

Los Angeles County  
Metropolitan Transportation Authority

# Conceptual Design Report Executive Summary

## LA RIVER PATH



September 2019





EX

EXECUTIVE SUMMARY





# PROJECT OVERVIEW

## Overview

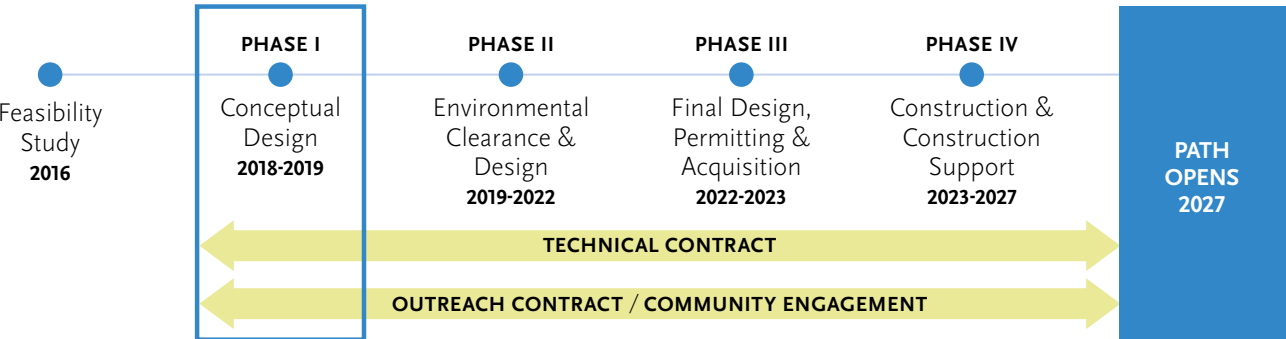
The LA River Path project will design and construct an approximately 8-mile walking and bicycling path along the Los Angeles River between Elysian Valley and the City of Maywood through downtown Los Angeles (see Map 1). The project will close the longest remaining gap in the LA River Path to serve existing communities and meet future demand. When complete, this facility will provide a seamless 32-mile grade-separated regional corridor for walking, rolling, and bicycling from the San Fernando Valley to Long Beach along the Los Angeles River.

Metro, along with a number of local and regional organizations, has long identified closing the gap in the LA River Path between Elysian Valley and Maywood as a high-priority walking and bicycling infrastructure project, including the 2016 Metro Active Transportation Strategic Plan, the City of Los Angeles Mobility Plan 2035, City of Vernon Bicycle Master Plan, and the 2016 Metro LA River Bike Path Gap Closure Feasibility Study.

There are multiple project phases that will occur before the path can open in 2027. In Phase I (see Figure 1), the project team worked through conceptual design, which included technical studies to learn more about the corridor’s existing conditions, and outreach to understand the community’s needs and desires. As part of this process, path alternatives were developed that can overcome the physical and regulatory challenges identified throughout the corridor and best serve the community’s needs. These alternatives will be further studied during Phase II.

Phase II will begin in late 2019 and will take the project through the environmental clearance process and identify a locally preferred alternative (LPA). During Phase III, the project will progress through final design, permitting, and real estate. Construction is scheduled to begin during Phase IV, as early as 2023.

Figure 1. Project Timeline





Map 1. LA River Path Project



## Project Stakeholders

Agencies, stakeholders, and the community are integral to the planning and development process of the LA River Path project. A Steering Committee oversees the project and supports decision making, and a Project Development Team (PDT) provides interagency coordination, technical guidance, and problem solving. A community inclusive process brings together community members through stakeholder roundtables, community open houses, pop-up events, and surveys to discuss priorities and community needs.

## Funding

The Los Angeles County Transportation Expenditure Plan for Measure M identified \$365 million (in 2015 dollars without escalation) for design and construction of the core path alignment.

## What is This Report?

The Conceptual Design Report presents a vision for the future LA River Path that is efficient, sustainable, equitable, safe, and accessible to everyone. Driven by the project's mission and goals, the report aims to capture the project corridor, the community's needs, and recommend three path alternatives to be studied for environmental review. Included in this report are overviews of path analytics, existing conditions, path design concepts and guidelines, and the evaluation process used to identify path alternatives.

# COMMUNITY BENEFITS

## Populations Served

The LA River Path will serve the communities who live, work, and play near the corridor. Over one million people live within three miles, many of whom are not well served by infrastructure for walking and bicycling. Approximately 29% of the population in this area lives in poverty,<sup>1</sup> and more than 22% of the working-age population does not use automobiles as a primary mode of transportation. The largely industrial landscape holds tens of thousands of jobs, with more than 50,000 people employed in the City of Vernon alone.

The people who live within a half-mile and three miles of the river represent those who could walk and bicycle from home to the LA River Path. One-half mile is considered a comfortable walking distance, while three miles is considered a comfortable bicycle ride. A significant number of adults in the assessment area walk, bicycle, and take public transit as their primary mode of travel.

Within the LA River Path project corridor:<sup>2</sup>

**85,000**   
people live within walking distance of the Los Angeles River (1/2 mile)

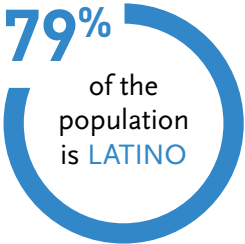
OF THE **1** MILLION   
people who live within biking distance of the Los Angeles River (3 miles)

**22%** of working-age people  
WALK, BIKE, or TAKE TRANSIT

Median household income is:

**\$42,600**

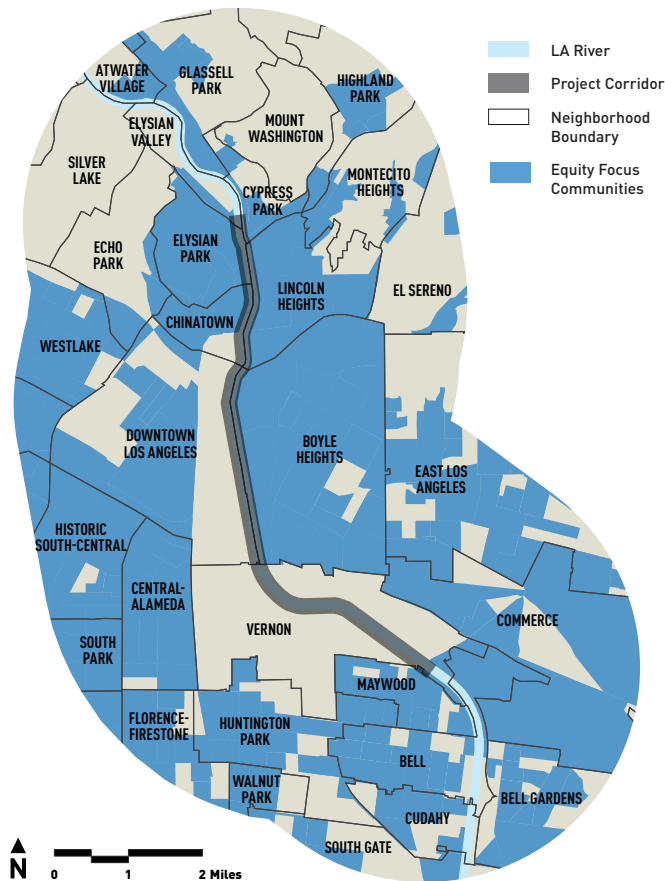
**29%** live in  
POVERTY



<sup>1</sup> The U.S. government defines the federal poverty level for a family of four as \$25,000 per year. The term “low-income individual” means an individual whose family’s taxable income for the preceding year did not exceed 150 percent of the poverty level amount, approximately \$37,500 for a family of four.

<sup>2</sup> ACS 5 year 2016

Map 2. Equity Focus Communities within 3 miles of LA River Path<sup>1</sup>



## Equity

In February 2018, Metro adopted an Equity Platform Framework to acknowledge that access to opportunity should be a core objective of public decision making, public investment, and public service—and transportation is an essential lever to enabling that access. The equity platform provides a basis for Metro to actively lead and partner in addressing and overcoming those disparities.

In order to measure and track the future equity impacts of its transportation projects, Metro recently developed a framework to identify Equity Focus Communities (EFCs), or those communities that are most heavily impacted by gaps in equity in Los Angeles County.<sup>2,3</sup>

The LA River Path project used this framework to identify the EFCs within three miles of the project corridor (Map 2). EFCs exist along both sides of the project corridor, and include the communities of Elysian Valley, Lincoln Heights, Boyle Heights, and the City of Maywood, among others. Approximately 72% of the estimated population of the census blocks within 1/2 mile of the project corridor live in an EFC.

The LA River Path will help promote access to opportunity in these EFCs by providing a safe, reliable, and low-cost active transportation corridor for the people that live there. The future path will connect these communities with transit, job centers, and other key destinations, increase active transportation mode share, and contribute to lower greenhouse gas emissions.

Equity considerations for the LA River Path will be addressed during design and planning, as well as throughout the community engagement process, to ensure the facility planning, design, and implementation addresses the concerns of the communities the path will be serving.

<sup>1</sup> ACS 2017, 5 year

<sup>2</sup> Metro Planning and Programming Committee, June 19, 2019, Long Range Transportation Plan Update

<sup>3</sup> For the purposes of identifying EFCs, Metro is using the following thresholds:

- >40% Low Income
- >80% Non-white
- >10% Zero Car
- Meets low income and EITHER non-white OR zero car thresholds

# MISSION AND GOALS

## Overview

The project is driven by a mission statement and goals, which were shaped by the project stakeholders and the community through the public engagement process.

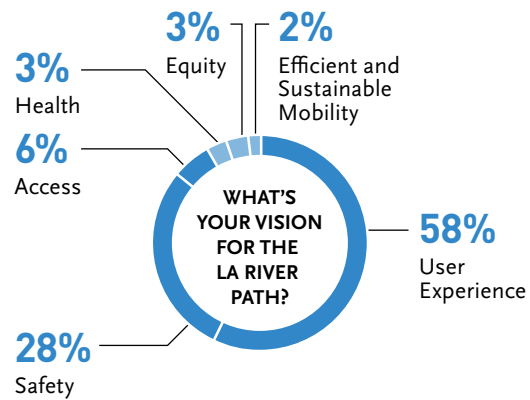
At the outset of the project, engagement activities were focused on familiarizing the community with the LA River Path project and gathering feedback to help develop the mission statement and goals. Community members were asked to comment on how they currently use the Los Angeles River, as well as their vision and goals for the future path.

Several consistent themes emerged during this process:

- Create a great user experience
- Make the path safe
- A desire to use the path for recreation/commuting
- Provide access to transit, jobs, and key destinations

This feedback was used to develop the project mission statement and goals outlined on the next page.

Figure 2. Community members' comments were categorized by the six project goals.



When asked to describe their vision for the path and prioritize the issues most important to them, community members overwhelmingly provided comments relating to two goals: User Experience (58%), e.g., landscaping, shade, and maintenance, and Safety (28%), e.g., lighting and separation of users. An overview of engagement activities can be found on page EX-15, and additional feedback on mission and goals can be found in Chapter 3.









## Mission Statement

*Create a safe and world-class active transportation corridor along the Los Angeles River between Elysian Valley and Maywood for people of all ages and abilities that enhances recreation, livability, regional connectivity and provides:*

- *An outstanding user experience*
- *Access to opportunity*
- *Separation from vehicular traffic*

## Goals

	<b>Safety</b>	Create a path that improves safety from existing conditions.
	<b>Access</b>	Create a path that increases access from local neighborhoods to employment centers, regional destinations, resources, and amenities, including healthcare services.
	<b>Efficient and Sustainable Mobility</b>	Create a path that reduces vehicle miles traveled by allowing people to walk and bicycle in a low-stress environment through and within Los Angeles County, reducing trip lengths, and expanding travel choices.
	<b>Equity</b>	Create a path that improves access to opportunity for historically under-invested communities, especially in low-income communities of color.
	<b>User Experience</b>	Create a path that feels safe, comfortable, and is activated by the people who are drawn to it, because it is a world-class transportation corridor.
	<b>Health</b>	Create a path that inspires physical activity and opportunities for healthy choices in everyday life.

# EXISTING CONDITIONS

## Existing Conditions

The eight-mile project corridor exists within a complex landscape; it follows the flow of the river and is surrounded by rail, roads, utilities, bridges, and pathways. Many of the neighborhoods adjacent to the project corridor are predominantly industrial, with high volumes of truck traffic, deteriorated roadways, a lack of sidewalks, and at-grade rail crossings. There are also high volumes of freight and passenger rail surrounding portions of the corridor, creating a barrier between the proposed path and on-street mobility connections to communities. More information on the project corridor's context and existing conditions can be found in Chapter 5.

### EXISTING PATHS ALONG THE LOS ANGELES RIVER

There are 24 miles of existing path along the Los Angeles River: the Los Angeles River Greenway Trail to the north of the project corridor and the Los Angeles River Bicycle Path to the south. Once complete, the LA River Path project will connect the two existing paths to create 32 continuous miles of pathway along the Los Angeles River. Public feedback about the existing paths reflects a lack of connectivity, safety, and high-quality path design.

Three agencies conduct operations and maintenance (O+M) on the existing LA River Path: the City of Los Angeles, Los Angeles County, and the Mountains Recreation and Conservation Authority (MRCA). However,

several city departments contribute to overall O+M, leading to a complicated structure.

### MOBILITY CONNECTIONS

The LA River Path will connect to on-street bicycle networks via access points. Potential access points were selected to connect to existing, funded, and planned walking and low stress bicycling infrastructure such as Class III neighborhood bicycle routes (i.e. shared-use, low volume, low-speed neighborhood streets), and Class IV protected bikeways. In addition to bicycle network connections, the LA River Path will also provide connections that serve people walking and taking transit including connections to Union Station, and Gold and Blue Line Stations.

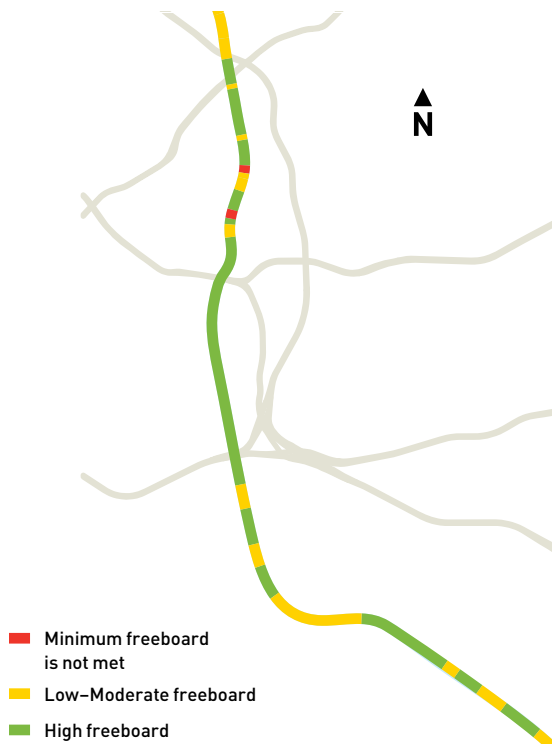
### THE RIVER CHANNEL

A driving consideration for the alignment of the LA River Path is the configuration of the Los Angeles River channel, which is broadly configured into two channel shapes, trapezoidal and rectangular, with a channel width ranging from approximately 200 to 500 feet. The trapezoidal channel is wider and features sloped walls, while the rectangular channel is more narrow with vertical walls.

### HYDROLOGY

The primary function of the Los Angeles River is flood protection. It is important to maintain flood control for public safety, to protect the neighborhoods surrounding the Los Angeles River from flooding, and to protect the public from flood waters.

Figure 3. Hydrology



In order to analyze the feasibility of constructing a path within the Los Angeles River corridor, United States Army Corps of Engineers (USACE) HEC-RAS (5.0.7 version) hydraulic modeling software was used to evaluate the existing hydraulics of the Los Angeles River. The model results provided water surface elevations (WSE), minimum freeboard, channel velocity, and the Froude number along the channel profile (a value that describes open channel flow).

Freeboard is the space between the top-of-bank and the computed WSE. It can be used to identify areas along the channel where the river has relatively more or less hydraulic capacity, or where the channel may have more or less room for the path.

The project team considered hydrologically constrained areas when developing and evaluating the feasibility of path alignments.

## RAIL AND UTILITY CORRIDORS

The Los Angeles River is an important corridor for both commuter and freight railways. They run along both the east and west banks as well as across the river on at-grade and elevated bridges. The LA River Path will need to be designed within the limitations of the existing rail ROW. Once opened, the path will not impact rail operations and will provide secure fencing and safety measures when it is near railways.

Utility corridors run along and across the Los Angeles River, providing power and services to many residential and industrial communities. The types of utilities in the area include electric, gas, telecommunications, cable, water, sewer and storm drain, and oil.

## HAZARDOUS MATERIALS AND GEOTECH

Hazardous materials from current and historical land uses are present throughout the assessment area.

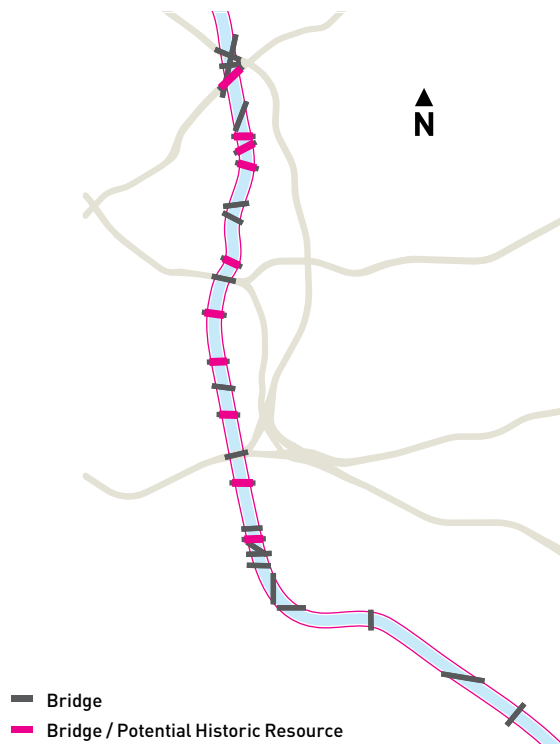
The presence of hazardous materials could impact the design and construction of the path. In addition, design features could be impacted by seismic shaking and its secondary effects. As the project moves forward, a comprehensive geologic and geotechnical investigation will be conducted to inform pathway design.

*Photos, next page:*

02. Bridges and rail lines along the LA River Path corridor
03. Utility towers along the LA River Path corridor
04. Trapezoid channel
05. Box Channel



Figure 4. Bridges and Historic Resources



### BRIDGES AND HISTORIC RESOURCES

There are thirty bridges that cross the Los Angeles River within the project corridor including many historic Beaux Arts style bridges built between the 1910s-1940s. Bridges pose challenges for the LA River Path design as the alignment will have to traverse over, under, or through the existing bridge structures.

### PROPERTY OWNERSHIP

The land along the corridor includes publicly and privately held property, both within the river channel and along the top-of-bank. The channel itself is owned in large part by the City of Los Angeles north of Washington Boulevard and by the Los Angeles County Flood Control District (LACFCD) south of S. Downey Road.

The USACE and LACFCD hold flood control easements throughout the LA River Path project corridor. The easements extend beyond the channel along the top-of-bank.



# PATH ANALYTICS

## Overview

The design of the LA River Path will respond to the needs of people who will use the path. One of the comments consistently heard through the community engagement process was the existing paths along the Los Angeles River feel unsafe because they are too narrow for people walking and bicycling to share comfortably. The future path will be a world-class facility that provides a safe and comfortable user experience.

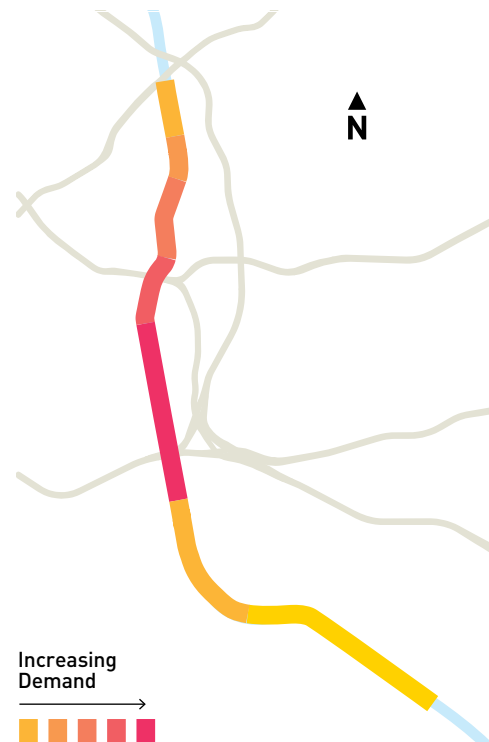
## Demand

The project team conducted a demand analysis in order to understand how many people will use the LA River Path.

It is anticipated that in 2035 the LA River Path within the project corridor will serve up to 5,900 daily walking and bicycling trips. The busiest areas of the path are expected to be through the downtown Los Angeles corridor of Boyle Heights and the Arts District, followed by the northern section, near Chinatown and Lincoln Heights. Activity decreases as the path moves south through Vernon.

The projected demand of the LA River Path, as well as how people are using the path, will impact the user experience. To provide a high quality experience that is safe, efficient, and comfortable for future path users, the project

Figure 5. Demand Diagram



team performed a Level of Service (LOS) and a preliminary Level of Comfort (LOC) analysis. A final LOC analysis will be conducted during the environmental and clearance phase of the project. The LOS + LOC analyses can be used to help inform path width and configuration.

Based on results of the LOS analysis, preliminary considerations for path widths range from 14'-20' and may be shared or separated use along the corridor. Widths and facility configurations should respond to projected pathway demand. Additional information on path analytics can be found in Chapter 4.

# PATH DESIGN

## Design Guidelines, Path Types, and Structures

Throughout the corridor, the path design will change to respond to the constraints and needs of various locations. This project will draw on existing national, international, state, and local design guidance, standards, and best practices to create solutions for the complex environment of the Los Angeles River channel. Chapter 6 describes the design guidelines and structural options under consideration.

### Character of Place

The path may include design elements that improve safety and security for path users, enhance the attractiveness, comfort, and enjoyment of the path as a transportation and recreational corridor, and contribute to the path as a destination in and of itself. Path elements are important along the path as well as at access points, and may include features such as public art, lighting, wayfinding, landscaping, and site furnishings, among others. Chapter 7 describes these elements in more detail.

## Access and Community Connection Opportunities

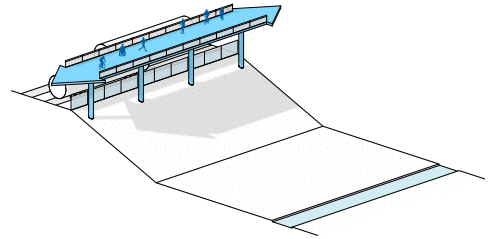
Access points and connections to other transportation options, such as on-street bicycle and pedestrian facilities and public transit, will ensure the LA River Path is a functional and enjoyable part of the greater Los Angeles transportation network. While the size and features of access point areas may vary based on community needs, path user demand, available space, and the surrounding context, these spaces will allow for placemaking opportunities along the path. More information on access point opportunities and community connections can be found in Chapter 8.

### Path Types

Due to the constrained nature of the corridor, there are limited places where the path can go. The project team considered four general categories of path types, with structural variations within each category. See Chapter 6 for additional detail on path types.



Figure 6. Elevated

**ELEVATED**

An elevated path type has a path supported by piers and is valuable for ramping and crossing over roadways, rail, and other at-grade obstacles. The path type can be at the top-of-bank or in the channel.

**TOP-OF-BANK / CANTILEVERED**

A top-of-bank path type is located at the top of the channel wall. Where enough space is available, it could take the form of an at-grade path. Where space is limited along the top-of-bank, a cantilevered path may be used. A cantilevered typology uses a structure that hangs over the top of the channel wall but is supported at the top-of-bank.

Figure 7. Top-of-bank / Cantilevered

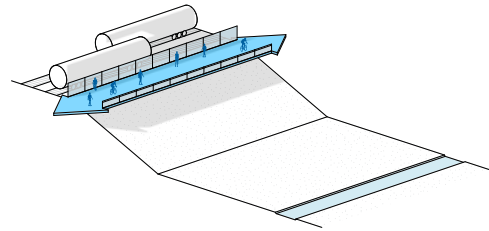
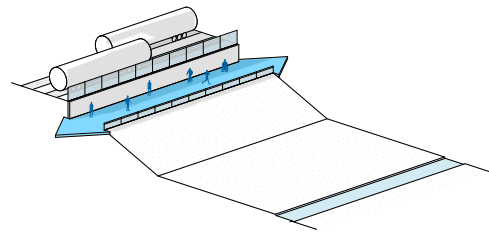


Figure 8. Incised

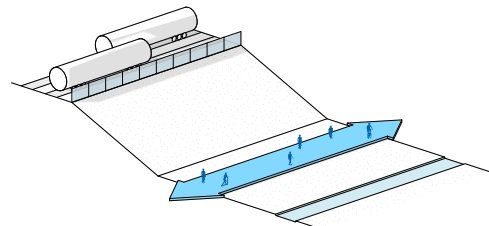
**INCISED**

An incised path type cuts the path into the channel embankment. This path type is feasible even where there is no space along the top-of-bank and for is applicable both trapezoidal and rectangular channel configurations.

**BOTTOM-OF-CHANNEL**

A bottom-of-channel path type locates the path on the flat bottom of the channel. It is not impacted by adjacent top-of-bank conditions. However, it is the typology most difficult to access and most at risk of seasonal flooding.

Figure 9. Bottom-of-Channel



# COMMUNITY ENGAGEMENT

## Engagement Activities

Community input played an important role throughout the conceptual design phase of the LA River Path project, helping to inform the project mission statement, project goals, potential path types, access point opportunities, and path alignment analysis process. In an effort to better understand the communities that live in and near the assessment area, their priorities, and how the project could best meet their needs, the project team held a number of different outreach events and administered two online survey tools during the conceptual design phase.

Thirty-six public engagement events were held during this phase. Events included pop-up events, stakeholder roundtables, and community open house meetings. In addition, the project team held meetings

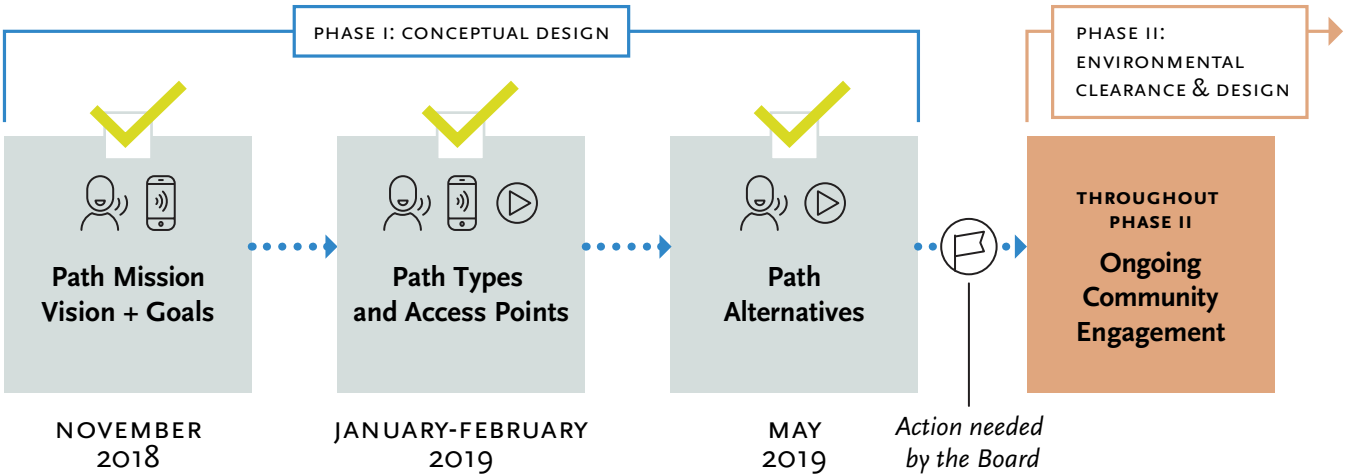
Outreach Activities Between August 2018 and July 2019:

- 9** Community Open Houses with **300+** Attendees
- 4** Stakeholder Round Tables
- 6** PDT Meetings
- 23** Pop-up Events

We collected **4,600+** In-person comments and **3,800+** Survey responses

Figure 10. Outreach Schedule by Topic

 In-person engagement  
  Online engagement  
  Video



with neighborhood councils, residential block groups, community-based organizations, business owners, and other stakeholders. Additional innovative engagement tools included in-person and online surveys, online videos, and targeted youth outreach.

The project team sought to capture community feedback on topics such as project vision and goals, path types, and preferred access points to guide the evaluation of different path alignments, and ultimately identify three top-performing path alternatives. Overall, over 4,600 in-person comments and 3,800 survey responses were received during the conceptual design phase.

## Innovative Engagement Strategies

### WEBTOOLS

The LA River Path project team employed two webtools to offer community members an additional method with which to share their priorities and provide feedback. To better understand community members' demographics, current use of the existing paths north and south of the project corridor, and vision and goals for the future path, an online survey was run between September and November 2018. In-person surveys were also conducted at locations along the existing paths and at nearby Metro Gold Line stations. The project team recorded 1,915 responses during this period of outreach.

A second webtool focused on access points and path types ran from February to March

*Photos, next page:*

06. Still from Metro's LA River Path Project video, February 6, 2019
07. Youth outreach board
08. Still from Metro's LA River Path Project video, February 6, 2019
09. Still from Metro's LA River Path Project video, February 6, 2019
10. Screenshot of LA River Path survey homepage
11. Still from Metro's LA River Path Project video, February 6, 2019
12. Screenshot of LA River Path survey webtool

2019. This interactive survey tool captured community members' priorities for path types and access points, and allowed the project team to capture feedback from a wider audience. The LA River Path project received 1,912 responses through this online webtool.

### YOUTH ENGAGEMENT

In an effort to reach the next generation of path users, the LA River Path project team participated in the Los Angeles River Youth Summit in November 2018. High school students from throughout the communities adjacent to the Los Angeles River participated in the summit and provided feedback on their goals and vision for the future path.

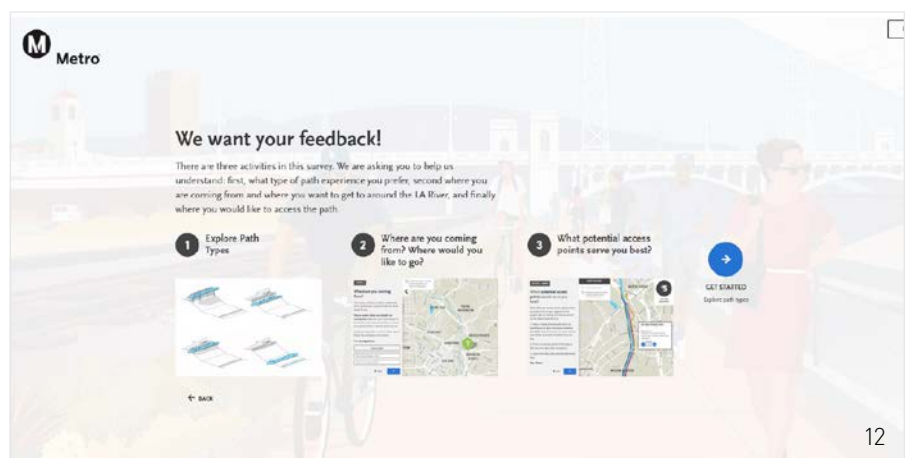
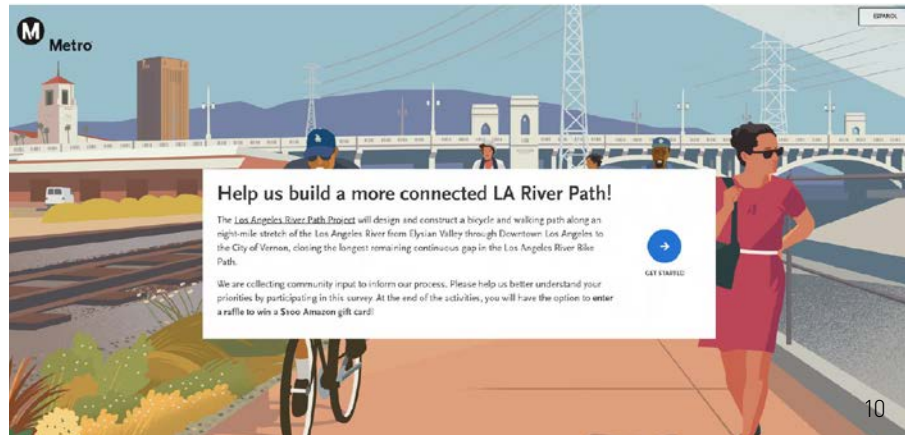
### ONLINE VIDEOS

Metro produced two informational videos about the LA River Path project. The first video provided an overview of the project and showcased voices from community members who live in the study area.

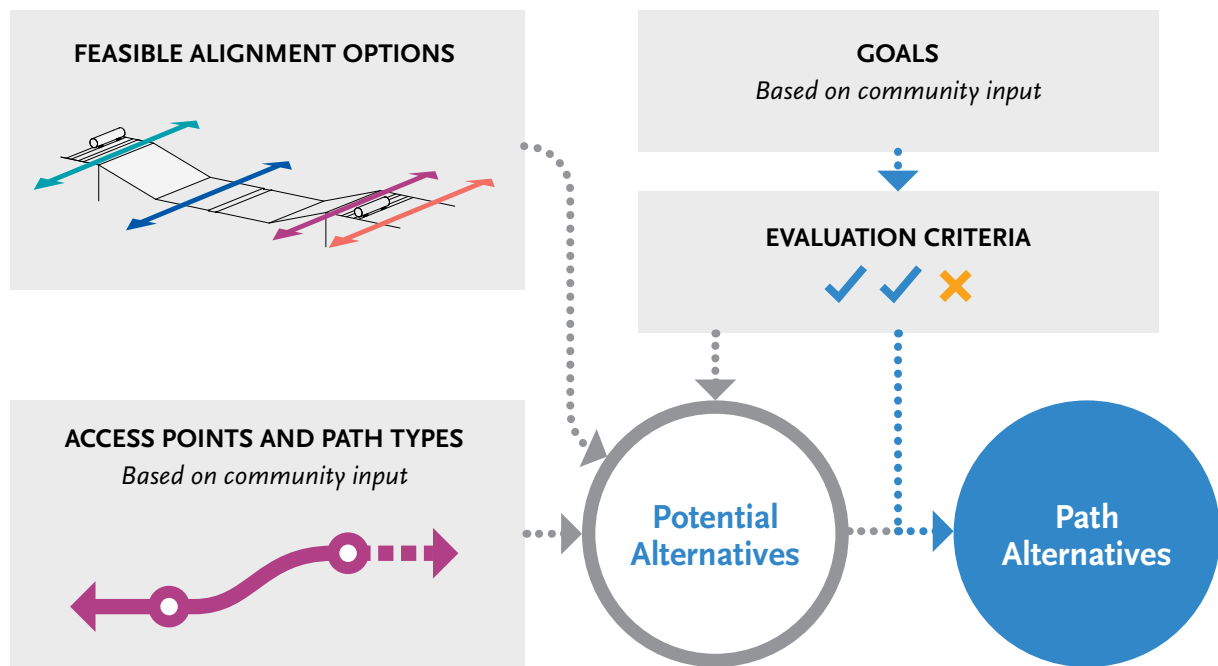
The second video was produced for community members who were unable to attend the community meetings, allowing them to keep up to date on the project's goals, priorities, and recommended path alternatives.

The videos were promoted through Facebook and Metro's project website, as well as through email to those on Metro's project distribution list.





# ALTERNATIVE EVALUATION PROCESS



## Approach

There are dozens of unique combinations of access points, river crossings, and path types that could be considered for the LA River Path.

An alignment evaluation process was used to create, filter, and revise alignment options and to inform the selection of three path alternatives to be studied during the environmental clearance and design phase of the project.

The project team used the information developed during the existing conditions assessments to determine a range of feasible alignment options, including potential path locations, path types, and access points.

To ensure the project would best address community needs and desires, the project team presented the feasible access points

and path types to the community in January and February 2019. The feedback received was used to analyze how well each option responded to community preferences.

The potential alternatives were also screened against evaluation criteria related to the six project goals. The three path alternatives that responded best to both community feedback on access points and path types and to evaluation criteria were ultimately presented to the community for their feedback in May 2019. Based on the positive response received, these three alternatives were selected to move forward to environmental review.

The alternative evaluation process is described in detail in Chapter 9.

## Feasible Alignment Options

A series of steps was undertaken as part of the analysis process. The objective of the first step was to develop preliminary yet feasible alignment options. In subsequent steps, these feasible alignment options were refined and screened against the evaluation criteria to identify five potential alternatives and ultimately three path alternatives.

The project team began by studying the corridor and brainstorming a wide range of possible ways for the path to close the existing corridor gap. The team identified functional conceptual options for the horizontal configuration, path types, and access points for the project. The intent of this step was to thoroughly explore the many different ways a path could weave through the corridor.

All feasible alignment options were required to fulfill the project mission statement, as identified in Chapter 1. To ensure this, the project team screened the wide range of design variations against a set of fatal flaw criteria, baseline requirements without which the path cannot be successfully designed or constructed. The purpose of these criteria were to remove design options from consideration if it was apparent from a technical perspective that the options would not fulfill the mission statement of the project. There were five fatal flaw criteria used for the analysis:

### **ACCESSIBLE, CONSISTENT, AND SAFE:**

The path is accessible, consistent, and safe for path users of all ages and abilities.

### **FLOOD PROTECTION:**

The path must not impede the existing hydrological function of the Los Angeles River corridor.

### **HISTORIC RESOURCE IMPACTS:**

The path avoids significant impacts to historic resources.

### **PERMITTING AND CONSTRUCTABILITY:**

The path can be permitted and constructed without major delay or complexity.

### **COST:**

The path can be constructed on budget based on preliminary cost estimate ranges.

## ACCESS POINTS AND PATH TYPES

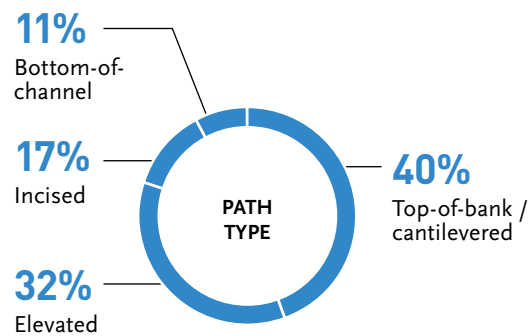
### *Based on Community Input*

Community preferences on access points and path types also informed the development of the potential alternatives.

As part of the development of feasible alternative options, the project team determined a range of feasible access points and path types. These access points and path types were presented to the community through open house events, an online video, and an interactive online survey tool. The feedback received was later used to analyze how well each potential alternative responded to community preferences.

Community members preferred access points that provide maximum connectivity to job centers, parks, and transit. Top ranked access points included Los Angeles State Historic Park/Main Street (a connection to parks), and Union Station and Washington Boulevard (connections to transit and jobs), all of which are included in the three top-performing alternatives for the LA River Path. Community members also prioritized access points that connect neighborhoods to the east and west of the river, such as 1st Street and 7th Street.

Figure 11. Community members were asked to vote for their preferred path types.



Because connecting neighborhoods was a priority for community members, all-west alignments and mostly-east alignments with minimal crossings were considered to be low performing characteristics.

When asked about path type preferences, community members overwhelmingly supported the top-of-bank/cantilevered (40%) and elevated (32%) path types because of their potential to stay open year round. Because the bottom-of-channel path type has a higher likelihood of closing due to flooding on the path, it was considered to be a low performing characteristic.

Additional feedback on path types and access points can be found in Chapter 9.





13

Which potential access points would serve you best?  
 ¿Qué puntos de acceso potenciales le servirían mejor?

**NORTH SEGMENT**  
**SEGMENTO NORTE**

- EAST SIDE** Possible path alignment and access locations based on existing conditions
- EAST BANK** Posibles alineaciones del camino y puntos de acceso basados en condiciones existentes
- WEST BANK**
- IN CHANNEL**



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EX-21  
 LA RIVER PATH · CONCEPTUAL DESIGN REPORT



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17

## GOALS

### ***Based on Community Input***

To understand the benefits, challenges, and relative strengths of the potential alternatives, the project team developed a process to measure each alternative against each of the six project goals: Safety, Access, Efficient and Sustainable Mobility, Equity, User Experience, and Health.

## EVALUATION CRITERIA

Evaluation criteria were developed with input from the community and used to help assess how well the alternatives fulfill the project goals.

For each criterion, performance metrics specifically indicate how the evaluation was performed. Most of the performance metrics are quantitative, and were assessed using a data-driven approach. Some performance metrics are qualitative, assessed on the understanding of the site context and path design practices.







For example, the performance metric to measure the ‘access to points of interest’ criterion evaluated the alternatives’ access points’ proximity to regionally and locally significant destinations such as commercial areas, schools, and parks.

The project goals and evaluation criteria are summarized in Table 1.

*Photos, opposite:*

13. Community open house in Cypress Park.
14. Access point outreach board.
15. Community open house at Sci-Arc.
16. Community open house in Cypress Park.
17. Community open house at Sci-Arc.

Table 1. Summary Goals

GOAL	CRITERIA	RELATED TO ACCESS POINTS	RELATED TO LINEAR ALIGNMENT	QUANTITATIVE APPROACH
 <b>Safety</b>	Traffic Safety	●	●	●
	Recovery and Rescue	●		●
 <b>Access</b>	Access to Employment	●		●
	Access to Points of Interest	●		●
	Access to Services	●		●
	Aligns with Planned Projects	●	●	
 <b>Efficient and Sustainable Mobility</b>	Reliability		●	●
	Safe Network Connections	●		●
	Transit Connections	●		●
	Travel Time		●	●
 <b>Equity</b>	Serves Disadvantaged Communities	●		●
	Access to Desired Destinations	●		●
	Serves Park-Deficient Areas	●		●
 <b>User Experience</b>	Perceived Safety	●	●	
	Level of Comfort		●	●
	Sound and Smell	●	●	
	Visual Experience		●	
 <b>Health</b>	Physical Activity	●		●
	Community Gathering Places	●		●

## Potential Alternatives

Using the evaluation criteria described in pages EX-22–EX-23, a series of preliminary screenings were conducted to help identify five potential alternatives that responded best to the project goals. The five potential alternatives were also scored on how well they responded to community preferences on access points and path types. The five potential alternatives can be seen in Figure 12.

The top five potential alternatives have a number of key similarities. They have similar lengths (7.93 to 8.12 miles), number of crossings (5 to 7), and access points (10 to 12). All alternatives connect to key access points such as Los Angeles State Historic Park/Main Street, Mission Road/Cesar Chavez Avenue, Union Station, and Washington Boulevard. These key access points performed well with the goals, responded to the public input, and had no suitable alternatives.

The five screened alternatives feature a number of subtle but key differences. Each performs well with the goals, but in different ways and to different degrees. Each alternative has a unique combination of path types, crossings, and access points.

Crossings occur in different locations in order to provide access to a unique combination of access points. Variation in access points occur in locations where several suitable alternatives exist, such as between 1st Street West and 1st Street East.

Each potential alternative also features future opportunities for path alignments and access points. Future opportunities go beyond the current budget of the project and provide design alternatives that could be added over time. Informed by community input, they include providing additional access points, a channel bottom path, and a parallel east side path loop in the northern reach of the project corridor.

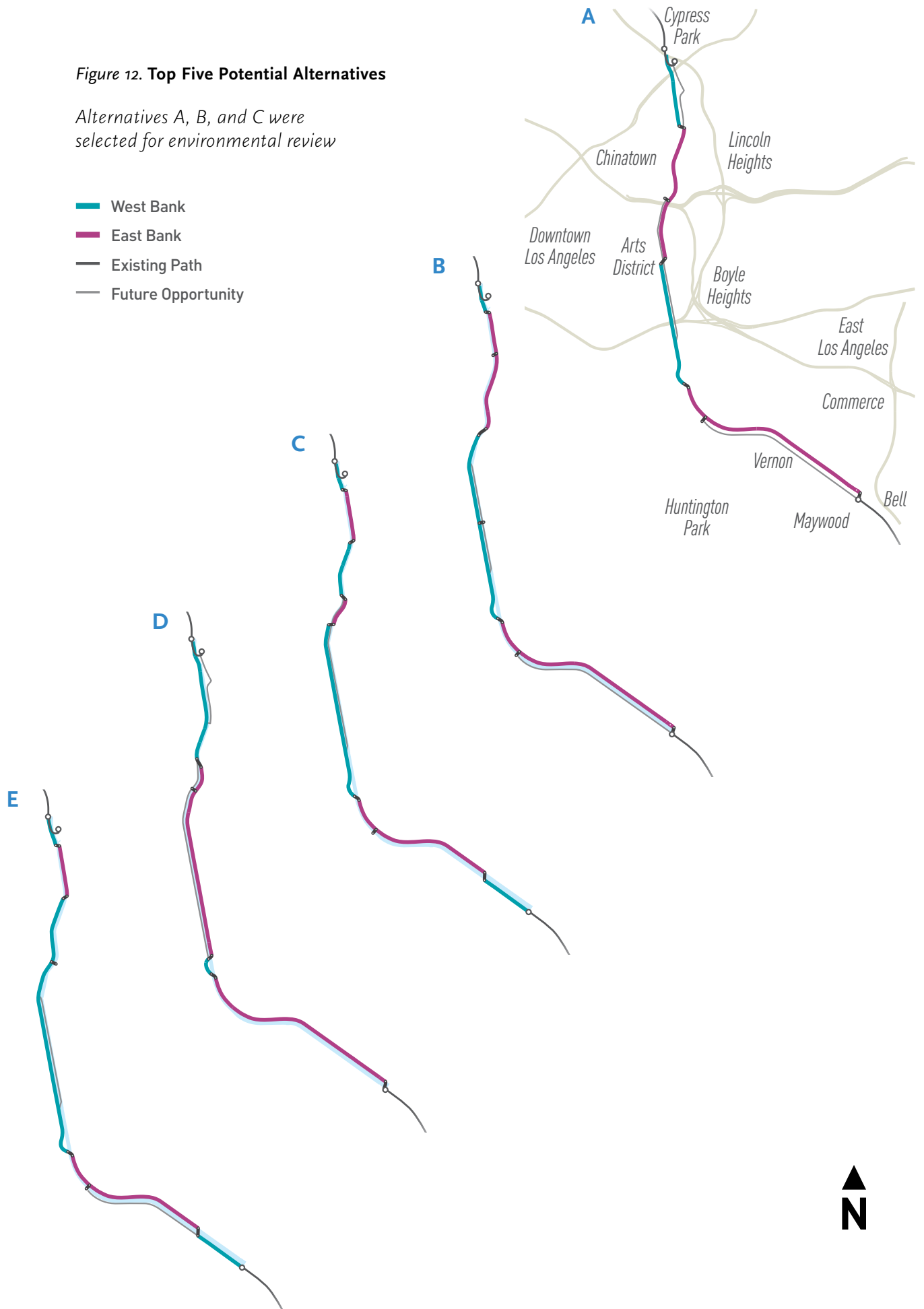
Of the top five screened alternatives, three alternatives were selected for environmental review. In May 2019, the project team presented these three top-performing path alternatives at a PDT meeting, a stakeholder roundtable, and three community open house meetings. Overall, PDT members and community members at all four events were supportive of the alternatives. Summaries of the evaluation results and community feedback on the path alternatives can be found in Chapters 9 and 10.



Figure 12. Top Five Potential Alternatives

Alternatives A, B, and C were selected for environmental review

- West Bank
- East Bank
- Existing Path
- Future Opportunity



# PATH ALTERNATIVES

## Community Benefits

**933,000+** residents served   
access to **629,000+** jobs 

*Based on a three mile radius of proposed access points.  
These are representative numbers for all three path alternatives.*

## Overview

Alternatives A, B, and C performed highest because they responded best to the project goals and the public input. The path alternatives reinforce the project goals, and within three miles of proposed access points, will serve 933,574 residents and provide access to 629,215 jobs.

## Alternatives Similarities

Alternatives A, B, and C feature a number of design similarities. First, they all start and end on the west bank to connect to the existing paths. Second, the alternatives use a combination of three path types (elevated, top-of-bank/cantilevered, and incised) and cross the river to utilize both sides of the river bank. They also feature the opportunity for a future bottom-of-channel loop between Union Station and Olympic Boulevard and in Vernon. In one highly constrained area, north of Redondo Junction, all alternatives utilize the west bank because the east bank is not a constructible option. Finally, Alternatives A, B, and C provide access to destinations that were rated highly by the community which include:

- **Los Angeles State Historic Park/Main Street Access:** Provides access to regional parks and serves as the gateway to Chinatown.
- **Albion Park/Main Street Access:** Provides access to a local recreation center and serves as the gateway to Lincoln Heights.
- **Mission Road/Cesar Chavez Avenue Access:** Serves major employment connections, both Lincoln Heights and

Boyle Heights, and has potential for a community gathering space.

- **Union Station Access:** Provides the most access to employment and transit connections of any access point.
- **Washington Boulevard Access:** Breaks up a long stretch of the path without access and serves connections to the Blue Line.
- **Bandini-Soto Triangle Access:** Connects to a key commercial hub and serves major employers in Vernon.
- **Downey Road East Access:** Breaks up a long stretch of the path without access and serves major employers in Vernon.

## Unique Characteristics

The three alternatives vary in their combination of path types and access points. The path types seen in the alternatives respond to site conditions in different ways. For example, Main Street is an at-grade bridge. Two alternatives (B and C) cross over Main Street while one alternative (A) passes under Main Street. In addition, the way in which alternatives connect to key destinations results in different user experiences. An example is connecting to 1st Street. Two alternatives connect to the 1st Street on the east bank (A and C) and one alternative (B) connects on the west bank. Key features, cost estimates, and maps for the three alternatives are found on the following pages.

# ALTERNATIVE A

## Key Features

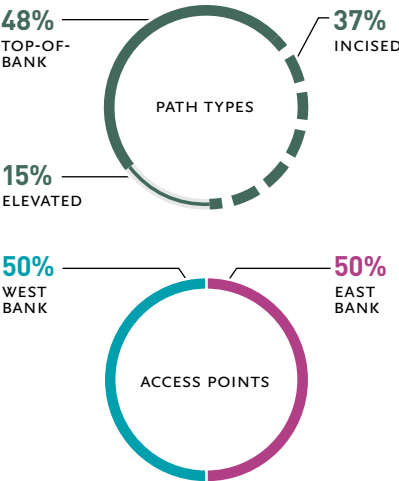
Alternative A has the most consistent path type of the three alternatives, with the fewest river crossings and fewest transitions between path types. Key features include:

- **Future Loop:** Future opportunity to expand access with a northern loop between Figueroa Street and Albion Park.
- **1st Street East:** Path provides direct access to Mission Road and 1st Street near Mendez High School.
- **Downtown Crossing:** Path crosses the river near 4th Street, providing future access opportunities on both sides of the river.
- **7th Street Access:** Top-of-bank path between 4th Street and Olympic Boulevard enables Arts District access at 7th Street as opposed to 6th Street Tunnel.
- **Future Bottom-of-Channel Path:** Future opportunities between Union Station and Olympic Boulevard and between Bandini-Soto and Atlantic Boulevard.

## RESPONSE TO PUBLIC INPUT

- Alternative A is 48% top-of-bank path, the most desired path type.
- 7th Street was the most desired access point between 4th Street and Olympic Boulevard.
- Future access opportunities at 4th Street bridge, Arroyo Seco, and 6th Street Tunnel, all top rated access points.

## Path Statistics



**7.93**  
MILES

**6**  
CROSSINGS

**10**  
ACCESS POINTS  
5 EAST BANK  
5 WEST BANK

## Transit Access

Which Metro Stations are served?

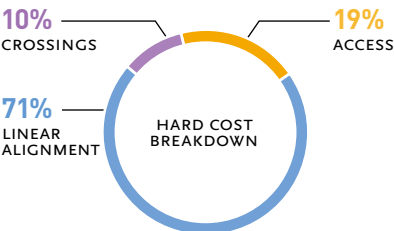
- **Union Station** ●●●●●
- **Chinatown** ●
- **Pico / Aliso** ●
- **Washington Bl** ●

## Cost Estimate

What is the estimated cost for this alignment and how is it distributed?

<b>Hard costs</b>	<b>\$216M - \$305M</b>
<b>Soft costs</b>	<b>\$83M - \$98M</b>
<b>Project Contingency</b>	<b>\$30M - \$40M</b>
<b>Total Cost</b>	<b>\$329M - \$443M</b>


\*based on 2019 values.




Map 3. Alternative A

 Metro Rail Line & Station

 Existing Path

 Existing Access Point


**LA River Path Alignments**

 Potential Access Point


 Elevated


 Top-of-Bank

 Incised

 Elevated Crossing

**Future Opportunity**

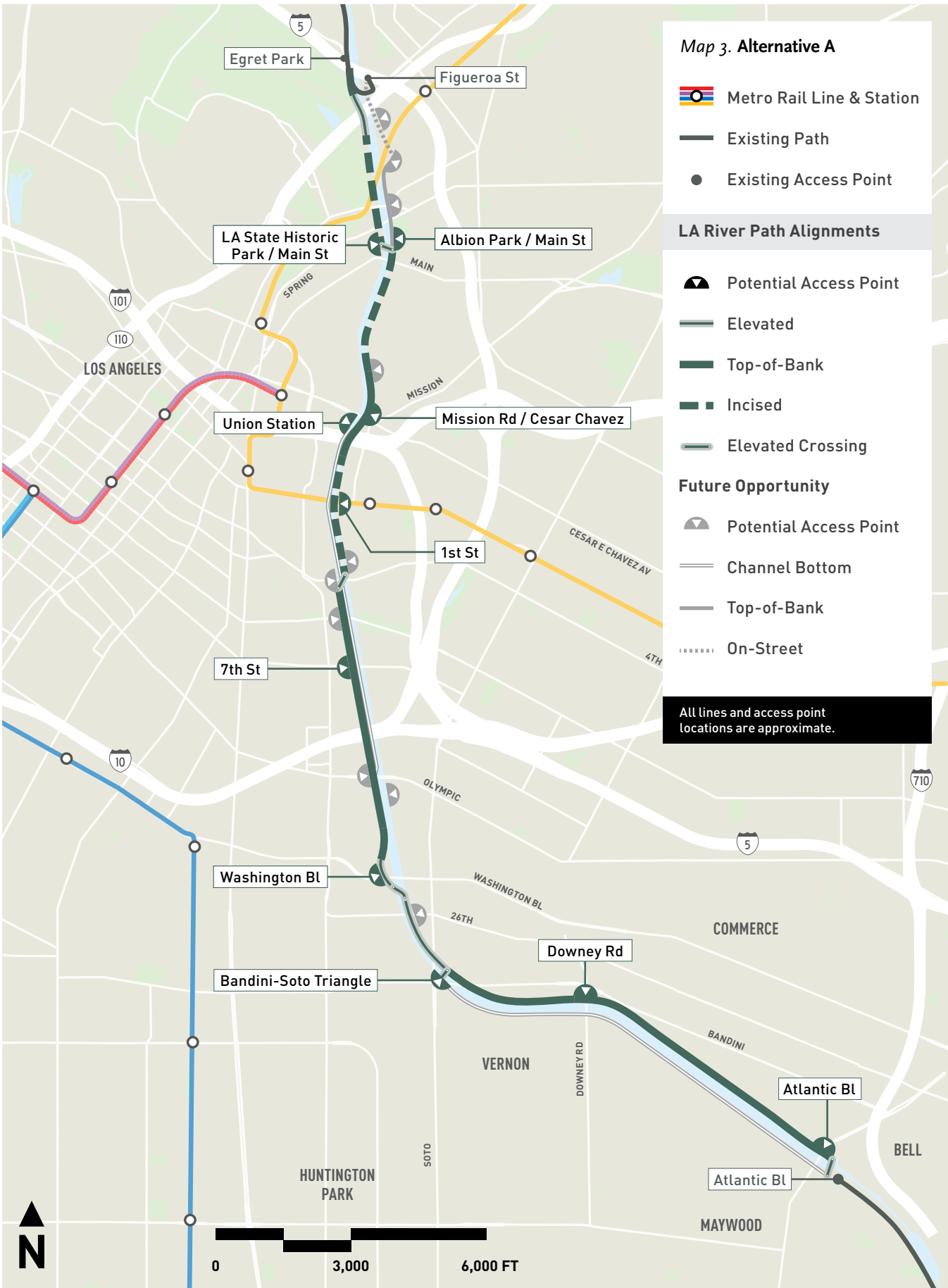
 Potential Access Point

 Channel Bottom

 Top-of-Bank

 On-Street

All lines and access point locations are approximate.





# ALTERNATIVE B

## Key Features

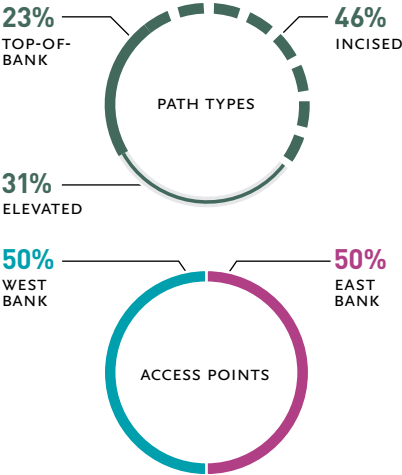
Alternative B has the most access points of the three alternatives, with the most connections to parks and to downtown Los Angeles. Key features include:

- **Parks Confluence:** Path provides access to Albion Park, Los Angeles State Historic Park, and Ed Reyes Greenway.
- **Union Station:** Path provides a direct connection between Cesar Chavez Avenue and Union Station.
- **1st Street West:** Path provides Little Tokyo access at 1st Street bridge.
- **7th Street/6th Street Park:** Path provides a crossing and access point at 7th Street / 6th Street Park.
- **Future Bottom-of-Channel Path:** Future opportunities between Union Station and Olympic Boulevard and between Bandini-Soto and Atlantic Boulevard.

## RESPONSE TO PUBLIC INPUT

- From the northern terminus through 1st Street Alternative B is elevated and top-of-bank, the top two desired path types.
- Mission Road/Cesar Chavez Avenue and Union Station were the top rated access points for people who want to commute.
- Future access opportunities at 4th Street bridge and Arroyo Seco, both top rated access points.

## Path Statistics



**8.02**  
MILES

**7**  
CROSSINGS

**12**  
ACCESS POINTS  
6 EAST BANK  
6 WEST BANK

## Transit Access

Which Metro Stations are served?

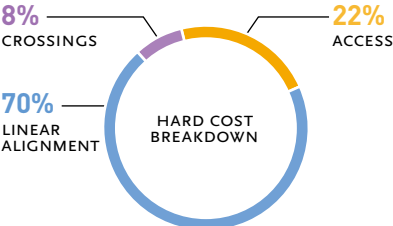
- **Union Station** ●●●●
- **Chinatown** ●
- **Lincoln / Cypress** ●
- **Little Tokyo / Arts District** ●
- **Washington Bl** ●

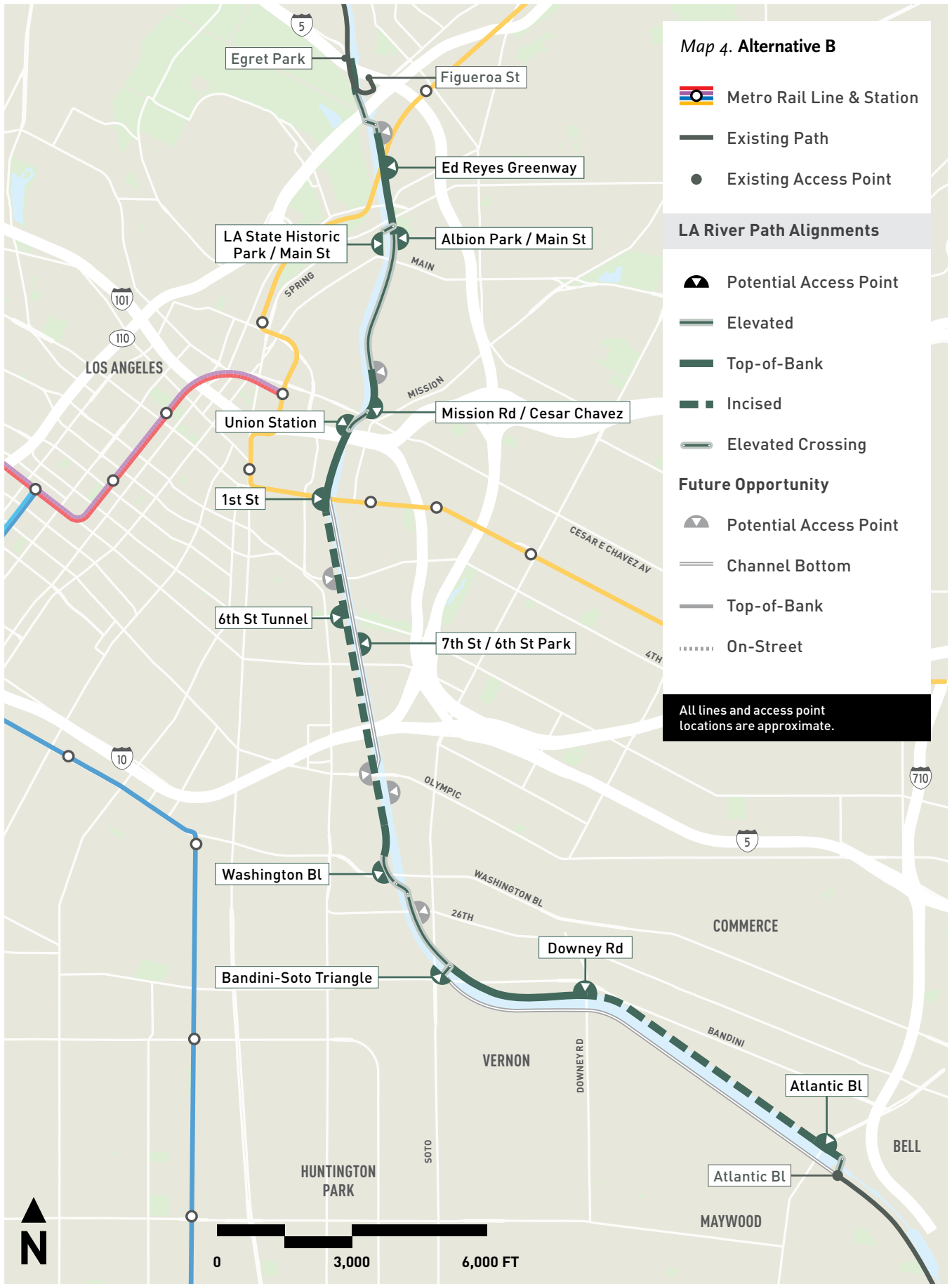
## Cost Estimate

What is the estimated cost for this alignment and how is it distributed?

<b>Hard costs</b>	<b>\$265M - \$366M</b>
<b>Soft costs</b>	<b>\$92M - \$109M</b>
<b>Project Contingency</b>	<b>\$36M - \$48M</b>
<b>Total Cost</b>	<b>\$393M - \$523M</b>

\*based on 2019 values.





# ALTERNATIVE C

## Key Features

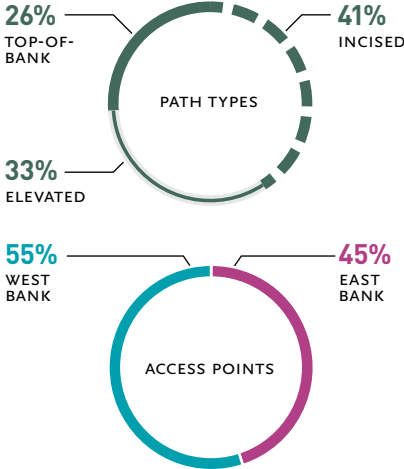
Alternative C has the most seamless and direct connections between access points and between the east and west side of the river. Key features include:

- **Lincoln Heights Connections:** Path passes through Lincoln Heights providing access to Ed Reyes Greenway, Broadway / Spring Street, and Albion Park.
- **Union Station Confluence:** Elevated path provides direct connections between 1st Street East, Union Station, and Mission Road / Cesar Chavez Avenue.
- **6th Street Tunnel:** Path provides Arts District access at the 6th Street Tunnel.
- **District Crossing:** Path crosses the river between Downey Road and Atlantic Boulevard to provide a future access opportunity at District Boulevard.
- **Future Bottom-of-Channel Path:** Future opportunities between Union Station and Olympic Boulevard and between Bandini-Soto and Atlantic Boulevard.

## RESPONSE TO PUBLIC INPUT

- Alternative C is 59% of combined top-of-bank and elevated path, the top two desired path types.
- 1st Street west was a top rated access point.
- Future access opportunities at Arroyo Seco and William Mead Homes, two top rated access points in the north.

## Path Statistics



8.12 MILES  
7 CROSSINGS  
11 ACCESS POINTS  
6 EAST BANK  
5 WEST BANK

## Transit Access

Which Metro Stations are served?

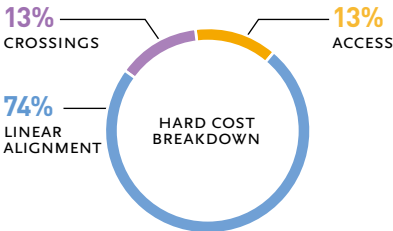
- Union Station ●●●●
- Chinatown ●
- Lincoln / Cypress ●
- Pico / Aliso ●
- Washington Bl ●

## Cost Estimate


What is the estimated cost for this alignment and how is it distributed?

Hard costs	\$218M - \$307M
Soft costs	\$84M - \$99M
Project Contingency	\$30M - \$40M
<b>Total Cost</b>	<b>\$332M - \$446M</b>

\*based on 2019 values.



Map 5. Alternative C

 Metro Rail Line & Station

 Existing Path

 Existing Access Point

**LA River Path Alignments**

 Potential Access Point

 Elevated


 Top-of-Bank

 Incised


 Elevated Crossing

**Future Opportunity**

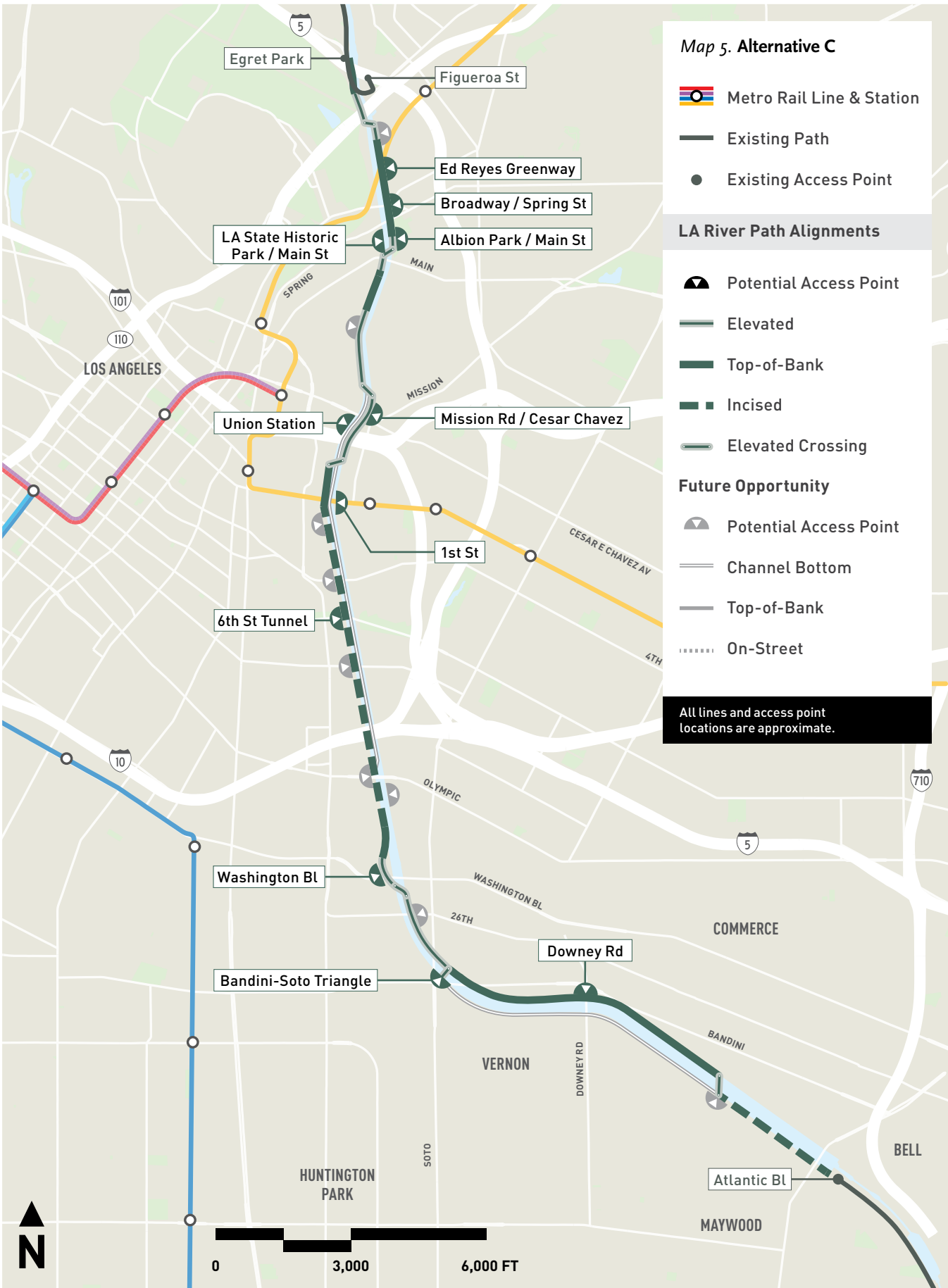
 Potential Access Point

 Channel Bottom

 Top-of-Bank

 On-Street

All lines and access point locations are approximate.





# NEXT STEPS

## Environmental Process and Conceptual Engineering

To construct the path, Metro is required to complete a state environmental review (CEQA), which will include evaluation of up to three path alternatives. Federal environmental review (NEPA) will also be required because of potential impacts to the Los Angeles River under the jurisdiction of the USACE, a federal agency.

The environmental review will include in-depth study of the three alternatives' potential impacts and benefits on a range of topics, including but not limited to socioeconomic, historic resources, and traffic.

The alternatives for environmental review will be studied and evaluated based on conceptual-level engineering and related technical and environmental information, along with public and stakeholder input.

This technical analysis of each alternative will focus on considering potential impacts, and will involve the public and stakeholders in the evaluation. The purpose of the final screening step is to provide sufficient information needed to identify a locally preferred alternative (LPA).

Following the Final Environmental Impact Report (FEIR), the project will seek a series of approvals from various federal, state, and local agencies as part of the permitting process.

The alternatives and options will continue to be modified and narrowed based on ongoing discussions with project partners, public input, and through the environmental process.

Design of the path including aesthetics and path amenities will continue into the next phase of the project and will be included in ongoing community engagement. Metro will work with stakeholders and community members to ensure artwork opportunities and artwork designs are integrated into the project. With a focus on creating a world-class user experience, design themes and elements will be incorporated during environmental review and further design.

*Photos, opposite:*

18. The Cycle Snake (Cykelslangen), Copenhagen, Denmark

19. Tongva Park, Santa Monica, CA

20. This Way, Linnaea Tillet and Karin Tehve, Artists, under the Brooklyn Bridge, New York, NY

21. Kalvebod Waves, Copenhagen Harbour, Denmark

22. Vistula Boulevards, Warsaw, Poland

23. University of Texas, El Paso, TX

24. "Under LA" by Refik Anadol + Peggy Weil, commissioned by Los Angeles Department of Current Affairs, Los Angeles, CA



