. Not only did they teach students about the 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 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 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 to inform them of meetings. 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.

(INSERT: Figure 5, 7-9 First conceptual design(s) prioritizing native planting along the pathway. 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 River greenway instead of the proposed parking lot at the site, 3) it 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

(INSERT: Figure 4 Original site conditions lacked natural vegetation. Credit: The River Project)

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. The River Project was assisted by a civil engineer and a local landscape architect familiar with this stretch of the River. 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.

Key Design Requirements and Constraints
<ul style="list-style-type: none"> • Maintenance truck accessibility, including a flat turnaround area, for emergencies and periodic cleaning of the weir, a dam that diverts or regulates flow (See figure xx) • Features (e.g. fencing, guardrails, retaining walls) must meet specific standards for

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.

<ul style="list-style-type: none"> 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, <i>Los Angeles River Community Design—Studio City</i> , March 2002

Table XX: Key design requirements and constraints

(INSERT: Figure 6 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.

(INSERT: Figure 11 Cyclist entering the path near Radford Avenue. Credit: Andrew Pasillas)

Valleyheart Greenway Path 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, <i>Los Angeles River Community Design—Studio City</i> , March 2002	

Table XX: Some Valleyheart Greenway design features

(INSERT: Figure 14 Finding and engraving flat rocks with the names of students designer demanded a lot of The River Project staff’s time, but was appreciated by all. 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 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. The City took charge of the Studio City River Greenway. 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.

(INSERT: Figure 17 Path is wide enough to allow for easy maintenance. Credit: Andrew Pasillas)

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

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

Pathways Case Study 2

Zev Yaroslavsky L.A. River Greenway Trail

The development of Zev Yaroslavsky 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.

(**INSERT**: 2.2.2.2 Zev Yaroslavsky L.A. River Greenway Trail Project proposed for the River's north bank. Credit: Mia Lehrer + Associates, 2014)

Origins, Goals, and Timeline

A main goal of the Zev Yaroslavsky L.A. River Greenway Trail Project is to bridge the gap in the 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 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 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 River in the San Fernando Valley.

(**INSERT** 2.2.2.3 Map of the trail in relation to parks, transit stops, and other amenities. Credit: Mia Lehrer + Associates, 2014)

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

(**INSERT** 2.2.2.1 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 Yaroslavsky 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 Yaroslavsky 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 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's *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 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 and its restoration. Other amenities planned along the trail include an Americans with Disabilities Act-compliant ramp, benches, interpretive River story panels integrated with the fence to visually tell both the human and natural history of the River, and a drinking fountain for both people and pets.

(INSERT 2.2.2.5 Site plan showing the location of bioswales, pedestrian ramps, and other project features. Credit: Mia Lehrer + Associates, 2014)

(INSERT 2.2.2.6 Site plan of the Native Habitat Walk Demonstration Garden. Credit: Mia Lehrer + Associates, 2014)

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.

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 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 River's function as a natural habitat corridor. Landscaping plans were driven by a science-based, ecosystem-based approach. Currently, a lot of 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 River.

⁵ LARRMP calls for bike paths to be developed on the River's south bank, which the next case study featured is doing.

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>

(INSERT 2.2.2.4 Site plan showing the location of project features and a plant schedule. Credit: Mia Lehrer + Associates, 2014)

(INSERT 2.2.2.9 Site plan from trail users' perspective. Credit: Mia Lehrer + Associates, 2014)

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

(INSERT 2.2.2.7 Rendering of trail from Whitsett Avenue. Credit: Mia Lehrer + Associates, 2014)

Cost and Funding

The Zev Yaroslavsky L.A. River Greenway Trail Project represents how to creatively piece 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 under 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.

(INSERT 2.2.2.8 Rendering of the trail's Native Habitat Walk and River Viewing Area. Credit: Mia Lehrer + Associates, 2014)

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.

Permitting, Use Agreements, Operations, and Maintenance

The experience that North East Trees brought to the team as a contractor informed 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. 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 River.

(INSERT 2.2.2.10 Rendering of the Rivers and Mountain Entry Gate to the trail at Whitsett Avenue. Credit: Mia Lehrer + Associates, 2014)

Pathways 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. 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 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 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.

(INSERT 2.2.3.1 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 River greenway along the 32 miles of the River within the City.

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.

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 River related projects, and construction was led by Simgel Company, Inc. Los Angeles County Department of Public Works and the U.S. Army Corps of Engineers 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 River, that 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.

(INSERT 2.2.3.2 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)

(INSERT 2.2.3.1-1 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.

Stakeholders expressed safety and aesthetic concerns. 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 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 River.

(INSERT 2.2.3.3 Wave-shaped fencing, Class I Bike Path, bioswale, and gabion walls at Los Angeles Riverfront Park. Credit Andrew Pasillas)

For thoughtful and sustainable softscaping, ML+A aligned landscaping decisions for 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.

(INSERT 2.2.3.8 Establishing native plants at Los Angeles Riverfront Park. Credit: Andrew Pasillas)

(INSERT 2.2.3.7 Sitting areas along the pathway encourage users to sit and relax. Credit: Andrew Pasillas)

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 River.

(INSERT 2.2.3.9 Close up of a gabion walls. Credit: Andrew Pasillas)

(INSERT 2.2.3.5 Bike facilities, seating area, and the pathway along Sepulveda Boulevard. Credit: Andrew Pasillas)

(INSERT 2.2.3.13 A staircase midway along the path connects the surrounding community and a small neighborhood park to the pathway. 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

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.

(INSERT 2.2.3.6 Los Angeles Riverfront Park and its pathway near Kester Avenue. Credit: Andrew Pasillas)

(INSERT 2.2.3.7 Low vegetation allows for a clear line of sight from Valleyheart Drive to the pathway. 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 added 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. 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.

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

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

to community feedback about aesthetics and because the wave-shaped fencing is consistent with other greenway developments.

(INSERT 2.2.3.10 Gabion walls are also utilized for seating areas. Results of planting hydroseed are also shown. 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 River. A permit from the U.S. Army Corps of Engineers was also required because all projects that may impact the 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.

(INSERT 2.2.3.11 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 River can be utilized to enable active transportation and community connections. Table XX summarizes the case studies and their key characteristics.

	Valleyheart Greenway	Zev Yaroslavsky 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 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 Leads	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)

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 XX: Summarizes the three case studies featured and their key defining characteristics

Summary of Challenges and Strategies to Overcome Them

Table XX: Developing Greenway Paths Along the LA River		
Development Process	Challenges	Solutions
Community engagement	<ul style="list-style-type: none"> Authentically engaging the community Satisfying government agency and funder requirements while allowing the project to be community driven 	<ul style="list-style-type: none"> Allocate sufficient time and resources for community engagement Cast a wide net to reach a range of community and regional stakeholders Hold more than a couple of community meetings; consider door knocking and working with community leaders If possible, involve the public at all project stages; pay special attention to providing guidance to support authentic, community-driven designs Partner with experts and/or seek grants that reward authentic community engagement
Design	<ul style="list-style-type: none"> Educating the community to genuinely participate in the design process Balancing unique designs with permitting 	<ul style="list-style-type: none"> Pursue community-driven design processes Use common design standards such as the <i>Los Angeles River Master Plan's</i> Landscaping Guidelines and Plant Palettes¹¹ Communicate with permitting agencies to

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

	<ul style="list-style-type: none"> requirements Accommodating the interests of multiple users 	<ul style="list-style-type: none"> ensure that designs meet requirements Utilize common signage standards such as <i>Los Angeles River Master Plan's Sign Guidelines</i>¹² to help direct users on how to share the pathway
Physical siting	<ul style="list-style-type: none"> Potential sites may be limited and/or unusual shapes 	<ul style="list-style-type: none"> Be creative when considering potential sites Meet with permitting agencies to discuss site conditions that may affect future permitting processes
Cost	<ul style="list-style-type: none"> Balancing upfront costs with longer term maintenance costs Managing unforeseen site conditions Covering project costs up front 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Identifying sources Covering all project costs Addressing strict guidelines, including grants provided on a reimbursement basis 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Identifying and connecting with the appropriate agency staff Managing project delays, including multiple project reviews 	<ul style="list-style-type: none"> Identify direct points of contacts early; partner with entities familiar with permitting projects along the 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
Operation and	<ul style="list-style-type: none"> Identifying a suitable 	<ul style="list-style-type: none"> Consider partnering with an entity

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

Maintenance	<ul style="list-style-type: none"> management entity Sustaining sites without dedicated funding 	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Managing unexpected delays and changes in the project timeline 	<ul style="list-style-type: none"> Expect delays, allocate extra time for it, 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

Table XX Potential challenges and solutions for each step of the development process.

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 River and then develop a vision. For example, Community Conservation Solutions identified: 1) a lack of public access to the River in Studio City; 2) an underutilized maintenance road; 3) a need to restore native habitat, and 3) 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.

(INSERT 2.3.1 Stairs from the adjacent neighborhood to access the Valleyheart Greenway. Credit: Andrew Pasillas)

Leadership and Collaboration

Complex 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

requirements. 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.

(INSERT 2.3.2 Paved area allows maintenance vehicles to easily access the Valleyheart Greenway. Credit: Andrew Pasillas)

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 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 River greenway utilization.

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

Stakeholders should be viewed as project partners. When developing a project work plan and overall strategy, think about how community members should participate at each stage of greenway path development. It is valuable to consider how they can meaningfully provide input on design options. 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.

We also recommend thinking about how the perception of pathway ownership varies across age and generation. For example, The River Project 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. This is a much different outcome than what would occur if stakeholders just attended one community meeting about the project.

Community-based nonprofit organizations are often particularly well suited to coordinate public involvement and engagement. The River Project, for example, went door-to-door to nearby

residents asking them to be part of the process. Consultants could also help to engage the public, but this may separate the community from those directing the project or lead stakeholders to perceive that the engagement process is required but will not truly influence the final outcome.

Timeline

While future projects will differ in complexity, on average an ideal 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 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. One example is the development of the Valleyheart Greenway, which 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 Yaroslavsky 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.

(INSERT 2.3.3 Spoke Bicycle Cafe in the Elysian Valley provides bikeway users with drinks, food, bicycle repairs, and a social space. Credit: Andrew Pasillas)

Design

River pathways should be representative of distinct neighborhoods and communities, creating a network of segments with different styles. 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.

Encouraging stakeholder feedback into 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

(INSERT: 2.3.5 The West Valley Bikeway in Canoga Park is a Class I Bike Path with amenities such as lighting and signage. Credit: Andrew Pasillas)

(INSERT: 2.3.6 The Los Angeles River Headwaters' pathway in Canoga Park being utilized by a range of user types. Credit: Andrew Pasillas)

(INSERT: 2.3.7 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)

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 River's linearity also somewhat restricts pathway designs.

(INSERT: 2.3.8 Fitness equipment amenities on the West Valley Bikeway in Canoga Park. Credit: Andrew Pasillas)

(INSERT: Examples of directional, instructive, and informative signage found throughout the River corridor. Credit: Andrew Pasillas)

Pathway accessibility originates primarily at pathway ends, via ramps which should be developed in compliance with the American 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

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>

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: Community 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 River's natural environment. The Zev Yaroslavsky 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.

(INSERT: 2.3.9 A range of vegetation was used to landscape the Los Angeles Riverfront Park. 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 they 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 its 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.

(INSERT: 2.3.10 Studio City River 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 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 Yaroslavsky 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 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 River channel for flood control. Each project along the River has different site conditions that USACE must

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>

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.

Challenges can be anticipated during LA County's plan check process—this 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 River. In each case examined in this chapter, the path right-of-way is owned by the Los Angeles County Flood Control District. 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, the Los Angeles Riverfront Park and pathway development 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 +

¹⁷ Los Angeles River Landscape Maintenance Manual. (2002). Retrieved from <http://www.ladpw.org/WMD/watershed/LandscapeMaintenanceManual.pdf>

Associates, reportedly because of their expertise in designing River greenway projects that minimize maintenance needs. It is also important to select caregivers who understand how to differentiate between native and invasive plants.

(INSERT: 2.3.11 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.

(INSERT: 2.3.12 Regular maintenance is necessary to ensure safe accessibility to and efficiency of the greenway. Credit: Andrew Pasillas)

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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Community Conservation Solutions

- Esther Feldman, President
- Joe Laskin, Assistant Project Manager

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