

Outcomes recommended by the Plan will improve the river for all users.



3

Community-Driven Outcomes

Using the process described in Chapter 2, the Working Group identified site-specific revitalization projects for 155 locations throughout the river corridor, focusing on public open space or public land for public use. In addition to the site-specific projects, the members of the Working Group realized a need for templates to facilitate distributed improvements throughout the corridor. The projects, templates, and policies are referred to as strategies within the document because they are ways that the goals and objectives can be implemented. This chapter highlights the projects, templates, and policies key to revitalization along the river.

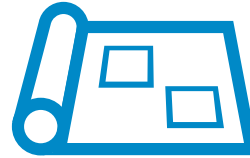


Community Driven Strategies

Throughout the Working Group process, members of the community were asked to describe how they would like to see their neighborhoods and cities improved. This document refers to the various projects, templates, and policies requested by members of the community and the working group as strategies.



Projects are specific opportunities for improvement based on feedback received during the planning process. For a complete list of projects, see pages 26-33 and Volume 2, Chapter 2.



Templates are blueprints for rapid, distributed improvements throughout the river corridor and surrounding communities—these fill the gaps between the identified projects. See page 72 and Volume 2, Chapter 3 for template details.



Policies provide example guidance for cities and decision makers to follow when the Plan is initiated. See Community Stabilization Toolkit for complete policy guidance.



These outcomes satisfy the guiding principles established by the Working Group (Chapter 2) and provide a menu of opportunities for cities, stakeholders, and advocates to revitalize the river. Chapter 4 will discuss how to take action and implement these outcomes.

The strategies outlined in this chapter were highlighted by the Working Group for their exemplary embodiment of the multi-benefit, community-driven planning process that is essential to the Plan. These represent only a small selection of

the numerous of opportunities identified by the community and Working Group, many of which have equal potential to advance multiple objectives in the Plan.

Volume 2, Chapter 2 provides a fact sheet for each project opportunity that details facts about the location and the range of possible benefits. These fact sheets will allow advocates to easily identify additional candidate projects as they seek to address further areas of need. See page 27 for example fact sheet.

Community Stabilization Policies & Programs

Revitalization investments could cause gentrification in high risk areas along the corridor. The Working Group determined that preventing displacement—both residential and commercial—was a key issue for the community. Displacement of people from their homes can cause people to move to more environmentally disadvantaged areas, which are farther from jobs, or can cause them to become homeless. The loss of locally-owned businesses can impact the cultural fabric of a neighborhood and new businesses may not be able to meet the needs of existing communities. The Working Group created a Community Stabilization Toolkit to highlight a few policies and programs which could help to support existing communities and allow them to benefit equitably from river revitalization efforts. These policies were developed based on the spirit of [LA River Equity Principles](#). Cities and advocates within the corridor can use this Toolkit to educate residents and policy makers regarding policies which may be able to help stabilize communities. The policies highlighted in the Toolkit are only a few of the programs and policies which may be beneficial and the ones highlighted may not be appropriate for all communities, however, the Working Group is committed to protecting corridor communities from the potential negative impacts of revitalization investment and included the Toolkit as a way to provide guidance and show support for these types of policies.



Community Benefits Agreements

Community benefits agreements are contractual agreements between developers and coalitions of community organizations designed to address a broad range of community needs such as living wage jobs and affordable housing. Community benefits agreements can ensure that public/private partnerships provide an economic return to the area and preventing displacement of low income residents. Community benefits agreements are based on the idea that economic development and public investment should result in measurable, permanent improvements to the lives of affected residents, particularly those in low-income neighborhoods. They can be negotiated for private and publicly funded projects.



Inclusionary Housing Policies

Inclusionary zoning is a policy used to allow for economic and residential growth while mitigating displacement caused by development. Inclusionary zoning requires or incentivizes developers of new housing constructed within a certain area to include a certain percentage for development as affordable housing. The structure of an inclusionary zoning policy varies and may be triggered by the size, height, location of a new development, or something like a density restriction. Many inclusionary zoning policies include incentives for developers such as fast-tracking permits or allowing for more units to be built than traditional zoning.



Locally Owned Business Support

Support for locally owned and operated businesses is crucial to preventing commercial displacement during revitalization of the Lower Los Angeles River—especially for commercial areas, which are particularly vulnerable due to historic disinvestment and locations relative to existing transportation and proposed revitalization projects. Similar support is also necessary for residents to start new locally-owned and operated businesses within the Lower Los Angeles River, which would benefit from revitalization efforts. Connecting local businesses with existing assistance resources could keep existing businesses healthy and allow them to benefit from investments within the corridor.

No Net Loss Housing Policies

No net loss of affordable housing ordinances maintain affordable housing availability in an at risk area by either requiring a developer who removes affordable housing to replace all or a percentage of those units either onsite or offsite or make an in-lieu-of payment into a housing trust fund to be used for housing preservation projects. No net loss regulations can also control how multi-unit rental properties can be converted to for-sale condominiums. These types of regulations can provide consistent method of maintaining stable level of affordable housing rather than requiring cities to make decisions case-by-case.

Rent Control Ordinances

One of the primary causes of residential displacement during gentrification is existing residents' inability to pay increasing rents. One way corridor municipalities could temper these impacts is through the adoption or update of existing rent control regulations. Rent control regulations typically limit the amount by which landlords may increase the amounts they charge for the use and occupancy of their property as a residence by tenants. Such regulations may also include controls to limit the frequency, regulate the timing of rent increases and limit the grounds on which a landlord may evict a tenant.



Workforce Development

The support of existing workforce training programs and the development of new programs focused on training residents for new jobs generated by revitalization efforts will help ensure that the benefits of economic development in the area benefit the existing community. Many of the revitalization projects recommended for the Lower Los Angeles River will require people with skills in civil engineering, landscape design and construction to install and implement. And the work does not stop there. Projects will also need to be properly operated and maintained. This maintenance could require specialized skills in landscaping, irrigation, urban forestry, and habitat restoration. New park assets will also need to be monitored to ensure user safety. Existing traditional workforce development programs could be augmented to include this type of training and new training programs could be developed specifically to support river-focused job training. Connections could be made between existing workforce training programs and employment in work



in complementary jobs associated with the project, i.e. food vending for events. Workforce training also can be integrated into community benefits agreements associated with revitalization projects in the LLAR.

Community Land Trusts

A community land trust is a nonprofit corporation that develops and stewards permanently affordable housing, community gardens, civic buildings, commercial spaces and other community assets on behalf of a community. According to the National Community Land Trust Network, these programs invest “public funding into a property in order to make home purchase affordable for a family of modest means. The organization supports the residents to attain and sustain homeownership. In return, the homeowner agrees to sell the home at resale-restricted and affordable price to another lower income homebuyer in the future.” There are more than 200 community land trusts across the country. Any housing the trust acquires, builds or rehabilitates remains permanently affordable for successive generations of owners or renters via the use of a ground lease arrangement with the owner of the improvements on the property. By retaining the right to the land, regardless of the type of legal ownership of the buildings, a community land trust will ensure the selling price is affordable, regardless of current market prices.



22 Bridge crossings identified for improvement

155 projects

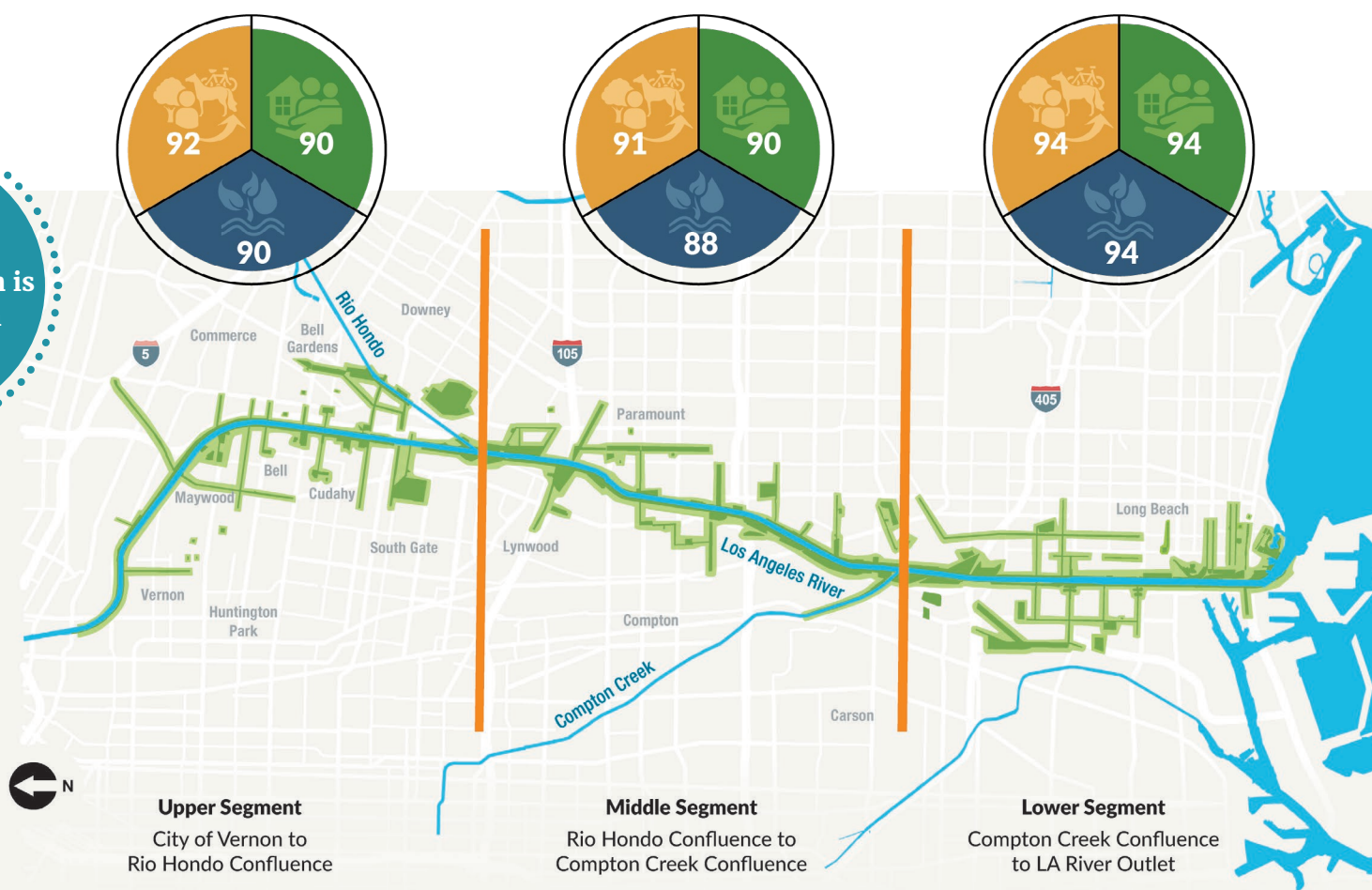
98% of the population is located within 1/2 mile of all projects

81 Miles of trail and streets identified for improvement

Projects Recommended by the Working Group

The planning process identified the need for specific projects to improve conditions along the river. These projects range from small-scale improvements to larger transformations. (Maps showing the locations for each can be found on pages 28–33.) A full list of the 155 recommended projects, including fact sheets for each, can be found in Volume 2, Chapter 2 and in this online map: <http://lowerlariver.org/the-plan/>.

Community-driven projects, templates, and policies balanced the Working Group's objectives throughout the three river segments



Fact Sheet Components (see Volume 2, Chapter 2)

Opportunity Area

Name and ID number

Driver

Origin of the identified area

Opportunity Description

What the opportunity entails

Scale

The site- and regional-scale location of the opportunity area

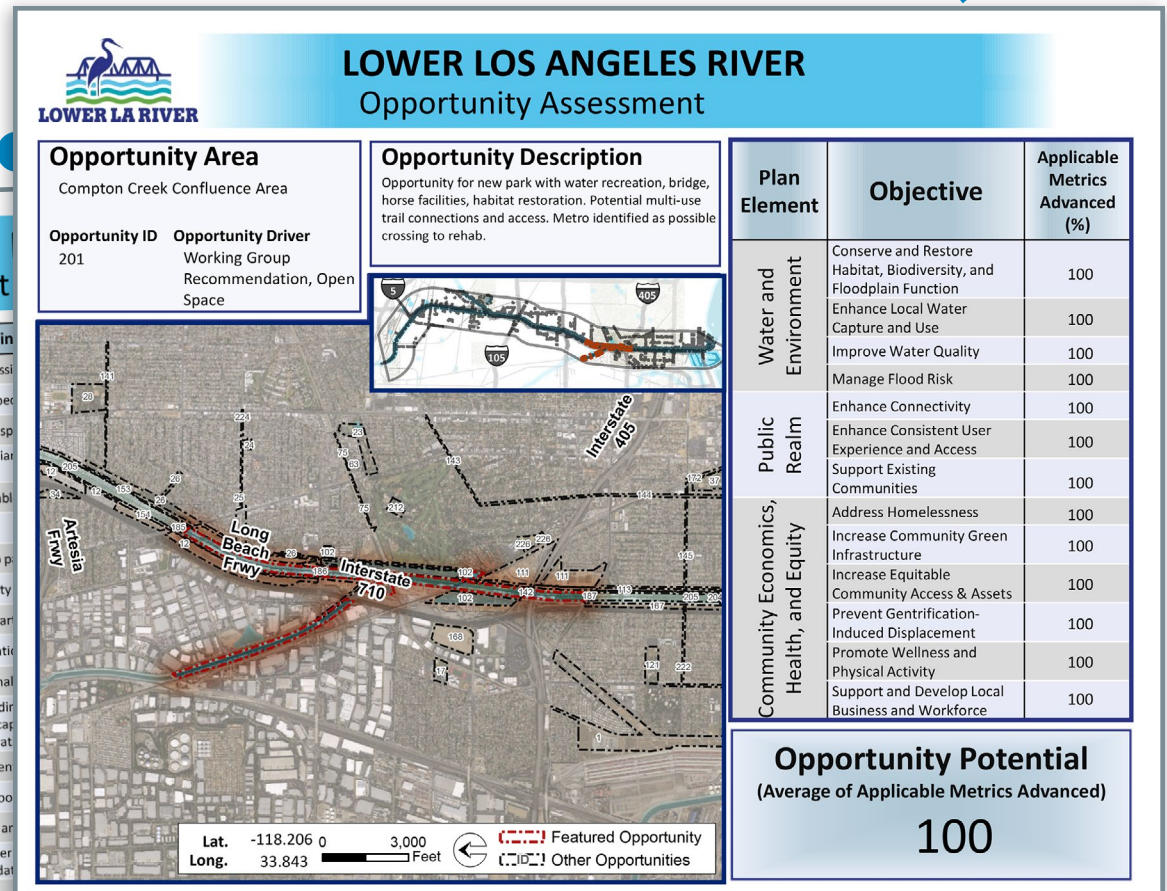
Objectives

Which are addressed by the recommended Building Blocks

Opportunity Potential

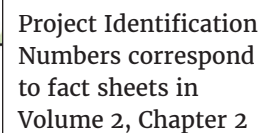
How multi-benefit a potential project can be

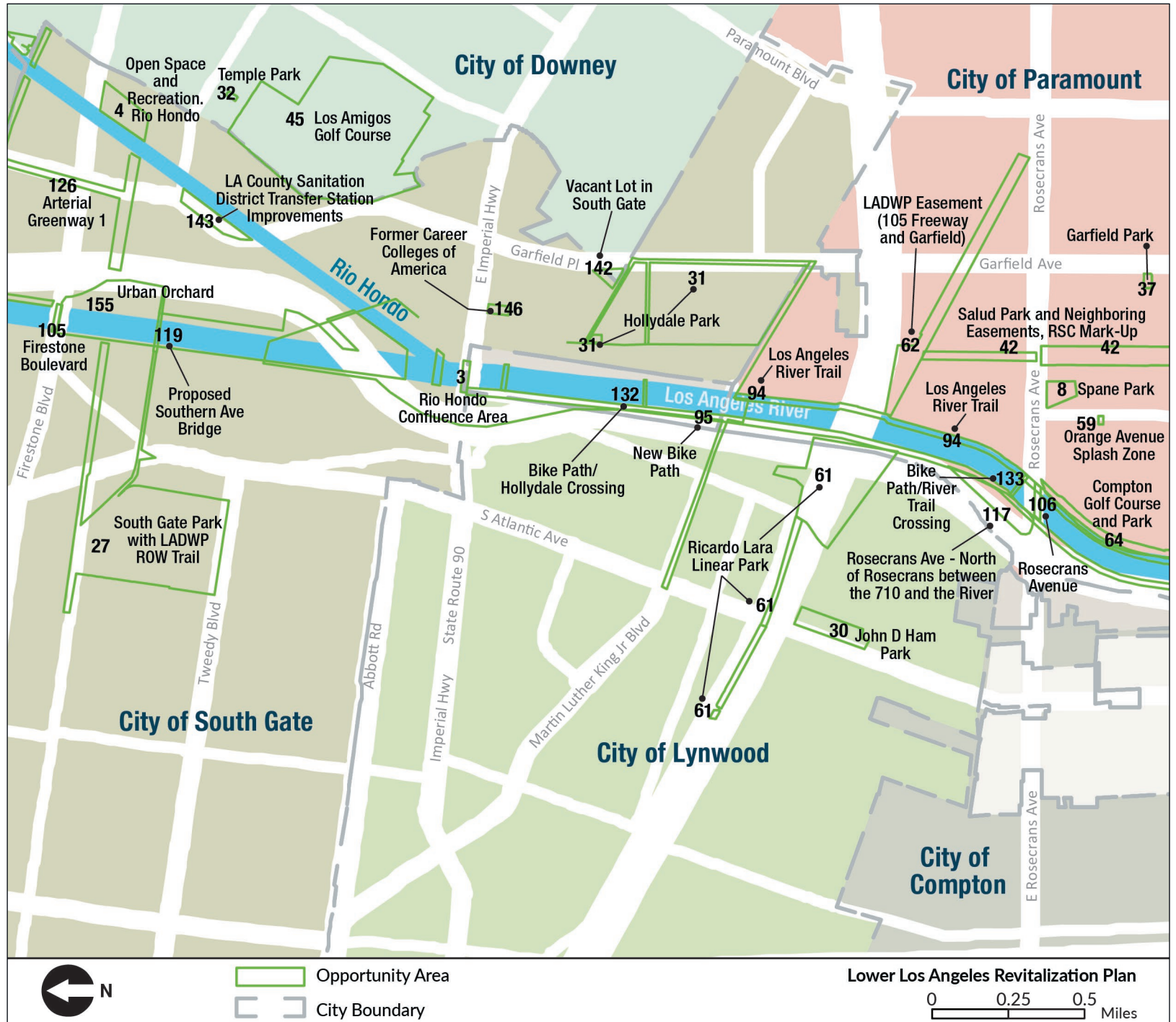
Opportunity Area		
Compton Creek Confluence Area		
Opportunity ID 201		
ID	Building Block	Applied
1	Active space	
2	Additional permanent homeless shelters	
3	Bioswales	
4	Boardwalks and overlooks	
5	Brownfields remediation	X
6	Climbing wall	
7	Commercial zone access	
9	Community garden	
10	Community gateway	
12	Continuous park space	X
13	Curb cuts/street eddy basins	
14	Destination stops	X
15	Diversion to sanitary sewer	X
16	Drinking fountains	
17	Dry wells	
18	Elevated paths	
20	Equestrian trails	
21	Bike hubs	
22	Floodplain expansion	X
23	Green infrastructure	
24	Habitat area	X
25	Habitat corridor	X
26	Historical, cultural, environmental education/assets/signage	X
27	Homeless space sharing	
28	Infiltration basins and trenches	
29	In-river access and safety	X
30	Leverage planned regional water recycling projects	
31	Leverage pump stations to convey stormwater	
32	Lighting	
36	Loop and spur trails	
37	Low income access	
38	Low water crossings	X
39	Low-flow channel modifications	X
40	Multi-use publicly-owned properties	
41	Onsite water recycling	X
42	Open space access	X
44	Overcrossings	
45	Oyster beds	
46	Passive space	
47	Pedestrian access	
48	Permeable pavement	
49	Plazas	
50	Pop-up parks	
52	Property access	
53	Public art	
54	Recreation	
55	Regional trails	
56	Regradiation/landscaping/restoration	
58	Residential	
59	Restrooms	
60	River access	
61	Rubber mulch	
62	Safe crossings	
63	Seating	X
64	Security	
65	Shallow groundwater banking	
67	Signage	X
68	Stream restoration	



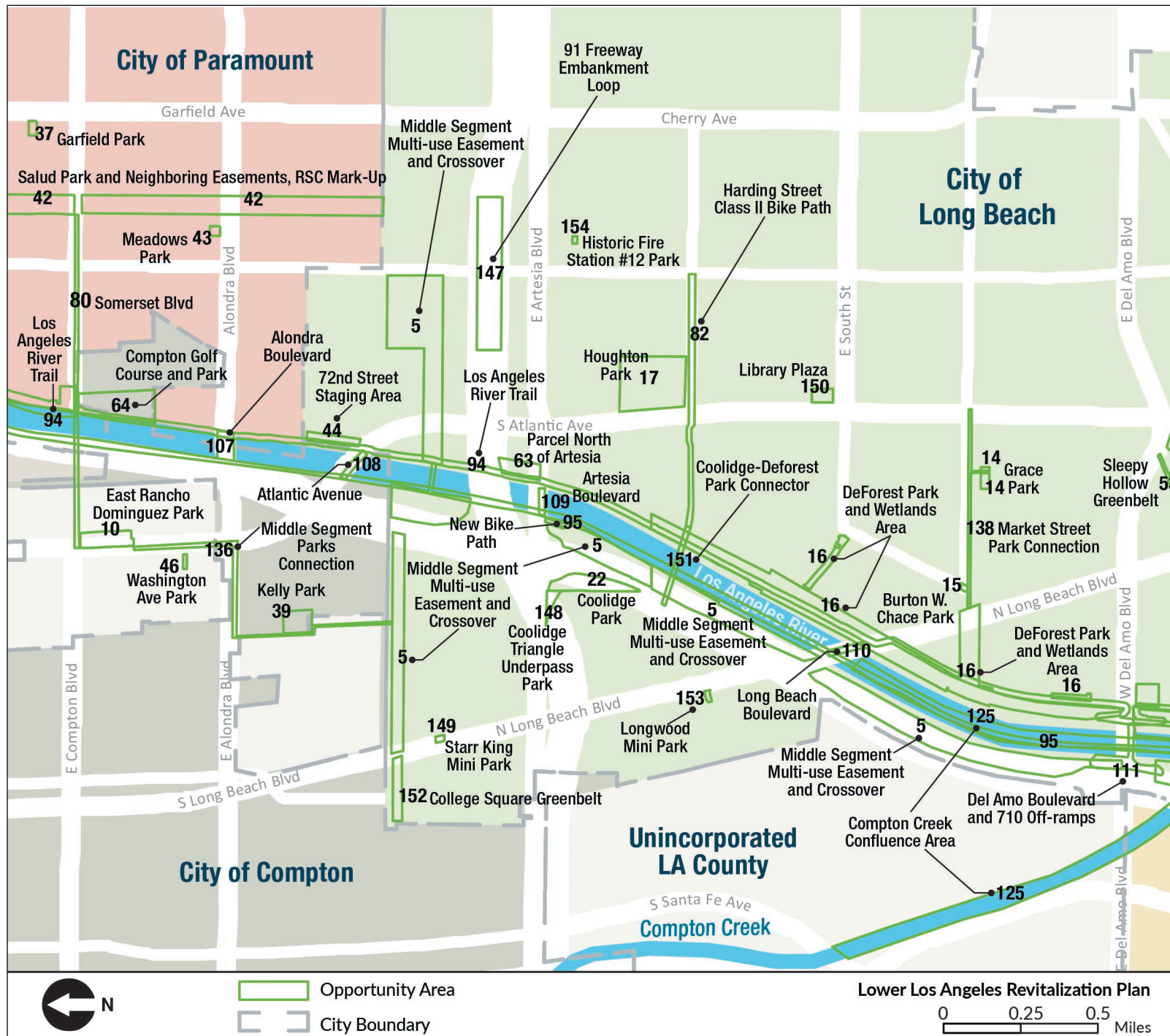
Building Blocks

Full list recommended by the Working Group





Project Identification Numbers correspond to fact sheets in Volume 2, Chapter 2



Project Identification Numbers correspond to fact sheets in Volume 2, Chapter 2

Highlighted Projects

Seven “signature” projects were identified by the Working Group as key opportunities to meet the goals and objectives of the Plan, and underwent more detailed analysis. Three signature projects are highlighted conceptually in the following pages. Details on all seven of the signature projects are in Volume 2, Chapter 3.



The Infrastructure Scale Meets the Neighborhood Scale

Residential neighborhoods adjoin much of the river. The juxtaposition of the huge concrete channel against the small single-family homes is stunning. The expansive river channel has one purpose: to convey massive amounts of water to the ocean and help prevent flooding. On the other hand, the homes have many purposes: they are homes to small and large families, they are a place of creativity that is apparent in the elaborate gardens, they are workshops for handiwork and much more.

This poses an intriguing question: how can the human scale of the neighborhood influence the transformation of the river into a *people place* and how can the infrastructural scale reach into the neighborhood?





CUDAHY RIVER ROAD



Cudahy River Road: Existing Conditions

The Cudahy River Road site runs between Clara Street to the north and the rail crossing at its southern end. This section of the river sits in the midst of primarily low-density residential neighborhoods, and is home to two elementary schools and several neighborhood parks of various sizes and levels of public accessibility. These include Cudahy Park, adjacent to Park Avenue Elementary School, and Cudahy River Park at Clara Street. Both parks have fencing facing the river, and Cudahy River Park is fully enclosed with a tall iron fence and locked gate.

In this area, the river is bounded by River Road to the west and the LADWP Transmission Line Corridor and the I-710 Freeway to the east. River Road is a narrow through-way edged by rear parking and side-yards of residential buildings to the west and a 10 to 12 foot high levee to the east. It is largely fenced on both sides and is seen to be a safety concern to local residents due to high vehicular speeds in the narrow corridor.

The LA River Bike Path runs along the top of the levee parallel to River Road on the west side of the river only. As the mid-block ramp at Cudahy Park is closed, there is only one direct access point to the Path and river, at Clara Street to the north end of the site.

There is currently no public access into the river channel.

River Structure

At the Cudahy River Road site, the concrete channel is approximately 455 feet wide. The site spans approximately 3,700 feet between the Clara St bridge and Independence Ave/Patata St railroad bridge.

Adjoining Jurisdictions

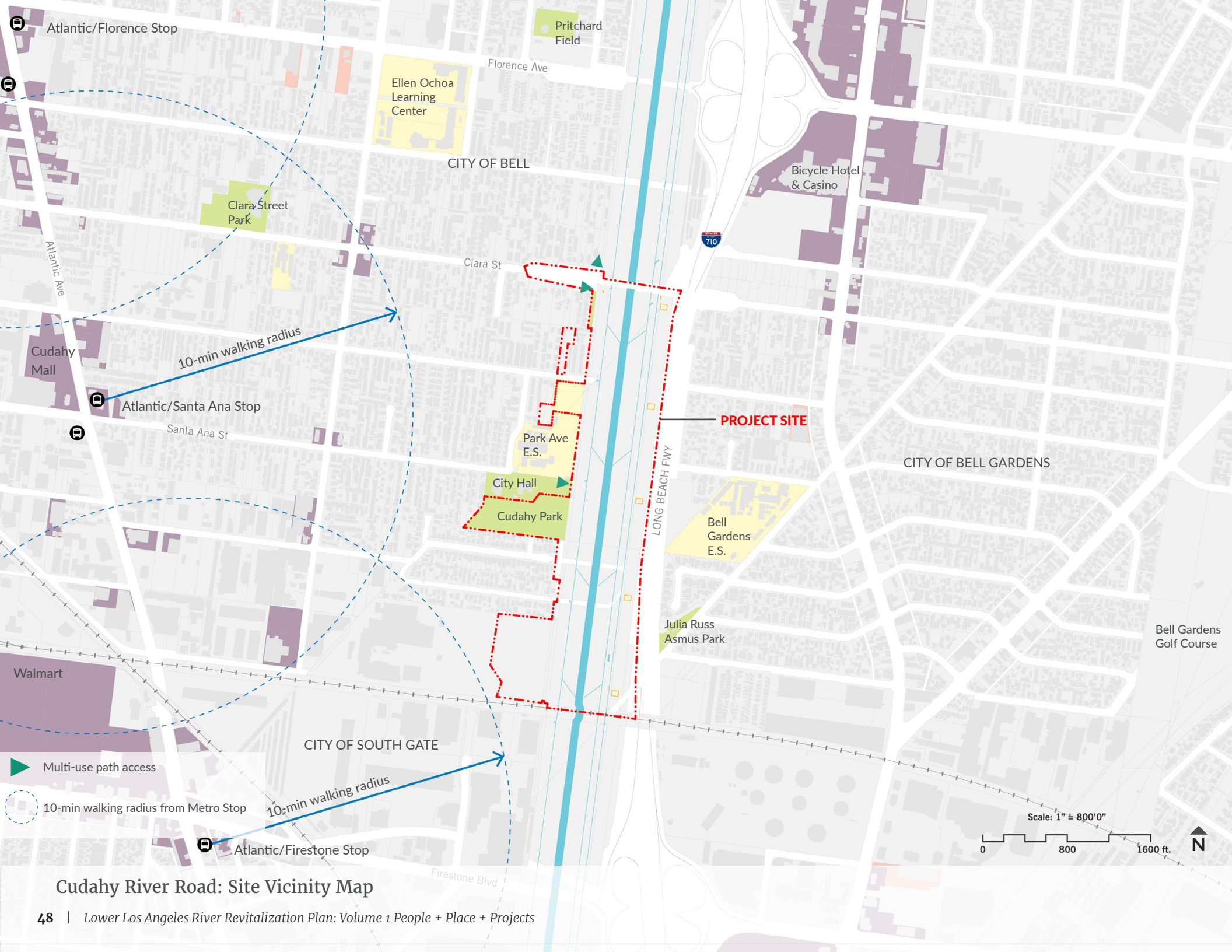
The site is within the Cities of Cudahy and South Gate. The City of Bell Gardens is located to the east but cut off from the site by the I-710 Freeway.

Site Context

Residential neighborhood, some industrial sites, and utility corridors.







Cudahy River Road: Site Vicinity Map

Cudahy River Road: Signature Concept Design Themes

At the Cudahy River Road site, the river is an approximately 455 foot wide concrete channel. The following themes drive the concept design:

Concrete Channel Access

The river's concrete channel has the opportunity to become a major open space resource for people living in the adjacent communities. New ramps, bridges, and terracing provide access into and across the river.

Public Art

Art changes how people interact with places. The concrete channel in particular could be an oversized mural canvas that will make the Cudahy River Road site special.

Play Spaces

Creative play spaces provide children with places to explore and imagine. A joint use school yard can host just such a playground.

Affordable Housing

LA has a housing shortage. One of the few undeveloped riverfront sites could contain income-restricted affordable housing when it is developed.

The Cudahy River Road site is located in the City of Cudahy with a small portion spilling into the City of South Gate, but it has the opportunity to become an amenity for the Cities of Bell and Bell Gardens as well. New ramps and bridges allow access to the concrete channel that has been largely inaccessible. The improvements would allow visitors to access the bottom of the channel or to cross over it to a new recreation area in and around the LADWP Transmission Line Corridor adjacent to the freeway.

The Cudahy River Road site is also brimming with art. Cudahy River Park has the opportunity to host a sculpture garden. Even more, the entire concrete channel becomes a canvas for infrastructure-scale murals that are curated in concert with the community. In Cudahy, a shared road concept calms River Road while parks and schoolyards become locations for joint programming with the larger community.

A vacant industrial site has the potential to be developed with mixed-use development that includes affordable homes on the riverfront.

Considerations regarding safety measures; signage; seasonal, event, or daily availability; and site staffing will be taken into account prior to jurisdictional agencies making a decision to allow public access to the river bottom



Cudahy River Road

Artist's rendering of modified river channel looking south

LEGEND

CHANNEL ENHANCEMENTS

- 1 Multi-Use Bridge
- 2 Channel Access Ramp
- 3 River Crossing
- 4 Levee Terracing

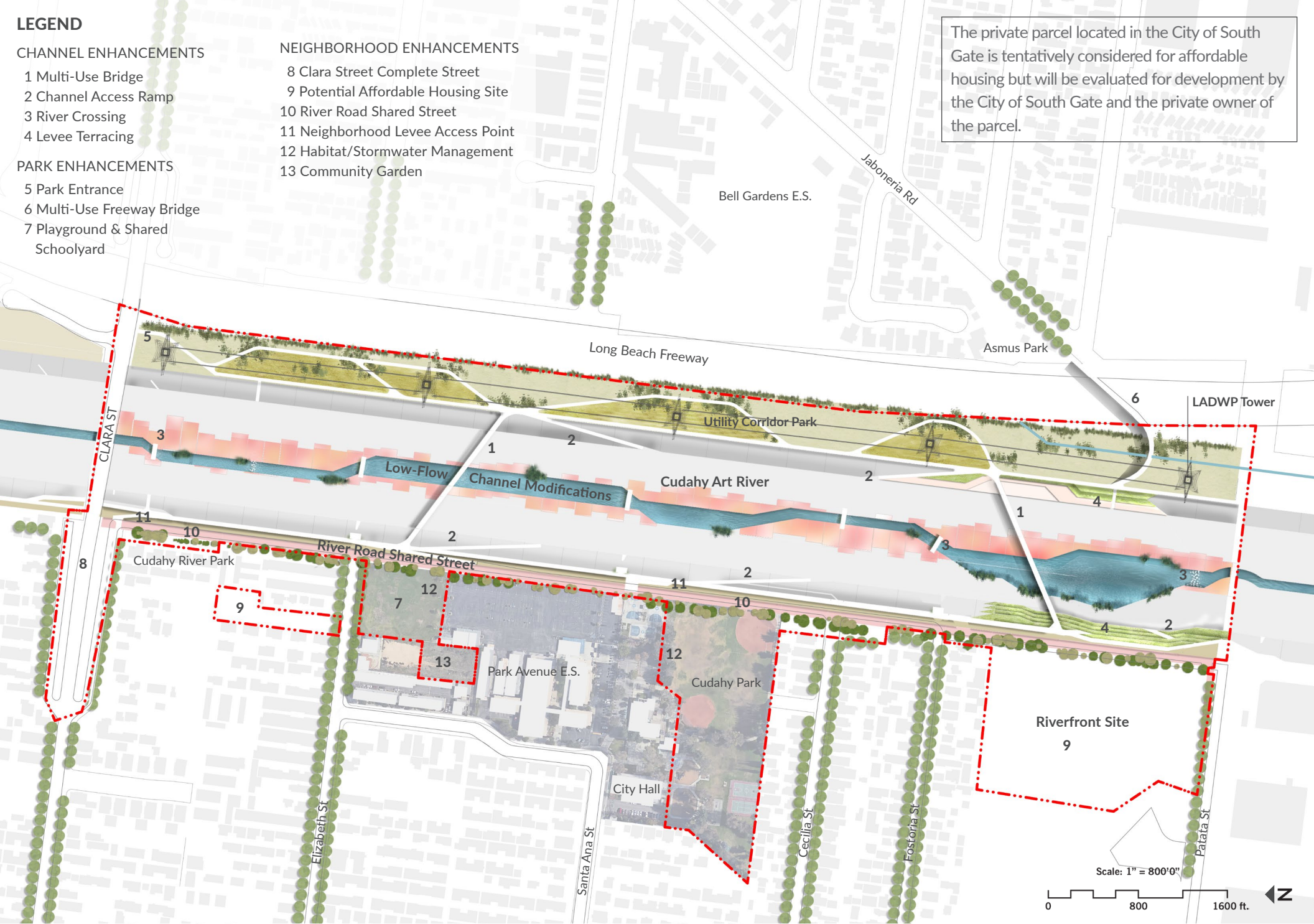
PARK ENHANCEMENTS

- 5 Park Entrance
- 6 Multi-Use Freeway Bridge
- 7 Playground & Shared Schoolyard

NEIGHBORHOOD ENHANCEMENTS

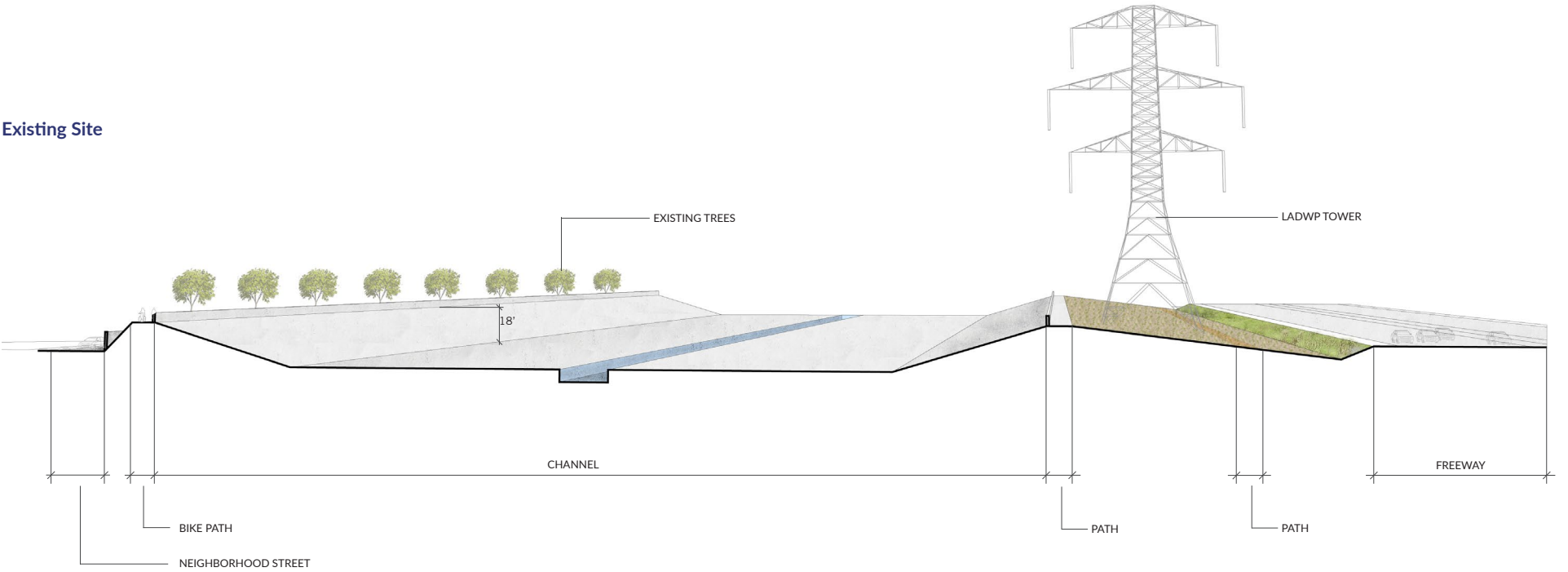
- 8 Clara Street Complete Street
- 9 Potential Affordable Housing Site
- 10 River Road Shared Street
- 11 Neighborhood Levee Access Point
- 12 Habitat/Stormwater Management
- 13 Community Garden

The private parcel located in the City of South Gate is tentatively considered for affordable housing but will be evaluated for development by the City of South Gate and the private owner of the parcel.

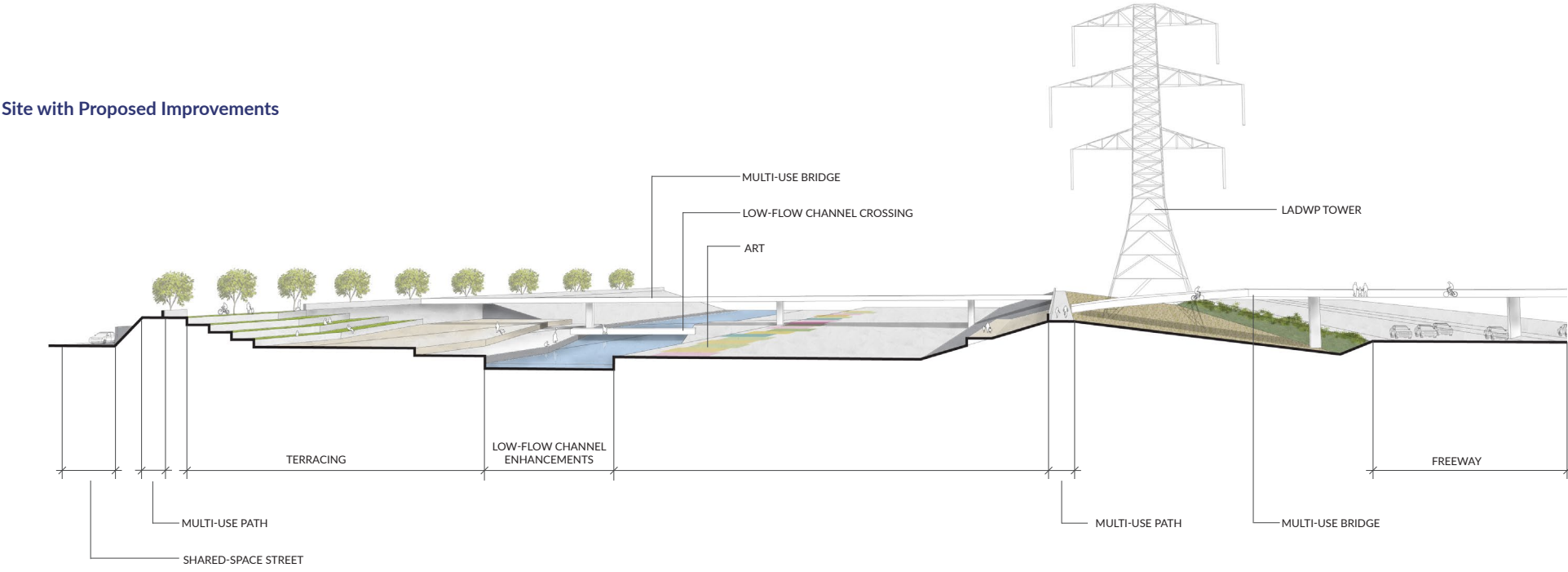


Cudahy River Road Illustrative Site Plan

Existing Site

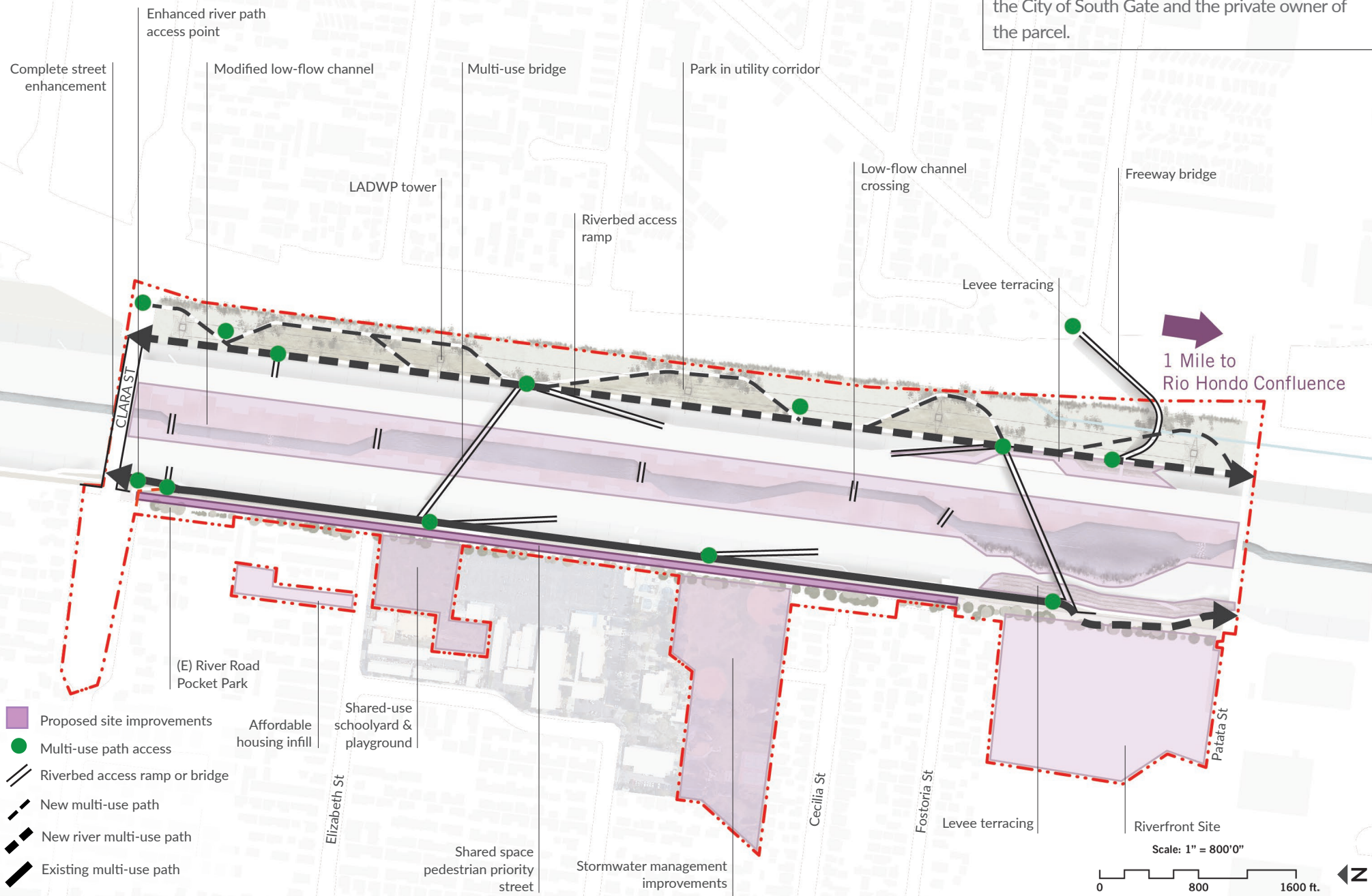


Site with Proposed Improvements



Cudahy River Road Cross Sections

The private parcel located in the City of South Gate is tentatively considered for affordable housing but will be evaluated for development by the City of South Gate and the private owner of the parcel.



Cudahy River Road Diagrammatic Improvement Plan

River Road Shared Street: Safe People–Streets Without Cutting Off Connections

Today, most streets are designed primarily around automobiles; people walking or riding their bikes are merely accommodated. Closing a street to cars can increase safety for bike-riders and pedestrians, but it comes at a cost. These streets can see a significant drop in use on both the closed and adjacent streets. This lack of use leads to a loss of “eyes on the street,” the presence of people that makes neighborhoods safer.

Shared streets increase safety for bike-riders and pedestrians without cutting off access. They do this by removing all the elements of streets that encourage drivers to go fast. By combining all uses together, speed is reduced and safety is improved for all users.



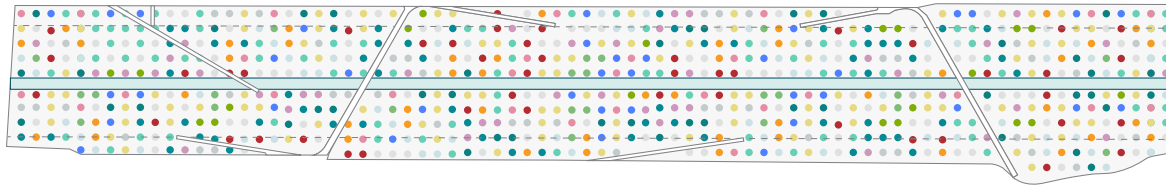
Illustration shows typical elements of shared streets.

Image Source: NACTO Urban Street Design Guide

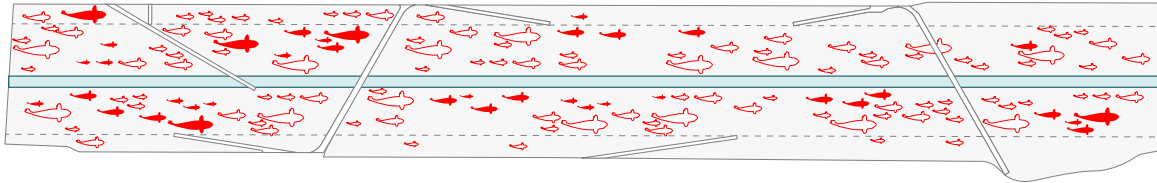


Cudahy River Road
Artist's Rendering of Clara Street Shared Street

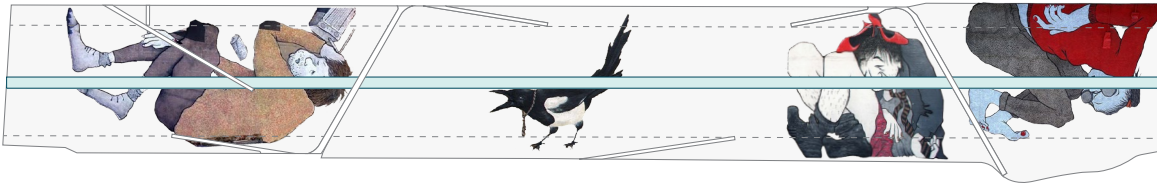
Large-Scale Art: The Concrete Channel Becomes A Canvas For Mural Art



A Damien Hirst spot painting populates the channel and explores the joy of color in an otherwise gray and utilitarian environment.



The concrete channel is reinterpreted with the placement of painted red koi, a fish that is typically at home in decorative, but also man-made ponds



The river becomes a canvas for social issues. The artists Ella & Pitr create huge murals on walls, rooftops and even dams.

Art can transform how we interact with infrastructure. The river provides an opportunity for art that adds color, themes, or content that resonate with the community.

Murals in the channel should reflect the preferences of the community and should be curated in a collaborative effort between the County, art leaders and members of the community.

For illustrative purposes only. Actual art will be curated with community input.

Creative Playgrounds Inspire Children to Explore



Play structure inspired by popular children's book in Berlin, Germany.

Creative playground design can turn playgrounds into places for stories, adventures, and excitement. Numerous playgrounds in the LA area have demonstrated that they do not need to be confined to standard playground selections.

Cudahy Next Steps

Additional required analyses and next steps for the Cudahy River Road project include:

- Collection capacity and storage for stormwater capture should be determined,
- The expected river flows during wet and dry weather should be assessed,
- Geotechnical evaluation for potential placement of nature center or education signage and kiosks should be conducted,
- Soil, permits, and leadership for community garden should be established,
- Soil remediation analyses to determine extent of existing contamination,
- Structural analysis of all proposed bridges to be conducted for final design,
- Bridges and crossings will need to be reviewed and approved by LADWP,
- The appropriate water rights for river diversions should be obtained,
- Access to transmission towers should be evaluated,
- A thorough investigation of land records identifying easement holders, including the assessment of land rights, identify easement fees, and obtain approval from identified easements should be conducted,
- An Environmental Impact Report/Statement (EIR/EIS) may need to be completed to assess any potential environmental impacts,

Applicable Zoning regulations should be met, including

- Title 22
- Los Angeles Municipal Code (LAMC) 12.22 A.31
- 2017 County of Los Angeles Building Code (Title 26)
- 2017 County of Los Angeles Electrical Code (Title 27)
- 2017 County of Los Angeles Plumbing Code (Title 28)

- 2017 County of Los Angeles Mechanical Code (Title 29)
- 2017 County of Los Angeles Residential Code (Title 30)
- 2017 County of Los Angeles Green Building Standards Code (Title 31)
- Air quality assessment based on the distance of the vacant lot from the 710 freeway should be performed, and
- Key studies to assess the potential for environmental and habitat restoration should be performed, and local and native vegetation should be planted to support the native habitat and restore the natural and historical ecosystem wherever possible.

To meet the goals and objectives of the Plan, the Working Group recommends that cities, non-profit organizations, and developers work together to realize the maximum benefits from revitalization investments while stabilizing the surrounding community, and that the community stabilization toolkit be considered during project implementation. The Plan acknowledges that each city has authority over its respective land use planning policies and guidelines outside the river channel and that each city shall individually determine which tools provide the greatest practical benefit for implementation within its jurisdiction.

The community stabilization toolkit includes:

- Community Benefits Agreements
- Inclusionary Housing Policies
- Locally Owned Business Support
- No Net Loss Housing Policies
- Rent Control Ordinances
- Workforce Development
- Community Land Trusts



RIO HONDO CONFLUENCE



Rio Hondo Confluence: Existing Conditions

The Rio Hondo Confluence site is a large area centered around the confluence of the Los Angeles River and one of its tributaries, Rio Hondo. While there are residential neighborhoods on either side of the river, they are mostly cut off from direct river access by industrial uses, the I-710 Freeway, maintenance yards, or a combination of these difficult-to-cross uses.

The Imperial Equestrian Center is located to the east of the site, just north of the Imperial Highway. To the south end of the site, Hollydale Regional Park provides active and passive recreation to the surrounding neighborhood, equestrian facilities, and direct connection to the River Bike Path.

The Los Angeles River Trail, including multi-use path and equestrian path, runs the full length of the river from Rio Hondo to Hollydale Park on the east bank. The LA River Bike Path runs along the top of the levee on the west bank, until just south of the Imperial Highway.

There are three trail access points on the east side of the river - one at Imperial Highway, and two in Hollydale Park. Access on the west bank is restricted to the Imperial Highway intersection.

River Structure

Site Extents: 1.6 miles between Tweedy St and the diagonal railroad bridge to the north and Century Blvd to the south

Concrete channel width: 460'

Adjoining Jurisdictions

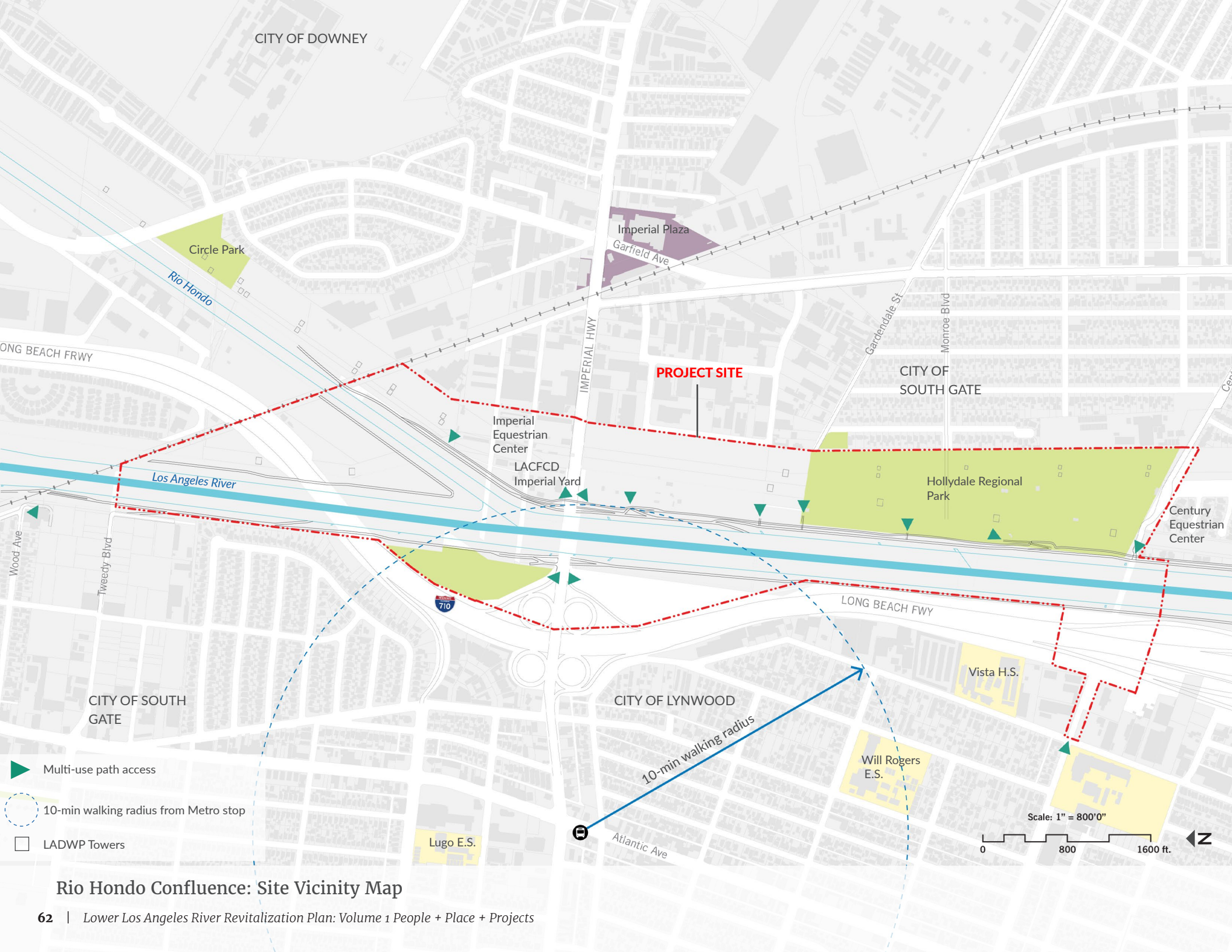
Cities of South Gate, Downey, Paramount, and Lynwood.

Site Context

Residential neighborhood, some industrial sites, utility corridors and active recreation.







Rio Hondo Confluence: Site Vicinity Map

Rio Hondo Confluence: Signature Concept Design Themes

Accessing the Confluence

The confluence is one of the most significant locations on the river. Terracing eases access and creates a dramatic experience at the bottom and sides of the channel.

Connecting Open Spaces

Three bridge parks would connect all of the open spaces around the confluence. They will allow visitors to more easily enjoy this major open space.

Continuous Waterfront

To the extent feasible, parking and other utilitarian uses are relocated away from the waterfront. The waterfront becomes a continuous open space experience.

Community Amenities

An amphitheater and a community center will be part of the parks and provide opportunities for community and education-centered programming at the confluence.

If there is a place on the river that draws visitors from near and far it is the Rio Hondo Confluence site. The site is brimming with activities and an array of open spaces:

- An expanded Hollydale Park;
- A new community and educational center;
- A community amphitheater;
- A dramatic reshaping of the concrete channel at the confluence;
- A new Urban Orchard adjacent to the Triangle Site;
- Multi-use paths;
- Connections to the equestrian center;
- Enhancements to the upland habitat areas at Parque Dos Rios; and
- Bridge parks that connect them all.

Parking, restrooms, bike stations and other amenities cater to visitors arriving by all modes of transportations. Complete streets improvements in particular to the Imperial Highway bridge ease access to the site.

Considerations regarding safety measures; signage; seasonal, event, or daily availability; and site staffing will be taken into account prior to jurisdictional agencies making a decision to allow public access to the river bottom



Rio Hondo Confluence

Artist's rendering of confluence vista point looking north

LEGEND

CHANNEL ENHANCEMENTS

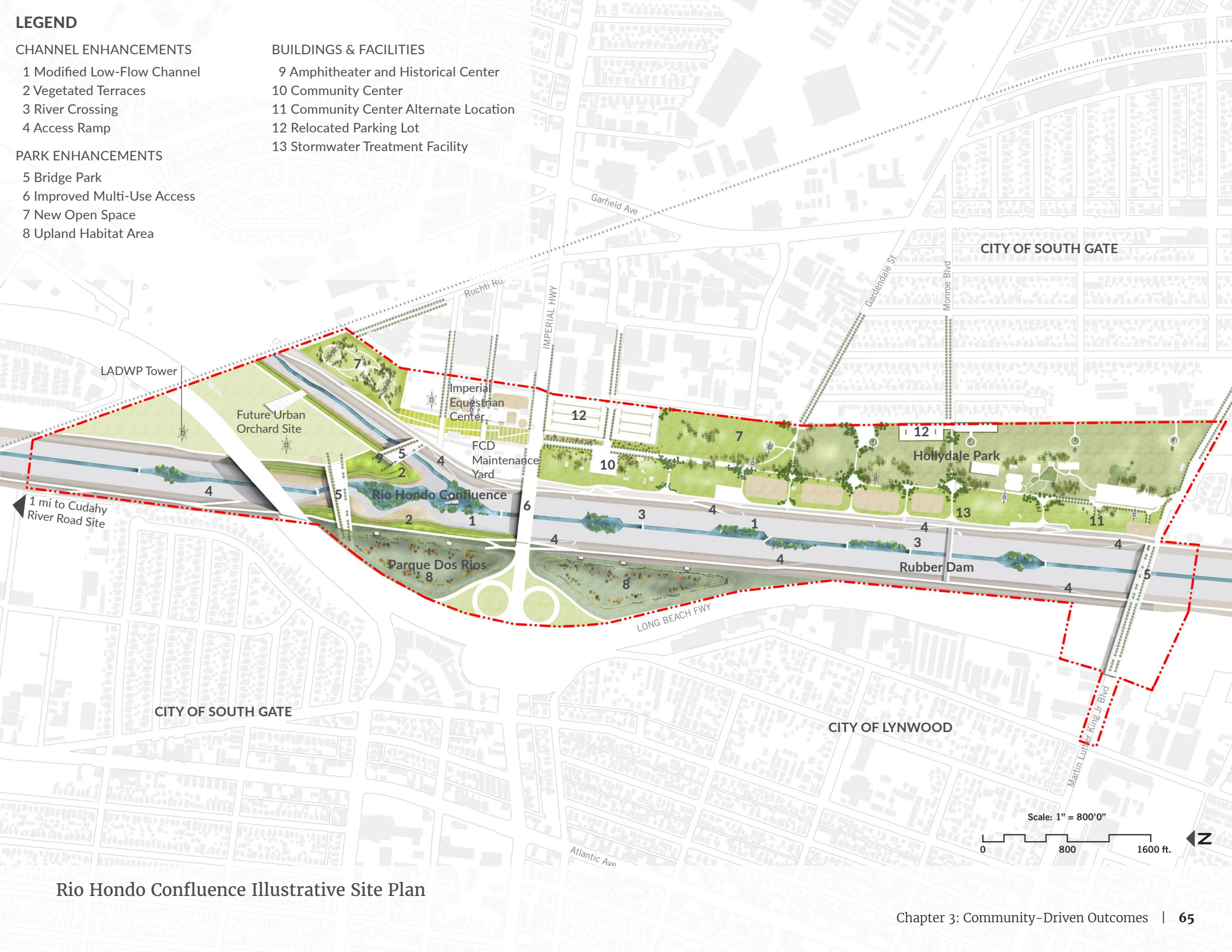
- 1 Modified Low-Flow Channel
- 2 Vegetated Terraces
- 3 River Crossing
- 4 Access Ramp

PARK ENHANCEMENTS

- 5 Bridge Park
- 6 Improved Multi-Use Access
- 7 New Open Space
- 8 Upland Habitat Area

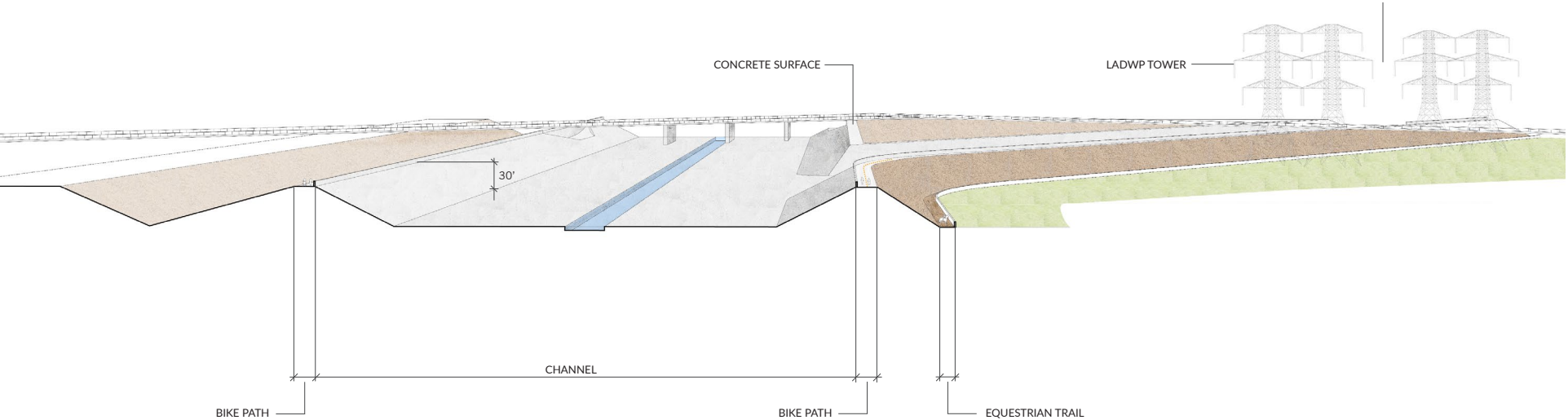
BUILDINGS & FACILITIES

- 9 Amphitheater and Historical Center
- 10 Community Center
- 11 Community Center Alternate Location
- 12 Relocated Parking Lot
- 13 Stormwater Treatment Facility

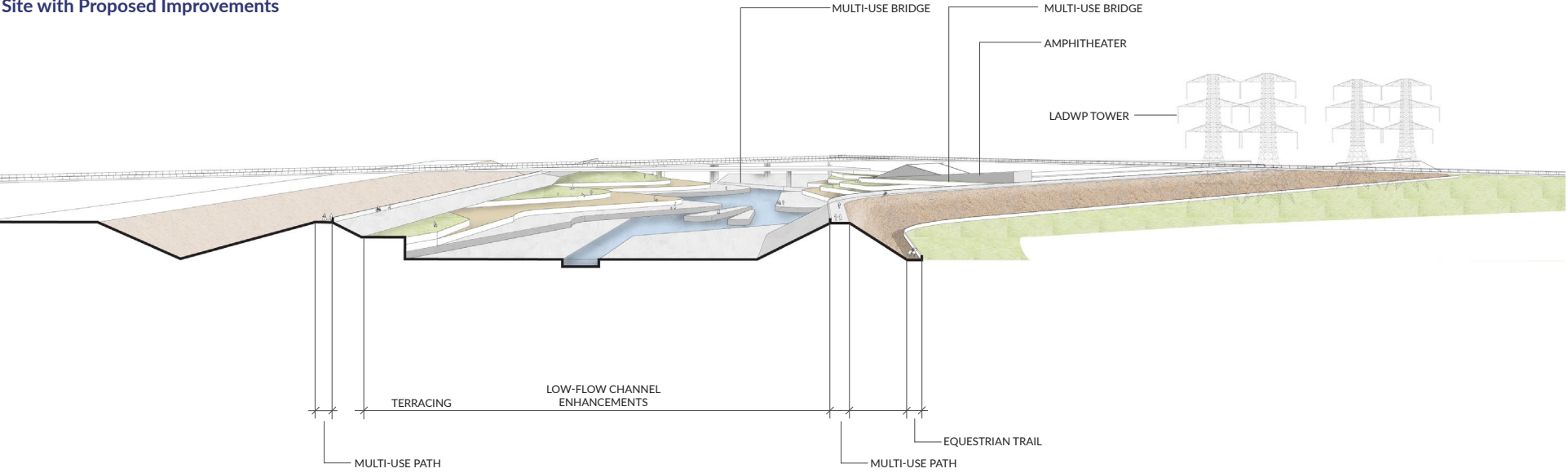


Rio Hondo Confluence Illustrative Site Plan

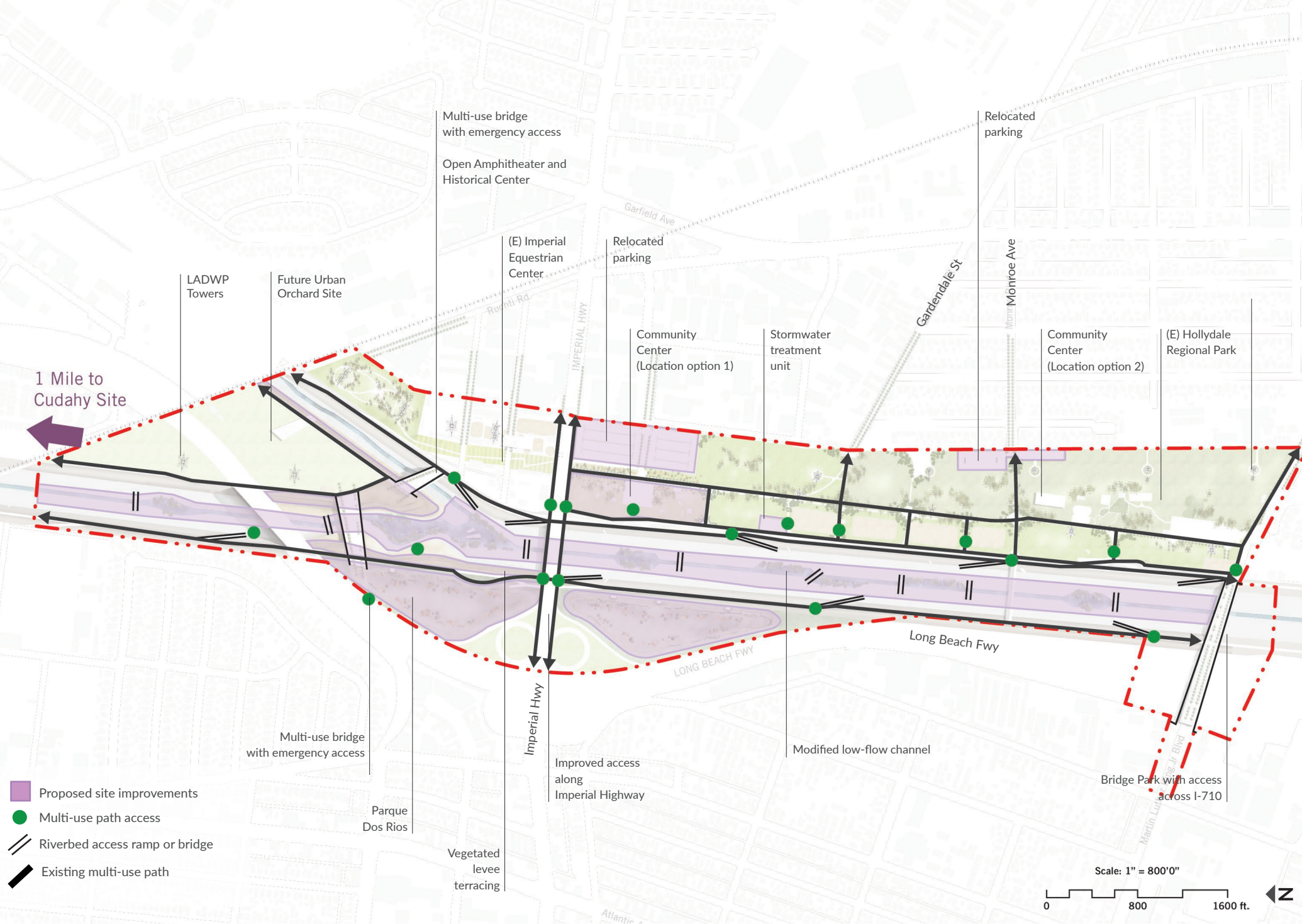
Existing Site



Site with Proposed Improvements



Rio Hondo Confluence Cross Sections



Rio Hondo Confluence Diagrammatic Improvement Plan

The Confluence Site

The meeting of the LA River and Rio Hondo is a dramatic scene. In three directions, concrete channels stretch into the distance. The low-flow channel has been modified to create large pools of water. Stepping stones allow visitors to pass onto concrete islands that create movement in the water. The levees are terraced with vegetation. The terraces' steps ease access to this vantage point.

Above, new bridge parks connect the large open spaces for people on foot, on bike and on horses as well as for emergency vehicles. At the tip of the "triangle site" sits an amphitheater and historical center that draws visitors for outdoor events and concerts.



Confluence Enlarged Plan



Amphitheater & Community Center

The Rio Hondo Confluence amphitheater and Hollywood community center provide three opportunities: to bring programming of regional significance around both the river and the culture and conversations of the Gateway City communities; to place the Rio Hondo Confluence site on the architectural map of Los Angeles with forward-thinking and imaginative buildings that capture the future aspirations of young southeast LA County residents; and to provide dedicated space for local Native Nations along with resources for programming.



Community and educational center
Image: Ben Rahn, A-Frame Photography

Rio Hondo Confluence Equestrian Focus

The area around the Rio Hondo Confluence is established as a significant equestrian center. With the Imperial Equestrian Center, the area is a destination for equestrian activity. Given this and the extensive open space areas around the confluence, program, and design should incorporate a particular emphasis on providing access for people on horseback. Paths should be designed to highest standards with care given that facilities have sufficient shy zones and separation from other activities. Ideally, equestrian paths will continue as loops around the site as well as north, to the Cudahy River Road site.





Rio Hondo Confluence
Artist's rendering of upland wetlands habitat

Bridge Parks

Across the country and around the world, bridges are appearing that do more than just allow people to move from point A to point B. Bridges are becoming places in their own right, places that are attractive enough to invite users to remain and look out over the land and water below. This is particularly applicable for bridges designed for people traveling on foot, by bike or on the back of a horse. Bridge parks crossing the river provide just the opportunity to create such an environment.

Bridge parks provide new opportunities for crossings with ample width for pedestrians, bicyclists, and equestrians to pass safely. They would also provide access for emergency and maintenance vehicles. But they should also provide spaces to look out over the river, places to sit comfortably with protective shade from the Southern California sun.

Considerations regarding safety, signage, seasonal and daily availability, and site staffing will be taken into account prior to allowing public access to the river bottom.



Rio Hondo Confluence
Artist's rendering of bridge park looking south

Rio Hondo Confluence Next Steps

Additional required analyses and next steps for the Rio Hondo Confluence project include:

- Collection capacity, demand, and storage for stormwater capture should be determined,
- The final design of all proposed bridge alternations must be reviewed and approved by LADWP,
- Structural analysis of all proposed crossing should be conducted for the final design,
- Proposed crossings should be reviewed and approved by LADWP,
- The expected river flows during wet and dry weather demands should be assessed,
- Access to the transmission towers should be evaluated,
- Thorough investigation of land records identifying easement holders, including the assessment of land rights should be conducted, easement fees must be identified, and approval from identified easements should be obtained,
- The water demand of vegetation in the low-flow channel should be evaluated,
- The effects of increased water demands from vegetation and wildlife should be assessed,
- The appropriate water rights for river diversions should be obtained,
- A thorough Water Quality report—including pollutant settling, oxygen demand—should be performed,
- Priority species (both plant and animals) should be determined for the habitat and wetland areas,
- Geotechnical evaluation for potential placement amphitheater, community center or education signage and kiosks should be performed,
- Soil remediation analyses to determine extent of contamination should be conducted,
- Proposed recycled water plans adjacent in the vicinity of the stormwater treatment unit should be assessed for water demand, water pollutant loads, and odor,
- Air Quality Assessment should be performed,
- Metro Santa Ana Branch proposed route and station locations should be considered for the final design and layouts,
- Requirements for utility easement use agreements should be assessed,
- Hydraulic modeling to fully assess impacts of reconfiguration of Rio Hondo and Compton Creek Confluences in conjunction with Concrete Channel Enhancements should be performed,
- An Environmental Impact Report/Statement (EIR/EIS) may be required to assess any potential environmental impacts, and
- Key studies to assess the potential for environmental and habitat restoration should be performed, including adding vegetation to the river and restoring the ecological function of the river, while still maintaining the primary function—reduce flood risk for the communities adjacent to the river. Local and native vegetation should be planted to support the native habitat and restore the natural and historical ecosystem wherever possible.

To meet the goals and objectives of the Plan, the Working Group recommends that cities, non-profit organizations, and developers work together to realize the maximum benefits from revitalization investments while stabilizing the surrounding community, and that the community stabilization toolkit be considered during project implementation. The Plan acknowledges that each city has authority over its respective land use planning policies and guidelines outside the river channel and that each city shall individually determine which tools provide the greatest practical benefit for implementation within its jurisdiction.

The community stabilization toolkit includes:

- Community Benefits Agreements
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- Community Land Trusts

WILLOW STREET



Willow Street: Existing Conditions

The Los Angeles River at the Willow site is surrounded primarily by low-density residential neighborhoods.

De Forest Avenue runs between the neighborhood and the river at the north end of the site, fronted by the levee to the west and residential backyards to the east. On the west bank of the river, the I-710 Freeway abuts the levee and acts as a barrier to the residential district farther west. Because of the height of the levee in this section there is no visual connection to the river despite the potential for direct views.

The LA River Bike Path runs along the full length of the river on the east bank, sitting at the top of the levee. There are three access points to the bike path: a ramp at De Forest Ave and W 25th St, a staircase on Hill Street, and an at-grade entrance through the cul-de-sac just south of Pacific Coast Highway. There is a utility access road but no bike path or other public access on the west bank of the river.

In this area, the channel opens up into a soft bottom condition. It is host to emerging wildlife habitat and other vegetation. There is no public access to the river channel here.

River Structure

Site Extents: 1.2 miles between 28th St to the north and Pacific Coast Highway to the south

Soft-bottom channel width: 620'

Adjoining Jurisdictions

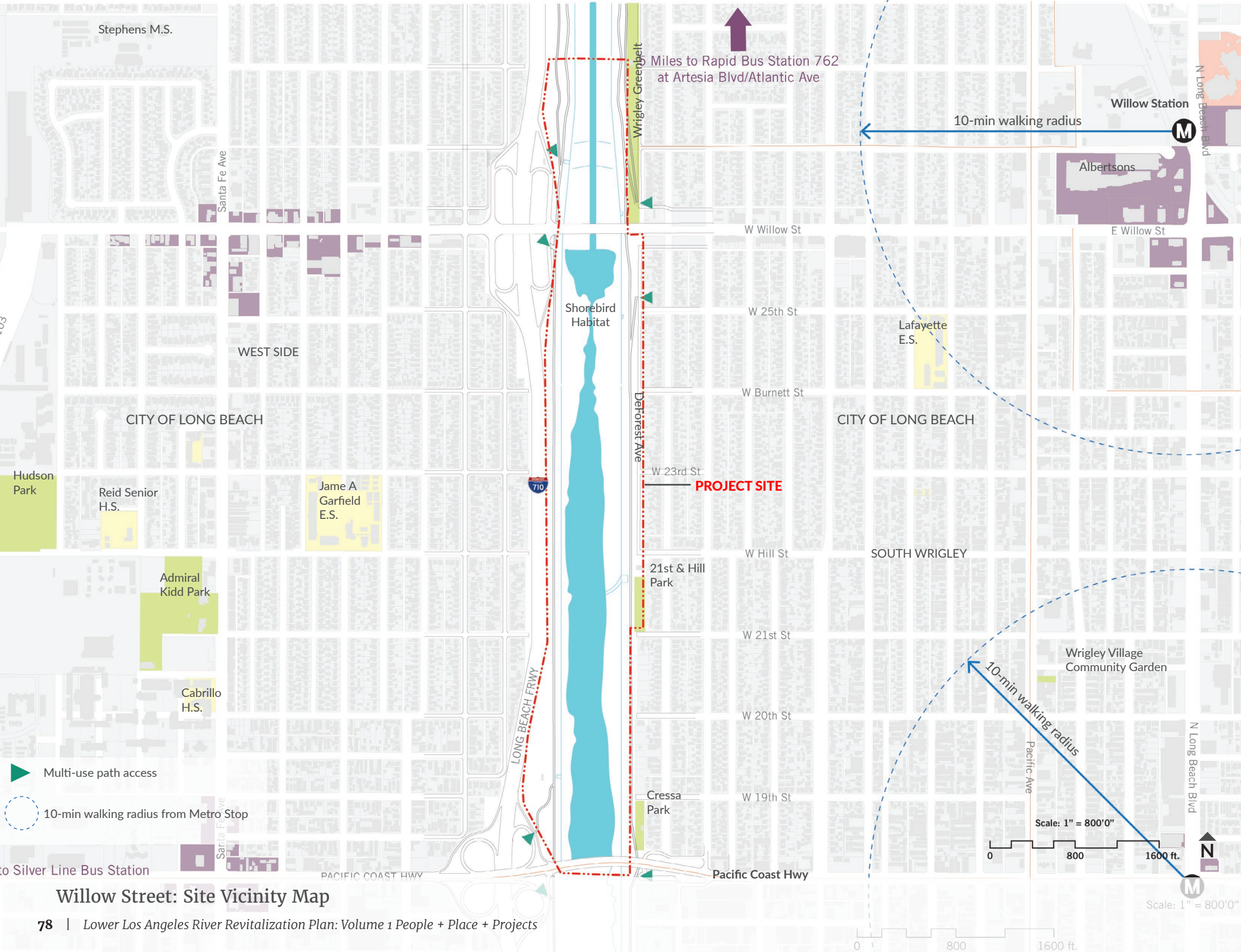
City of Long Beach

Site Context

Residential neighborhoods, utility and maintenance yards, and the I-710 Freeway.







Willow Street: Site Vicinity Map

Willow Street: Signature Concept

Connecting the Community to the River

Seen from the community, the levees appear as walls at street ends. Small architectural structures, also known as follies, or other sculptural art can draw the eye up to the top of the levee. Stairs and ramps provide physical access.

Exploring the Soft-Bottom Channel

Boardwalks built above the habitat allow exploration of the flora and fauna while minimizing disturbance.

Preserving the Delicate Habitat

At the Willow site, access to and recreation in the soft-bottom channel will need to be balanced with protecting the natural habitat and in particular the shorebird habitat. As a result, activities will generally be passive in nature.

Accessing the Levee

Currently, the river-side of the levee consists of impassable boulders. New ramps will provide access to a new multi-use path at the bottom of the levee.

If there is a place on the river that resembles the river in its natural state, it is this soft-bottom channel that begins south of Willow Street in Long Beach. Even in summer, the vegetated soft-bottom portion of the river carries water. In this segment of the river, the adjoining neighborhood's elevation is similar to that of the river. The levees extend taller than most one-story homes and seen from the neighborhood roads appear to be giant walls at the ends of most streets.

The design concept for the Willow site seeks to preserve the natural habitat that has developed in the channel while providing access to much needed open space for the adjoining communities. Stairs and ramps provide access onto the levee and into the channel. Architectural “follies” (pavilions or art installations) at the top of the levee create visual connections between the neighborhood and the site. New floating boardwalks extend into the soft-bottom channel, located above the delicate flora and able to float higher with rising waters. A multi-use path at the bottom of the channel allows use of this particularly wide segment of the river. Platforms expand the upper path and provide opportunities for bird watching.

Considerations regarding safety measures; signage; seasonal, event, or daily availability; and site staffing will be taken into account prior to jurisdictional agencies making a decision to allow public access to the river bottom



Willow Street

Artist's rendering of improvements in the soft bottom channel

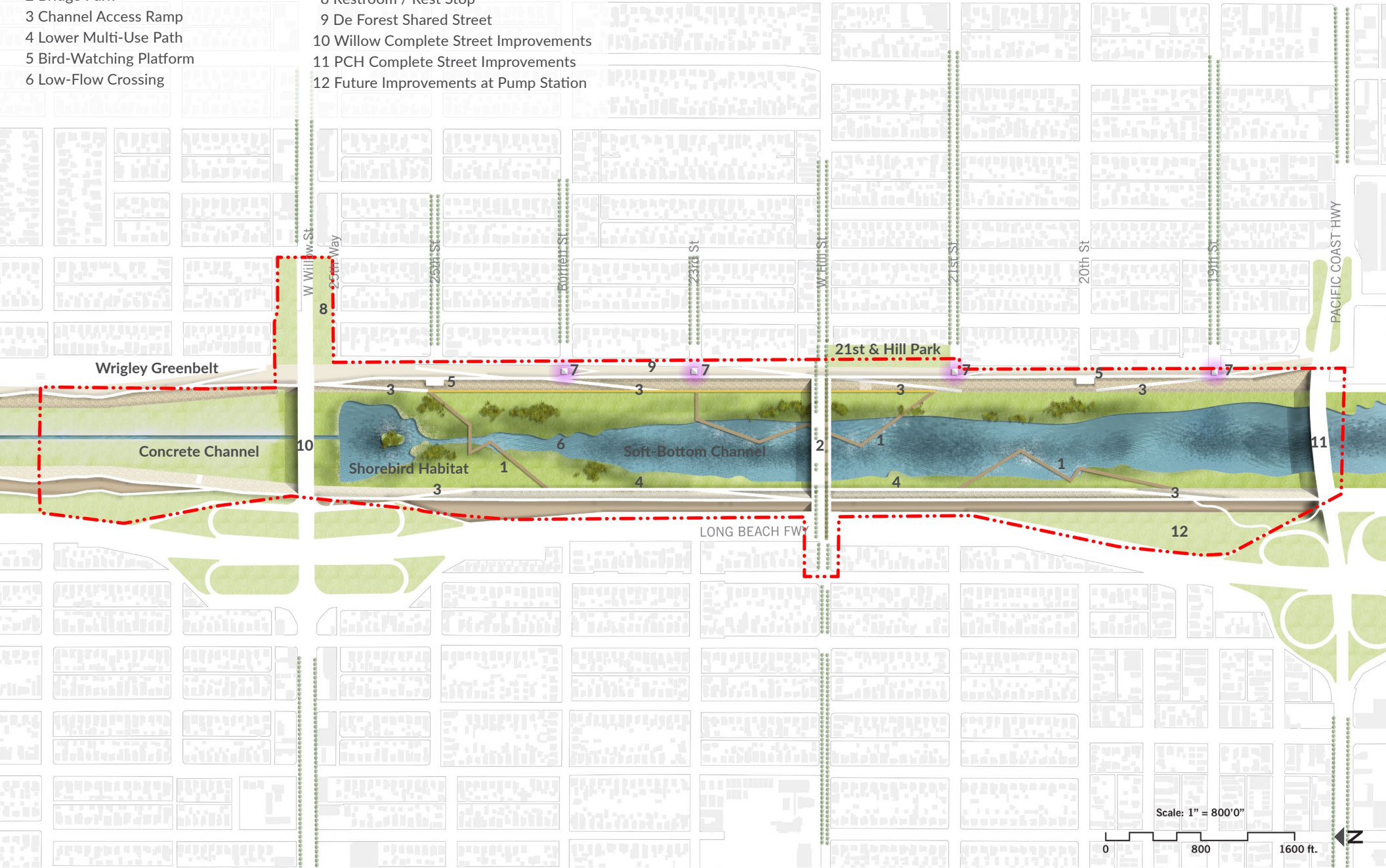
LEGEND

CHANNEL ENHANCEMENTS

- 1 Breakaway Floating Boardwalks
- 2 Bridge Park
- 3 Channel Access Ramp
- 4 Lower Multi-Use Path
- 5 Bird-Watching Platform
- 6 Low-Flow Crossing

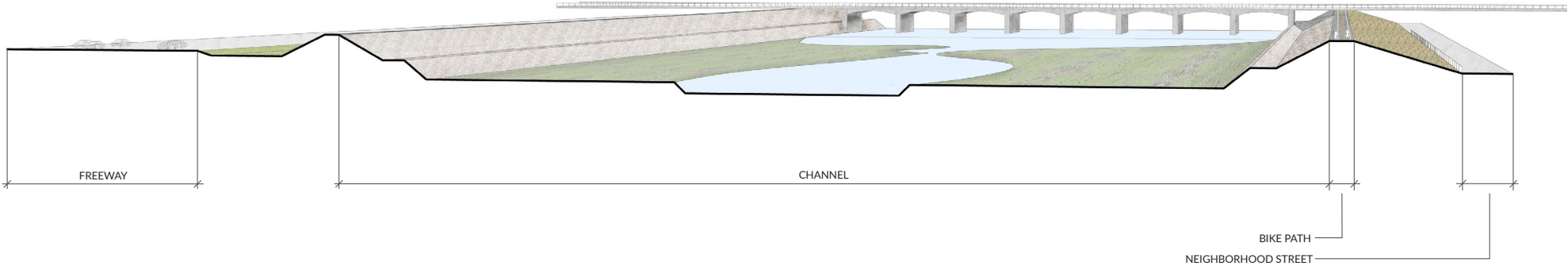
NEIGHBORHOOD ENHANCEMENTS

- 7 Folly with Levee Access
- 8 Restroom / Rest Stop
- 9 De Forest Shared Street
- 10 Willow Complete Street Improvements
- 11 PCH Complete Street Improvements
- 12 Future Improvements at Pump Station

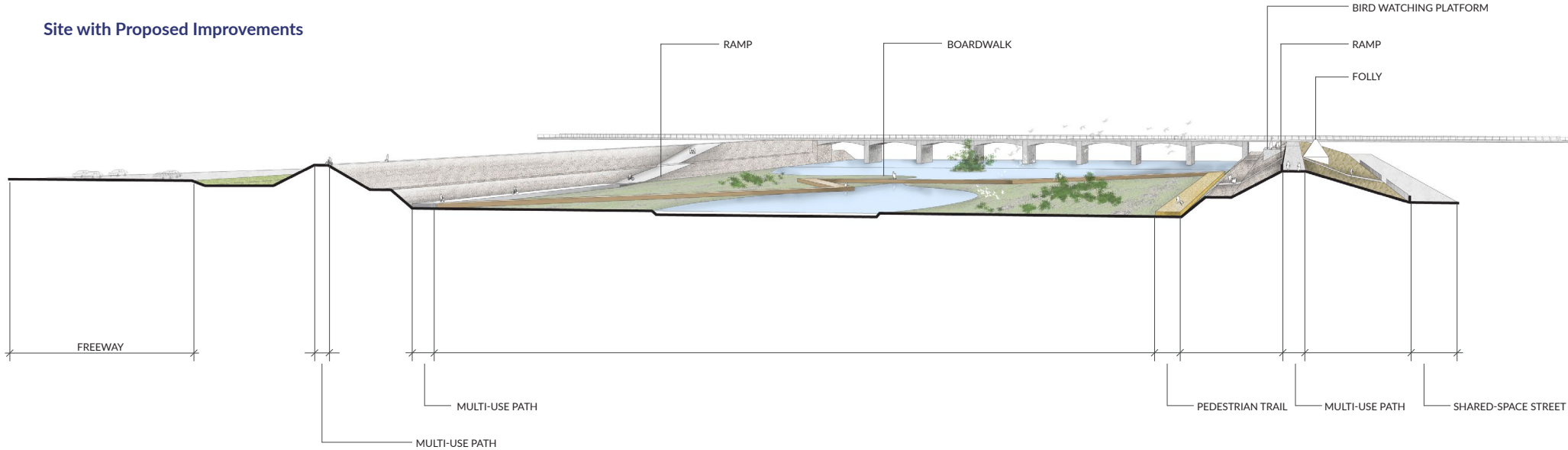


Willow Street Illustrative Site Plan

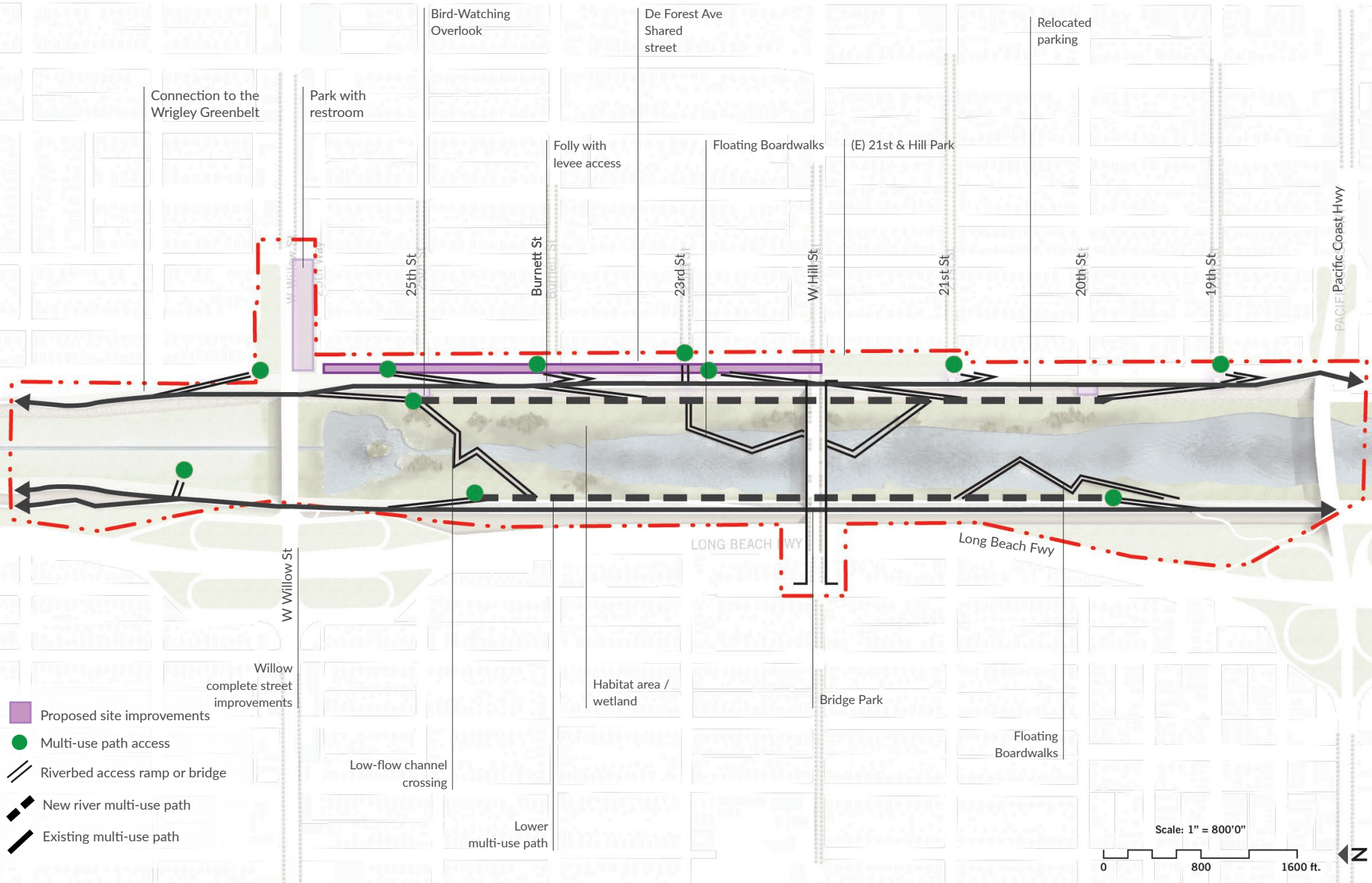
Existing Site



Site with Proposed Improvements



Willow Street Cross Sections



Willow Street Diagrammatic Improvement Plan

Soft-Bottom Channel Floating Boardwalks

Floating boardwalks allow the public to access and experience responsibly wetlands that are otherwise inaccessible. Wetland boardwalks provide a tremendous opportunity to educate about local flora and fauna. Built correctly, they also protect the wetland habitats from excessive disturbance.

Several different approaches deal with maintaining boardwalks in wetlands that regularly experience significant changes in water levels. Designs that allow boardwalk sections to float tend to do better than those that are firmly anchored in place. Additional guidance on potential design can be found at <https://www.railstotrails.org/resourcehandler.ashx?id=4231>



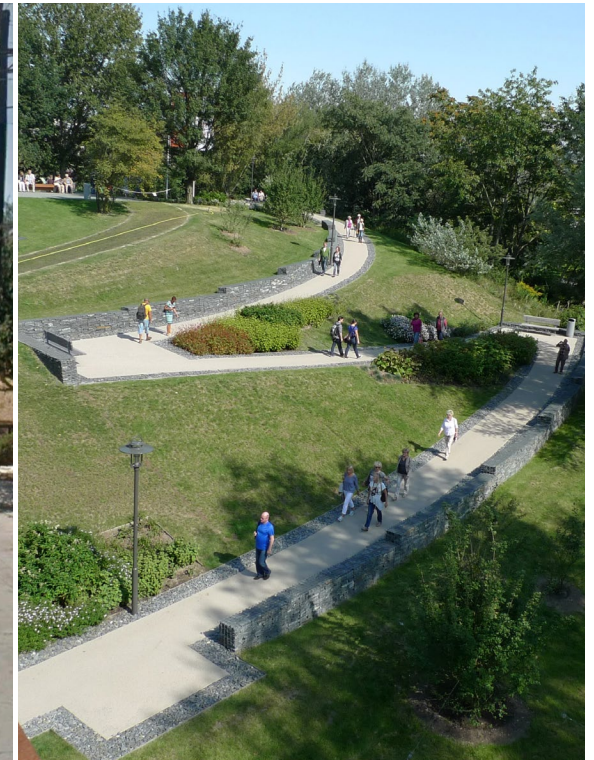
Street Ends

At the Willow site, the levees are taller than most one-story homes. Seen at the ends of streets, they appear as if they were walls. From the bottom, it is not apparent that there is a multi-use trail at the top, nor that there is a river on the other side. Only in a handful of places do stairs or ramps provide access.

The concept provides two approaches to overcome this apparent disconnect between the river and the adjacent neighborhoods. First, so-called "follies" at the top of the levee create a visual connection that draws the eye up. These follies could be sculptures, art installations, or small architectural structures. Second, stairs and ramps provide direct access to the top of the levee. Ideally, the follies and the access should be choreographed so that together they form interesting yet practical connections from the neighborhood to the Willow Street project.



Image Source: Google Earth 7/2015



Access designed for users with different abilities

Willow Street Next Steps

Additional required analyses and next steps for the Willow Street project include:

- Collection capacity and storage of stormwater capture along the Wrigley Greenbelt South should be determined,
- The expected river flows during wet and dry weather should be assessed,
- A structural analysis of all crossings should be conducted for final design,
- Proposed crossings should be reviewed and approved by LADWP,
- Access to transmission towers should be evaluated,
- Thorough investigation of land records identifying easement holders, including the assessment of land rights should be conducted, easement fees must be identified, and approval from identified easements should be obtained,
- Appropriate water rights for river diversions should be obtained,
- Priority species (both plant and animals) should be determined for the habitat and wetland areas,
- Structural analysis for overlooks should be conducted,
- Geotechnical evaluation of proposed Wrigley Greenbelt South area for stormwater infiltration should be performed,
- Geotechnical evaluation for potential placement of nature center or education signage and kiosks should be conducted,
- An Environmental Impact Report/Statement (EIR/EIS) may be required to assess any potential environmental impacts, and

- Key studies to assess the potential for environmental and habitat restoration should be performed, including enhancing the existing vegetation in the river and improving the current ecological function, while still maintaining the primary function—reduce flood risk for the communities adjacent to the river. Local and native vegetation should be planted to support the native habitat and restore the natural and historical ecosystem wherever possible.

To meet the goals and objectives of the Plan, the Working Group recommends that cities, non-profit organizations, and developers work together to realize the maximum benefits from revitalization investments while stabilizing the surrounding community, and that the community stabilization toolkit be considered during project implementation. The Plan acknowledges that each city has authority over its respective land use planning policies and guidelines outside the river channel and that each city shall individually determine which tools provide the greatest practical benefit for implementation within its jurisdiction.

The community stabilization toolkit includes:

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Templates Recommended by the Working Group

Although many specific projects were recommended by the Plan, the Working Group wanted to also provide design templates which could be used for rapid revitalization distributed even more widely throughout the watershed. The templates—multi-use path enhancements; community connectivity, welcoming, and wayfinding; and concrete channel enhancements—will help ensure that improvements will be executed consistently and in the spirit of the Plan's goals and objectives. The templates will help stakeholders implement improvements at any scale—either a little at a time or widespread—based on available funding and community needs. The planning process identified areas that may be suitable for revitalization with the three templates.



MULTI-USE PATH ENHANCEMENTS



Multi-Use Path Enhancements

The multi-use path is the primary way people experience the length of the river. What exists today as an often harsh and austere asphalt stretch has the potential to become a beautiful, comfortable, and safe place that seamlessly connects the upper and lower stretches of this part of the river. This change will not happen all at once; rather it will be incremental as funding and design opportunities emerge. The strategies laid out in this template provide the foundation for consistency along the length of the multi-use path as it evolves over time, and should be seen as a baseline for communities and other entities as they incrementally improve the path.

Three major themes inform the template:

Strong Sense of Place

Much of the path will be simple surfaces, but amenity clusters, signage and wayfinding, and signature spaces along the path provide an opportunity to reinforce the identity of the river in a broad sense, and create a sense of identity for individual communities.

Continuous Experience

Multi-use path users should be able to expect both a continuous physical connection along the length of the lower river and a consistent quality of space and materials along the path, even where space might be constrained and conditions vary.

Safety and Comfort

Adherence to and provisions for safety and comfort should be noticeable and accessible along the full length of the multi-use path. The design of the path, provision of amenities, and signage and wayfinding all play an important role.

Existing Conditions

Currently, a path or trail exists in some form for the full 19-mile stretch from Vernon to the mouth of the river in Long Beach. The existing path is often designed as a bikeway (rather than truly multi-use) and requires users to switch banks of the river multiple times in order to make the complete journey.

The only fully "multi-use" section that is designed for equestrians as well as those on bikes and on foot is the 10.5-mile stretch of the Los Angeles River Trail, stretching from South Gate to mid Long Beach. Even in these multi-use sections, the demarcations for uses and priority of use is often unclear, leading to dangerous conflicts.

Along the length of the path there are few areas for rest and recovery. Some amenities, like benches, shade, water, and horse staging areas exist where the trail is adjacent to public parks including Hollydale and Dominguez Gap Wetlands but in many stretches of the path there are miles between such provisions.



Multi-Use Path: A Continuous High-Quality Experience

Description

Expansion and improvement of the north-south multi-use path will support the plan's goal of creating a consistent, safe, and comfortable user experience along the length of the river. Improvements and amenities considered in this template include infill of missing path segments, adding path modes (e.g. equestrian), shade, restrooms, lighting, art, signage, and engagingly curated historical, environmental, and cultural experiences. All path enhancements will be coordinated with the LA River Landscape Guidelines and other guidelines and templates as appropriate and applicable.

Physical Components

The multi-use path template consists of a number of elements that together form a robust, functional, and inviting path network. Wherever possible, designs and plans should incorporate all of the components listed below. Where site specific constraints prevent the full suite of elements, priority should be given to making the path itself as robust as possible, in conjunction with adjacent landscape and environmental improvements.

The primary physical components of this template:

- The Path itself: Design standards covering dimensions, surface, accessibility, and other basic geometric characteristics;
- Site Furnishing and Safety Amenities: Design, placement, and attachment standards for lighting, benches, trash receptacles, shade structures, bike parking, horse ties, 911 call boxes, bike fix-it stations, and other elements adding to the comfort and safety of all path users;
- Branding and Wayfinding: A comprehensive branding approach, including signage, furniture design, paving, markings and other design elements to be coordinated with the signage, branding, and wayfinding templates;
- Landscape and Environmental Improvements: Every path improvement project will include landscape improvements as outlined in the LA River Master Plan Landscaping Guidelines and Plant Palettes. These may vary in scope and scale, but should seek to increase the amount of plant cover as well as contribute to the character of the river corridor.

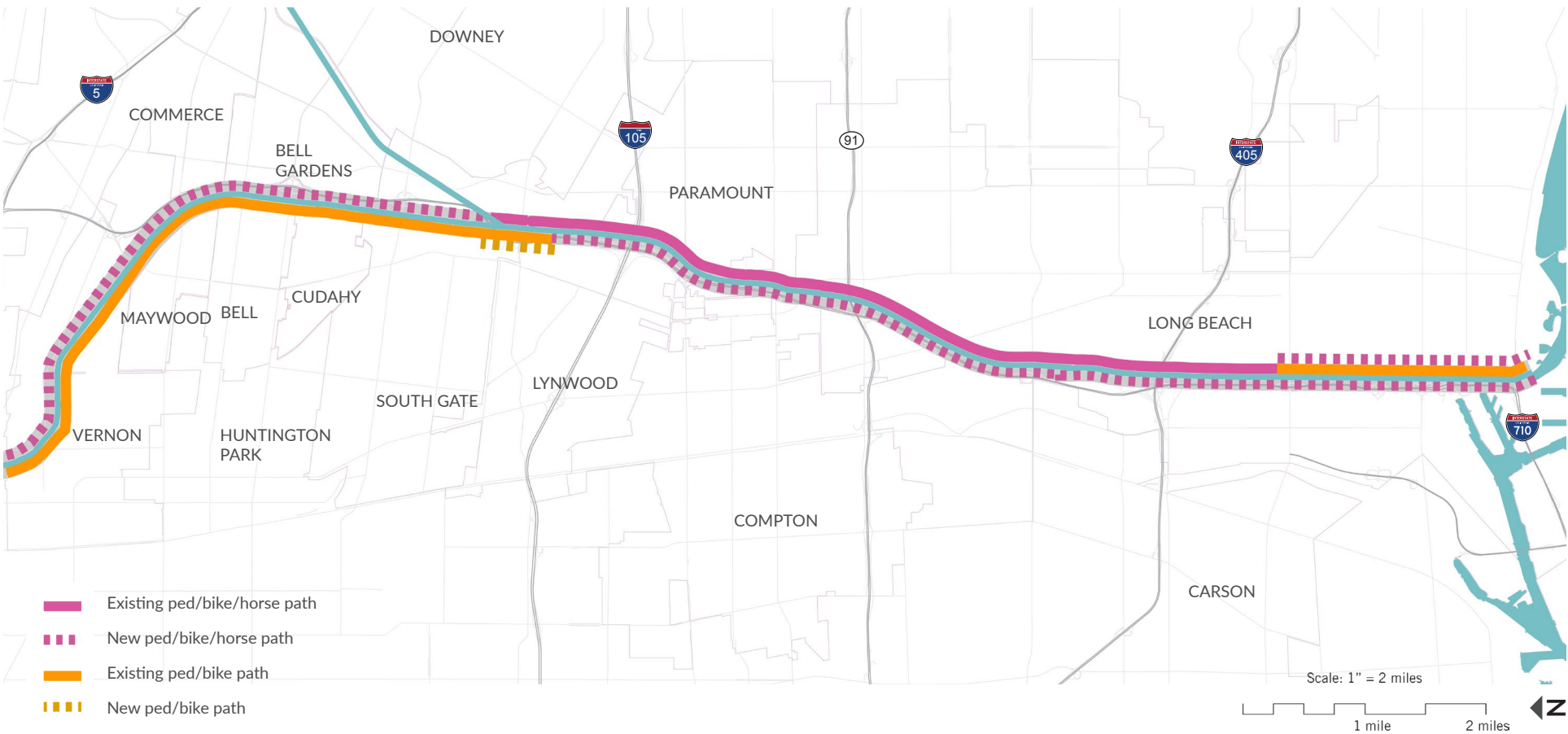
Best Case vs Constrained

The approaches laid out in this template represent a best-case scenario for areas along the river with the space and structure to accommodate the ideal layout for a multi-use path. Many areas are constrained, often by the location of the path on top of the levee or between other barriers.

In such constrained cases, the multi-use path should be designed to safely accommodate all modes in the space allowed and clearly demarcate priority. The balance of each type of element should be employed depending on the needs of the path in any particular section. When space is limited, emphasis should be on the quality of experience and clear wayfinding rather than trying to integrate all elements.

Finally, equestrians are an important user group for the river. Special attention should be paid to opportunities to connect existing equestrian facilities, and create new alongside or integrated with the multi-use path.

Multi-Use Path Enhancements



Existing and New Multi-Use Path Improvements

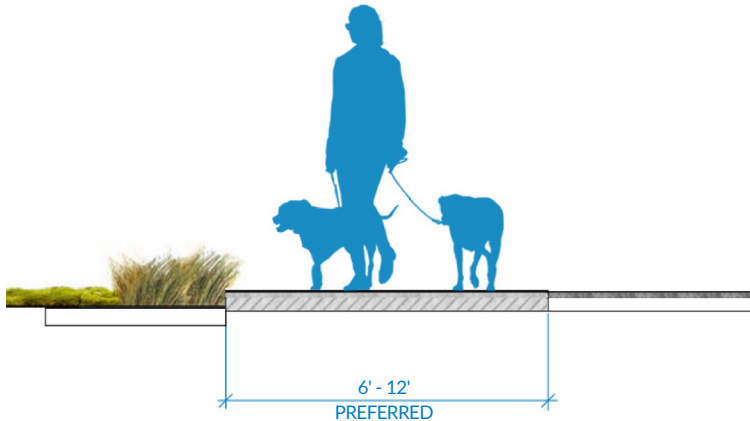
Multi-Use Path: Access for All Modes



Illustrative Path Enhancements Diagram

Wherever possible, the multi-use path should provide access and connectivity for the three prime modes of mobility: pedestrian, bicycle, and equestrian. Further, this multi-use path will enhance connectivity by providing opportunities to develop secondary paths branching into communities found along the river.

Multi-Use Path: Pedestrian Path



Objective

The pedestrian path is a clear-way designed to accommodate the specific speed and surface needs of pedestrian users. Wherever possible, it should be designed as a pedestrian-only lane or path that is distinct from the adjacent paths. A wider path eases passage between pedestrians moving in opposing directions.

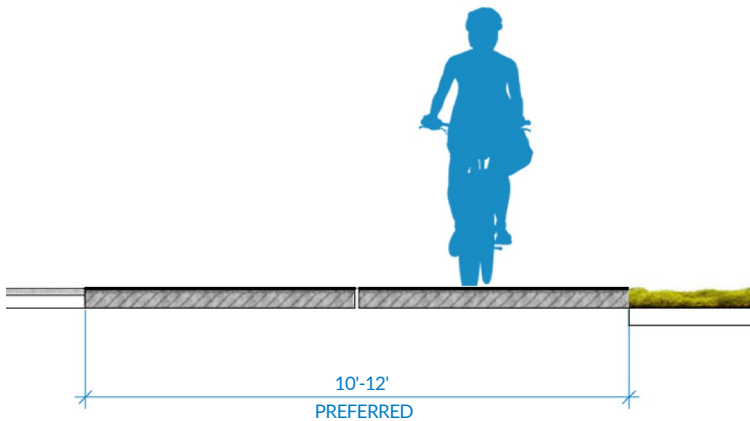
Design Criteria

- Minimum width 6 feet, 10-12 feet preferred
- Maximum slope 5% wherever possible
- Lane delineations and pavement markings when adjacent to bike path
- Guardrail at slopes and drops

Adjacencies

- When the pedestrian path adjoins the bicycle path, a painted 2 foot shy zone is preferred. If there is insufficient room, the two paths should be separated by a simple painted line.
- When the pedestrian path adjoins an equestrian path, a 3 foot shy zone should be provided whenever possible. An equestrian-friendly barrier can provide additional safety.
- The pedestrian path is generally paved. It can also be constructed compacted decomposed granite, though paved paths ease maintenance.

Multi-Use Path: Bicycle Path



Objective

The bicycle path is a designated clear-way designed to safely accommodate the specific speed and surface needs of bicycle users. To be successful, they must be clearly marked and designed for varying degrees of ability. There should be lanes for both directions that are free of obstructions. At significant waypoints and destinations bike racks should be installed.

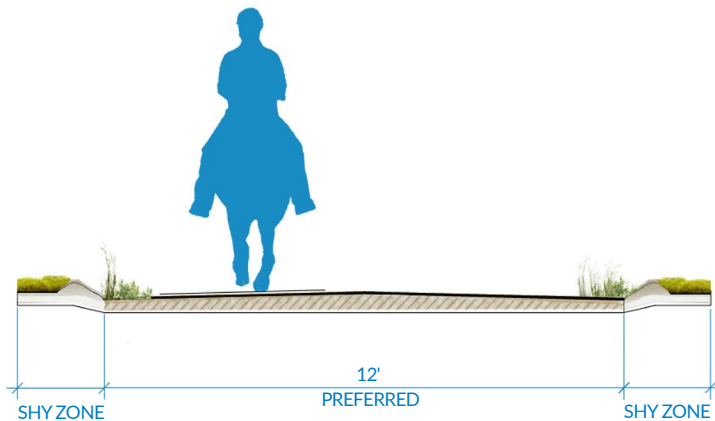
Design Criteria

- Wherever possible width 5 feet each direction, 6 feet preferred, for a total of 10-12 feet.
- Lane delineations should separate each direction.
- Lane markings should conform to California Manual on Uniform Traffic Control Devices.

Adjacencies

- When the bicycle path adjoins a pedestrian path, a 2 foot shy zone is preferred. Lane markings should separate paths.
- When the bike path adjoins an equestrian path, a 3 foot shy zone should be provided whenever possible. An equestrian-friendly barrier can provide additional safety.
- When bike path adjoins with equestrian and pedestrian path, bikes should yield to slower moving traffic.

Multi-Use Path: Equestrian Path



Objective

The equestrian path is a designated clear-way designed to accommodate the speed, size, and safety needs of horses and riders. In an urban area, it is especially important to account for visibility, safety at crossings, grade changes, and potential conflicts with other path users such as pedestrians and cyclists.

Design Criteria

- Wherever possible width 6 feet plus 3 foot buffer on either side, 12+ feet plus vertical clear space preferred.
- Path surface should be free of obstacles and level. Compacted soft surface such as decomposed granite is preferred.
- 54 inch guardrail is preferred at grade changes, ramps, crossings, or other scenarios.
- Provide space for staging at bridge approaches.

Adjacencies

- 3 foot minimum separation from other modes, grade separated preferred. Where this is not possible, vegetation or a horse-friendly barrier is recommended.
- Particular care should be taken to separate equestrian modes from bicycle modes.

Multi-Use Path: Mixing Zones

Resolving Conflicts on the Multi-Use Path

Using signs, pavement markings, and other techniques will not only help orient path users, but also prevent dangerous conflicts. Where conflicts may occur, there are two main goals of the mixing zone. First, right-of-way should not be given priority to any particular user. Second, faster moving users along the path yield to slower moving users in the mixing zone.



Multi-Use Path: Environment and Landscape



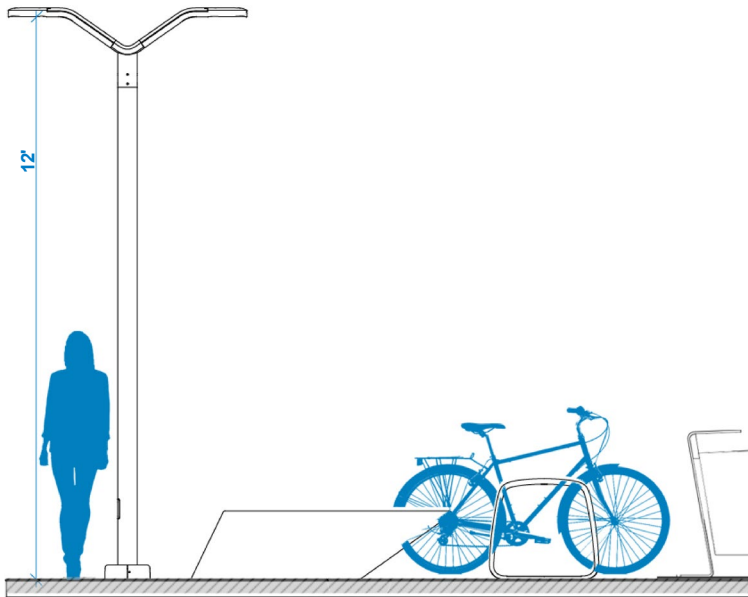
Objective

Improvements and additions to the multi-use path will consider multi-benefit environmental solutions. These may include green stormwater infrastructure, habitat enhancements, or simple landscape improvements.

Design Criteria

- Path and trail improvement projects will include landscape improvements as outlined in the LA River Master Plan Landscaping Guidelines and Plant Palettes. These may vary in scope and scale, but will seek to increase the amount of plant cover as well as contribute to the character of the river corridor.

Multi-Use Path: Amenities



Objective

The provision of amenities such as lighting, seating, trash receptacles, and bicycle parking is critical to creating a consistent, comfortable, safe, and welcoming experience for users along the full length of the Lower Los Angeles River. Not all stretches of the multi-use path will have the space to accommodate the full suite of amenities; when this is the case, priority should be given to lighting. Consideration should also be given to maintenance, both in terms of product selection and placement.

Design Criteria

- Lighting, seating, trash receptacles, and bicycle parking designs should be selected to reflect a common identity for the length of the Lower River, with some variation based on individual community desires.
- All furnishings should be high-quality and durable.
- Pedestrian lighting should range between 12-14 feet high.

- Lights may be wired, solar, batter powered, or otherwise powered as appropriate.
- Low-scale lighting may be considered where appropriate.

Adjacencies

- Wherever possible, the full group of elements should be clustered for ease of access and maintenance.
- Multi-use path access points, signature project areas, and other wider gathering spots should house all amenities listed.
- Where the path area is not wide enough, priority should be given to lighting. Opportunities for seating and bike parking between access points should be explored for the comfort and safety of users.

Amenities: Site Furniture



Furnishings along the multi-use path, including seating, lighting, trash, cycling, and horse amenities, should be coordinated with a consistent palette to convey a sense of continuity along the full length of the river, while allowing for some variation in key community access points. Attractive design and ease of maintenance should both be considered when selecting a family of site furniture.

Shade on the Lower LA River



Simple shade structures provide protection from the sun and will be key to increasing comfort along the multi-use path. They should be paired with seating or other activity areas and not be placed or attached so as to impact the levee structure.

Finding Your Way on the Lower LA River



A robust system of signage provides consistent orientation and identity along the length of the river with some variation allowed for the different cities along the river.

Templates (Multi-use Path Enhancement) Next Steps

Additional required analyses and next steps for the Multi-use Path Enhancement template include:

- LA River Master Plan Landscaping Guidelines and Plant Palettes should be applied for all landscaping and plantings,
- LA County Trail Signage Handbook should be applied for all paths that are enhanced or added.
- Structural analyses of all new and expanded paths should be performed,
- Geotechnical evaluations for all new and expanded paths should be conducted,
- Thorough investigation of land records identifying easement holders, including the assessment of land rights should be conducted, easement fees must be identified, and approval from identified easements should be obtained,
- Permitting requirements, including through USACE and LACFCD, should be determined,
- An Environmental Impact Report/Statement (EIR/EIS) may be required to assess any potential environmental impacts, and
- Key studies to assess the potential for environmental and habitat restoration should be performed, and local and native vegetation should be planted to support the native habitat and restore the natural and historical ecosystem wherever possible.

To meet the goals and objectives of the Plan, the Working Group recommends that cities, non-profit organizations, and developers work together to realize the maximum benefits from revitalization investments while stabilizing the surrounding community, and that the community stabilization toolkit be considered during project implementation. The Plan acknowledges that each city has authority over its respective land use planning policies and guidelines outside the river channel and that each city shall individually determine which tools provide the greatest practical benefit for implementation within its jurisdiction.

The community stabilization toolkit includes:

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CHANNEL ENHANCEMENTS



Channel Enhancements

The literal centerpiece of the river is the 19-mile long channel that conveys river flow from the upper reach to the outflow in Long Beach. Already along the river there are areas of very distinct character - in some places it is simply a monolithic gray line, while in others it has a soft bottom and has become quite green. While there are numerous very real constraints to making significant structural changes to the channel, the sheer size of this element provides broad opportunities for enhancements that will change the way the river is perceived. As with other signature templates, this change will not happen all at once but will be incremental over time as different projects come to the forefront.

Two primary themes guide this template, and should serve as a reference for future projects focused on the channel:

River Channel Access

Enhancements are a prime opportunity to open access to the channel itself and create an entirely new way to experience the river.

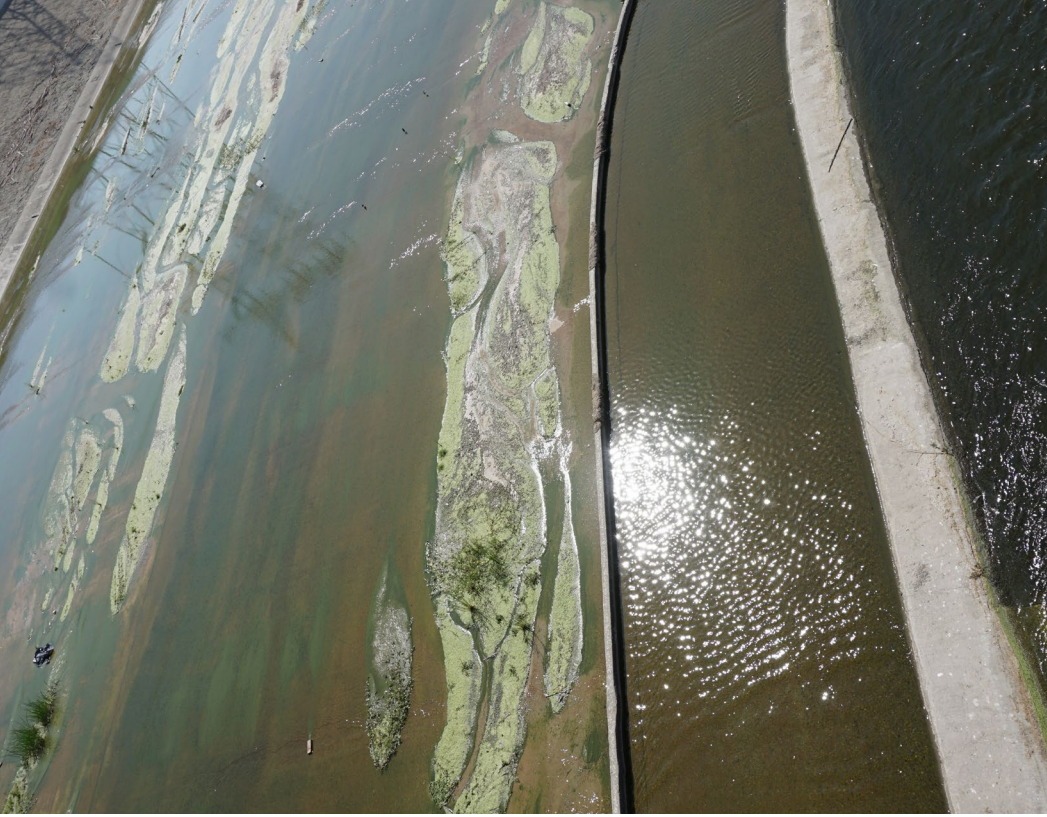
Visual Interest

Changes to the channel bottom as well as banks can contribute to a new kind of visual interest in the river in many ways. These opportunities range from art, to texture, opportunities for plant growth that may only last for one season and be washed away by the next flood event. Each of these interventions can also serve to support the unique sense of identity of the river itself, as well as the individual communities in which these projects will happen.

Existing Conditions

Channel conditions vary along the length of the river. In the northern stretch, from Vernon to Long Beach, the concrete bottom and banks are mostly intact. In these areas, the bank is either vertical or v-shaped, with little to no public access into the channel. A low-flow channel contains dry weather flow, and in some places volunteer vegetation follows cracks in the concrete.

Closer to the mouth of the river, primarily in Long Beach, concrete gives way to a soft bottom condition. Banks here are primarily v-shaped, with little to no public access into the channel. There is a much higher volume of water, and better conditions for permanent vegetation. The lower reach of the river already provides habitat to birds and other aquatic wildlife.



Concrete Channel Enhancements

Description

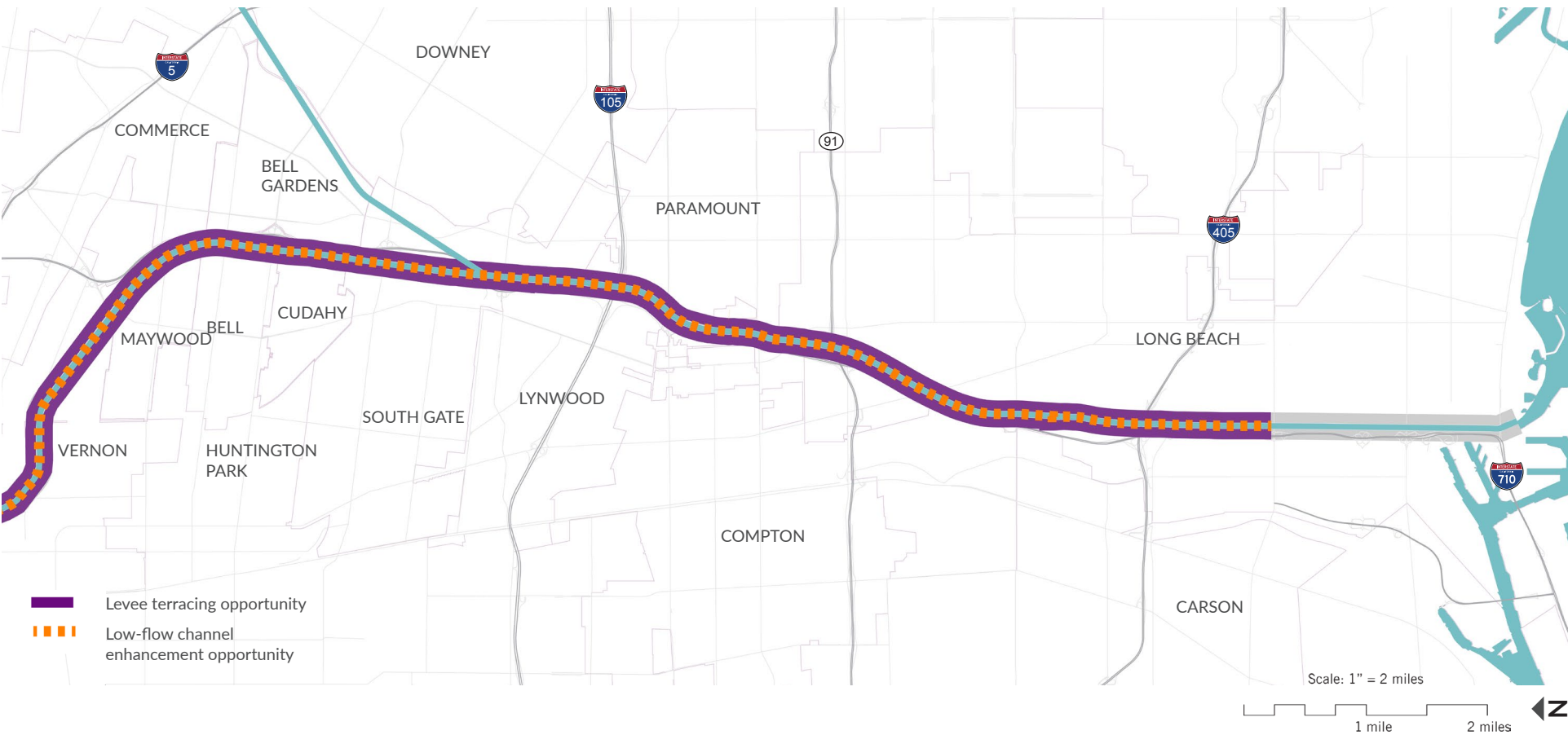
Along the length of the river there is a continuous opportunity for site-specific changes and enhancements to the concrete river channel. While some sections may not be changed drastically (or at all), others might be reconfigured in order to improve hydraulic function, stormwater management, habitat provision, safe public access, or a combination of these goals.

The two primary elements subject to modification are the low-flow channel at the center of the river bed (except for soft-bottom conditions), and the side levees or river banks. With any proposed modification, hydraulic flow modeling would be completed to minimize impact on river flow and safety. All improvements and modifications should be leveraged as an opportunity to create unique, river-specific open spaces for the public to enjoy.

Physical Components

- Multi-Use Access Ramps
- Levee Terracing
- Low-flow Channel Modifications
- River Overlooks

Concrete Channel Enhancement Map



Channel Enhancements: Accessing the River



Channel Enhancements Illustrative Rendering

Channel enhancements may be as simple as texturing parts of the concrete bottom, or as complex as creating meandering levee terraces. Overall the goal is to create a series of strategic places that will improve visual interest, habitat, and public accessibility, as well as safety and comfort in the river channel.

Channel Enhancements: Multi-Use Access Ramp



Objective

The flat bottom and generally dry nature of large portions of the river provide unique opportunities for public access to the river bed in non-rain conditions. Key access points, high-profile project sites, and other unique opportunity areas should consider the feasibility of pedestrian and bike access ramps across the face of the levee. This strategy is most appropriate in concrete-bottom sections.

Design Criteria

- Any changes to the levee in order to provide an access ramp should be mitigated by further channel modifications to minimize impact on river flow.
- ADA guidelines should be followed wherever possible.
- Ramps should be paved with asphalt or other durable, non-slip surface.
- Markings and/or signage for entrance and exit to the river should be highly visible to ensure the safety of users.
- Ramp access to be controlled by a gate or temporary bollard system to close access during storm events or other unsafe conditions.

Channel Enhancements: Levee Terracing



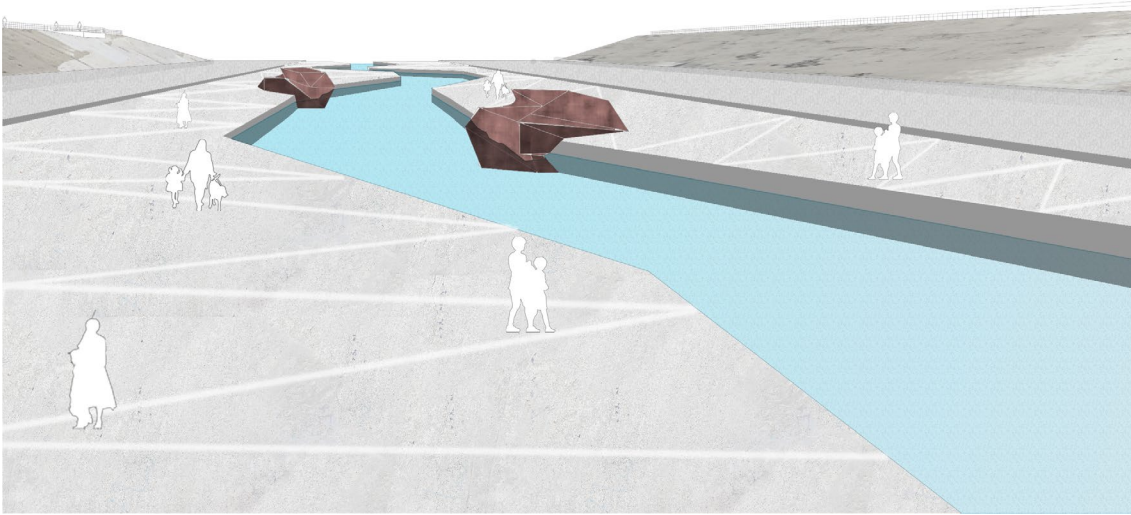
Objective

Changing the profile of the levee system is a prime opportunity for the addition of public open space as well as habitat area along the length of the river, as these elements often cannot be safely included in the river bottom or levee top. Terraces should be considered as places to rest and view the river, spaces for community activities, opportunities for habitat creation and other environmental improvements, as well as potential placement of stormwater capture and detention. Site-specific considerations and constraints will dictate what is appropriate, but any modification to the levee should be considered as a multi-benefit solution.

Design Criteria

- Any changes to the levee for terracing purposes should be mitigated by further channel modifications to minimize impact on river flow.
- ADA guidelines should be followed wherever possible.
- Community input may guide design and programming of terracing to contribute to the sense of community identity in each portion of the river.
- All landscape enhancements will be consistent with the LA River Master Plan Landscaping Guidelines and Plant Palettes.

Channel Enhancements: Low-Flow Channel Modifications



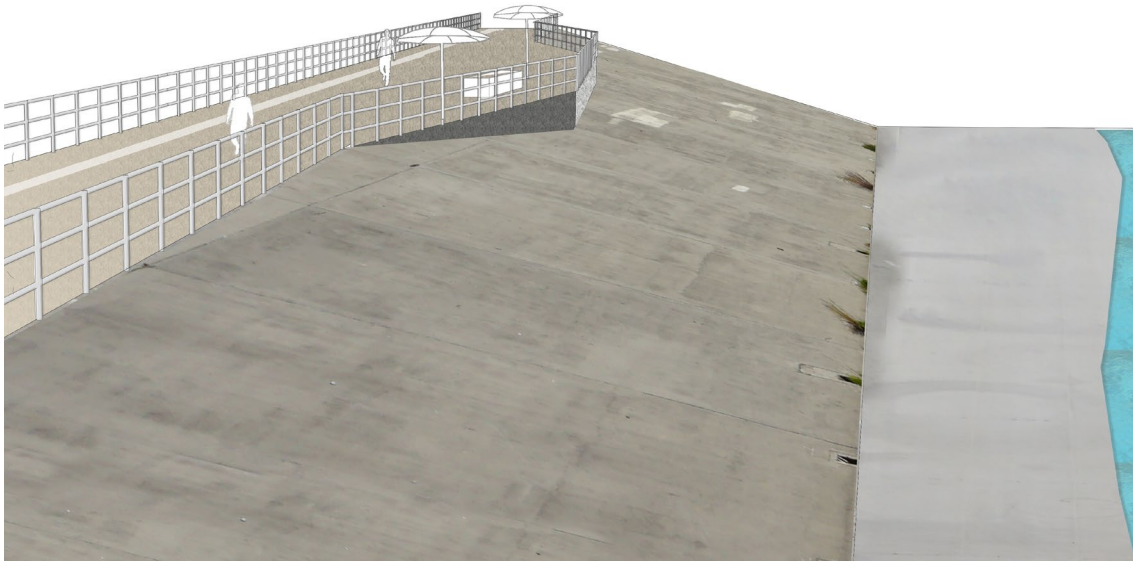
Objective

The low-flow channel currently serves to contain river flow to the center of the channel in dry periods. Future modifications to the low-flow channel should be designed to create visual interest, enhance hydrological function, and provide opportunities for environmental and habitat improvements, or some combination of these goals. Not every section will be modified, and not every strategy will be applied to each modification; site- and design-specific solutions should be created on a case-by-case basis. A series of potential modifications have already been modeled for safety and function as part of this Plan and can be used in design solutions as appropriate.

Design Criteria

- Modifications may include: widening, “meander” or course modifications, addition of “pockets” for silt collection and volunteer vegetation, extrusions that may serve as seating or viewing, and similar.
- Any modification should meet river flow goals, or have a plan to mitigate any reduction in flow levels.
- All additions to the low-flow channel (such as extrusions) should be permanent and resistant to erosion or being swept away during storm events.

Channel Enhancements: River Overlooks



Objective

The ability to interact with the river at many different scales and in many different ways is central to the quality of experience of visitors to the river. In areas of interest, such as habitat enhancement or public art, space should be created along the multi-use path for users of all modes to rest and contemplate the river.

Design Criteria

- Adjacent to the multi-use path.
- Minimum 10 feet width, wider where possible.
- Include site furnishing, especially lighting, seating, and trash receptacles.
- Modifications to the levee bank must not significantly change the hydraulic function of the river channel. Major changes should be modeled to ensure proper mitigation can be provided.

Channel Enhancements: Shade on the Lower LA River



Simple shade structures provide protection from the sun and will be key to increasing comfort along the multi-use path. They should be paired with seating or other activity areas and not be placed or attached so as to impact the levee structure.

Templates (Concrete Channel Enhancements) Next Steps

Additional required analyses and next steps for the Concrete Channel Enhancements template include:

- LA River Master Plan Landscaping Guidelines and Plant Palettes should be applied for all landscaping and plantings,
- Structural analyses of all new and improved access ramps should be performed,
- Geotechnical evaluations for all new and improved access ramps and proposed terracing should be conducted,
- Impacts on shorebird habitat due to widening of the low flow channel upstream should be determined,
- Water demand analysis for “volunteer” vegetation in the low flow channel should be conducted,
- Water demand analysis for terracing and vegetation on the terrace steps should be determined,
- Hydraulic modeling of potential modifications to the channel should be conducted,
- Thorough investigation of land records identifying easement holders, including the assessment of land rights should be conducted, easement fees must be identified, and approval from identified easements should be obtained,
- Permitting requirements, including through USACE and LACFCD, should be determined,
- An Environmental Impact Report/Statement (EIR/EIS) may be required to assess any potential environmental impacts, and

- Key studies to assess the potential for environmental and habitat restoration should be performed, including adding vegetation to the river and restoring the ecological function of the river, while still maintaining the primary function—reduce flood risk for the communities adjacent to the river. Local and native vegetation should be planted to support the native habitat and restore the natural and historical ecosystem wherever possible.

To meet the goals and objectives of the Plan, the Working Group recommends that cities, non-profit organizations, and developers work together to realize the maximum benefits from revitalization investments while stabilizing the surrounding community, and that the community stabilization toolkit be considered during project implementation. The Plan acknowledges that each city has authority over its respective land use planning policies and guidelines outside the river channel and that each city shall individually determine which tools provide the greatest practical benefit for implementation within its jurisdiction.

The community stabilization toolkit includes:

- Community Benefits Agreements
- Inclusionary Housing Policies
- Locally Owned Business Support
- No Net Loss Housing Policies
- Rent Control Ordinances
- Workforce Development
- Community Land Trusts



COMPLETE STREETS AND WELCOMING



Complete Streets and Welcoming

Description

A major component of a consistent, safe, welcoming experience of the river is the ability to navigate to and between the river and surrounding communities seamlessly. Strengthened community identity and wayfinding, as well as physical improvements to the street network leading up to the river, can enhance this access. Welcoming strategies will direct the community to the river and also draw trail users to surrounding retail districts and points of interest (lateral connections). Complete streets and special “river streets” also play crucial roles, both in creating a safe environment for river visitors in all modes of transportation, and in announcing proximity to the river through design.

Existing Conditions

The street network surrounding the river has been developed to prioritize the movement of goods and people in vehicles. Most streets that provide access to or cross the river have high posted speed limits and 4-6 lanes of fast moving traffic with little to no safe accommodation for people traveling in any other mode. It is often unclear which routes will lead to river access points, and little to no identification of the river or the communities through which it flows.

The best examples of identity and safe access generally occur where the river is adjacent to a public park, though often times the access points themselves may be difficult to locate in the surrounding context (e.g., the south entrance to Dominguez Gap Wetlands).



Multi-Modal Access to the Lower LA River

Physical Components

Site-specific requirements will dictate which elements are necessary for each potential complete street and welcoming project, but elements that should be considered include:

Complete Streets Guidelines for Major Streets: Improvements to existing major streets in order to balance all modes of movement based on need and use, based on National Association of City Transportation Officials (NACTO) design guidelines.

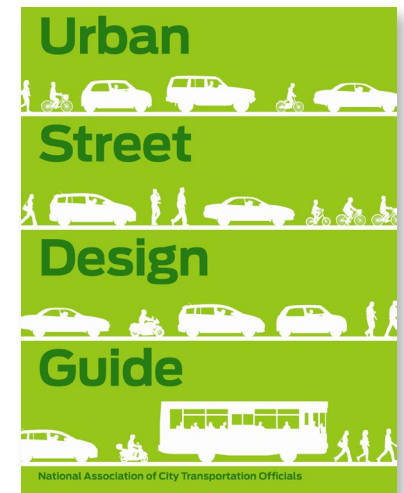
River Street Guidelines: Design concepts for streets that end at, but do not provide direct access to, the river.

Green Streets Guidelines: Some complete streets may also be green streets, integrating green infrastructure and stormwater management techniques.

Landscape and Environmental Improvements: All complete street improvements should consider the goals of the LA River Master Plan Landscaping Guidelines and Plant Palettes. The location, size, specific plant selection, and other details will vary based on street type and location and other site-specific factors.

A Wayfinding System: Includes direction and locational signs, maps, markers, etc., coordinated in design with the overall river brand strategy, and with a consistent plan for spacing and placement.

Interpretive Signage and Markers: Where appropriate, the signage strategy should also include educational materials about the river, the community, and other cultural or historical points of interest.

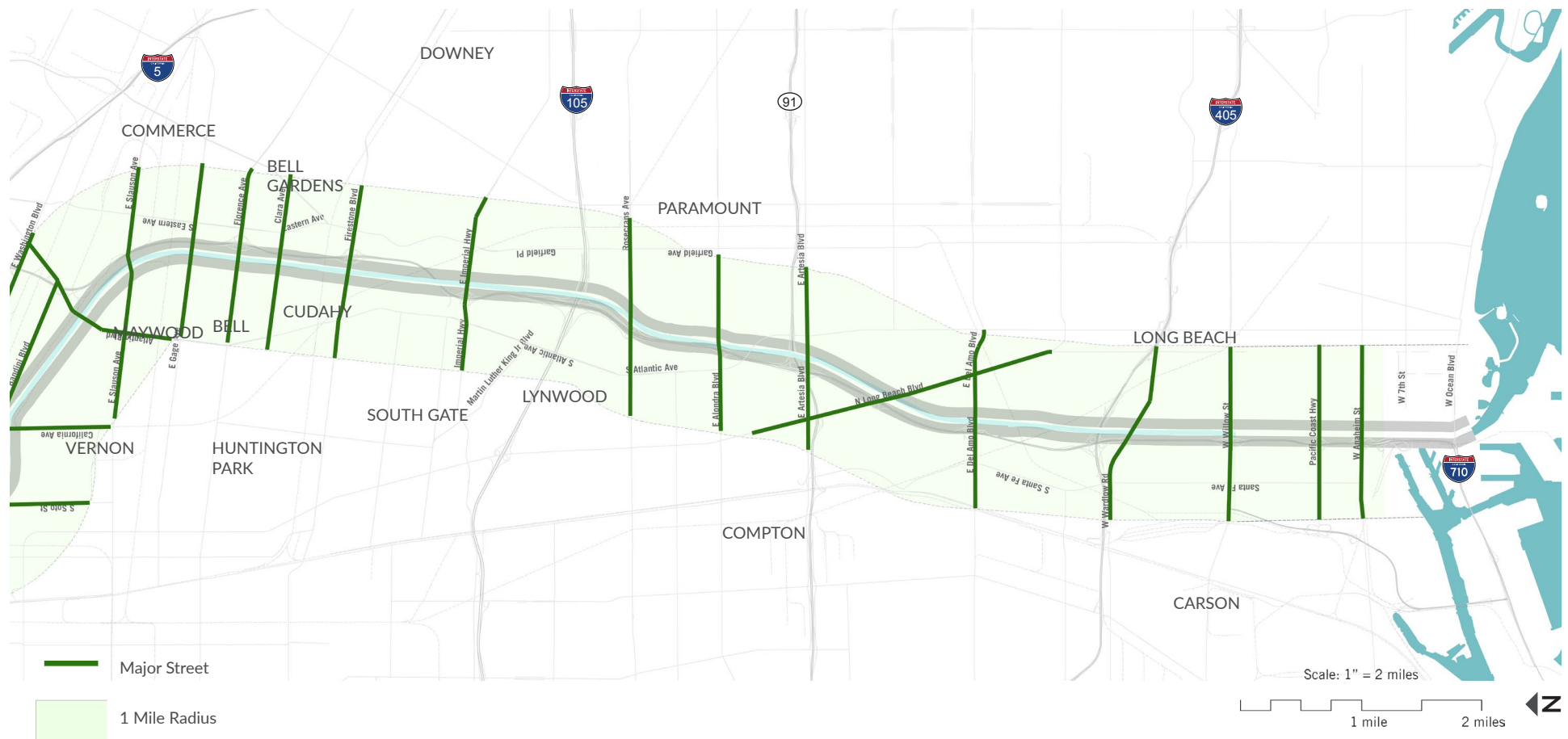


NACTO Urban Street Design Guide

Provides guidance for designing spaces where people can safely walk, bicycle, drive, take transit, and socialize

Complete Streets Opportunities Map

Potential major complete streets are indicated below, but every street within the one mile study area should be evaluated as potential river streets or green streets. Community input should be sought to determine priority streets and desired street character.



Complete Streets: Major Streets



Complete Streets: Major Street Illustrative Rendering

Street updates that are specific and respond to the needs and desires of each community can come together to create a safe and welcoming mobility network, that also expresses the unique identity of the river itself and the communities around it.

Objective

A “complete street” is one that is designed to safely accommodate users of many modes. Most major streets around the river currently prioritize cars and trucks over walking and cycling, while most river visitors eventually end up on foot, bicycle, or horse. Depending on the role of the street, the balance of space within the right-of-way dedicated for each mode may shift, but safety and comfort are always the priority. Near the river, a network of complete streets will guide community residents and other visitors safely to and from river access points and across the river.

Design Criteria

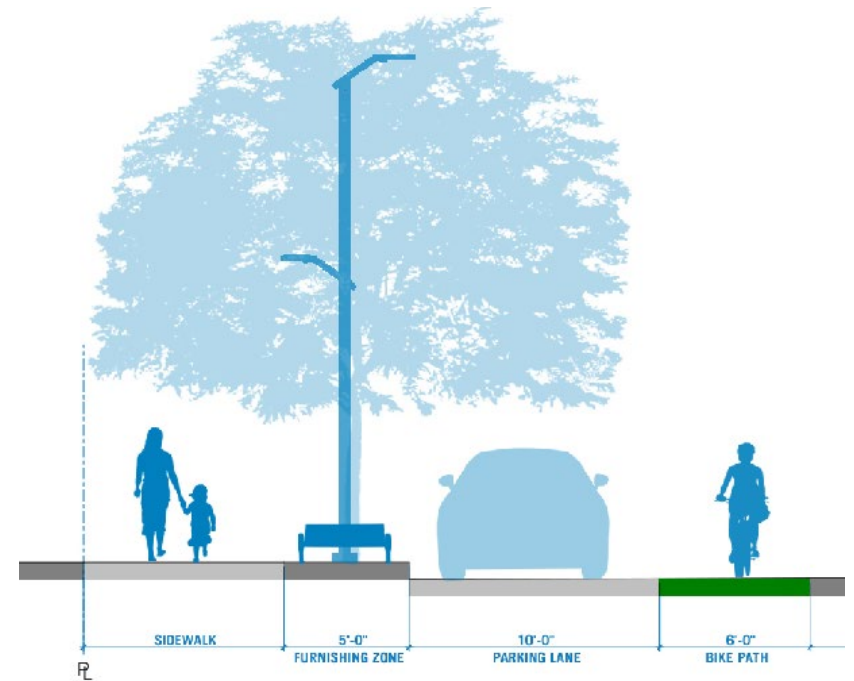
- Community input should be sought to determine priority streets and desired street character.
- A transportation study should be consulted before any project to understand the specific needs of that street.
- Any street designated as a Complete Street will have facilities for pedestrians, bicyclists, and vehicles. Where appropriate, equestrian trail should also be considered.
- Bike lanes should be a minimum 5-ft width per direction, and fully separated from vehicular traffic by a curb or barrier. When this is not feasible, a painted stripe and/or lane color should delineate the lane.
- Pedestrian sidewalks should be a minimum 60-in wide, without obstruction and ADA compliant where possible.
- Vegetation and furnishing zones should be provided to buffer pedestrians and cyclists from vehicular traffic.
- Lighting, seating, and other amenities should be provided in key locations for user comfort and safety.
- Reference NACTO Urban Street Design Guide and Urban Bikeway Design Guide for alternative layouts and precedents.

Complete Streets: Bicycle Lanes on Major Streets

The higher-capacity major streets should have designated and clearly marked bicycle lanes. Depending on the specific needs of the street and community, however, these lanes may be provided in a number of different ways. A mobility study and community visioning should help determine the physical need and street character goals for each street project. Reference NACTO Urban Bikeway Guide for alternative layouts and precedents.

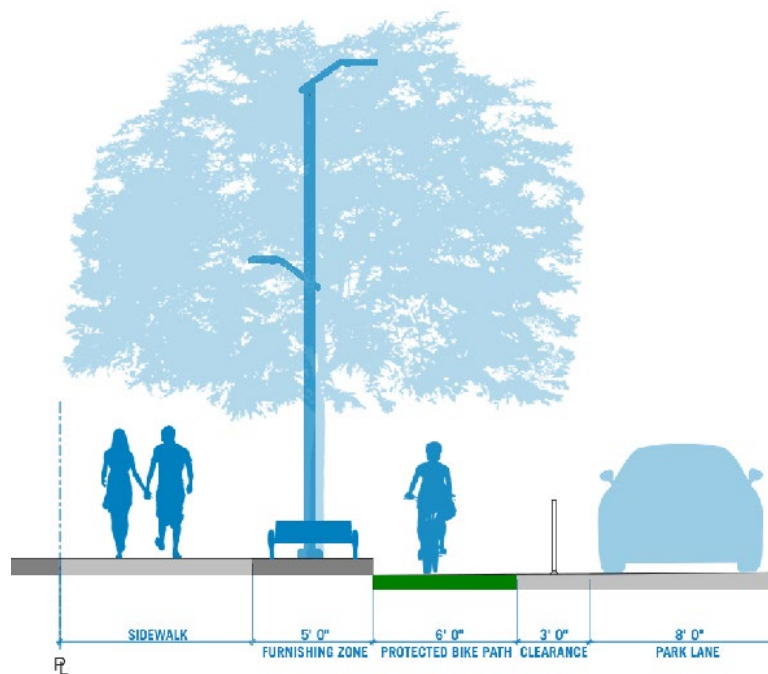
Options for bike lanes on major streets include:

- On-street striped bike lane
- On-street buffered bike lane
- Off-street buffered cycle track



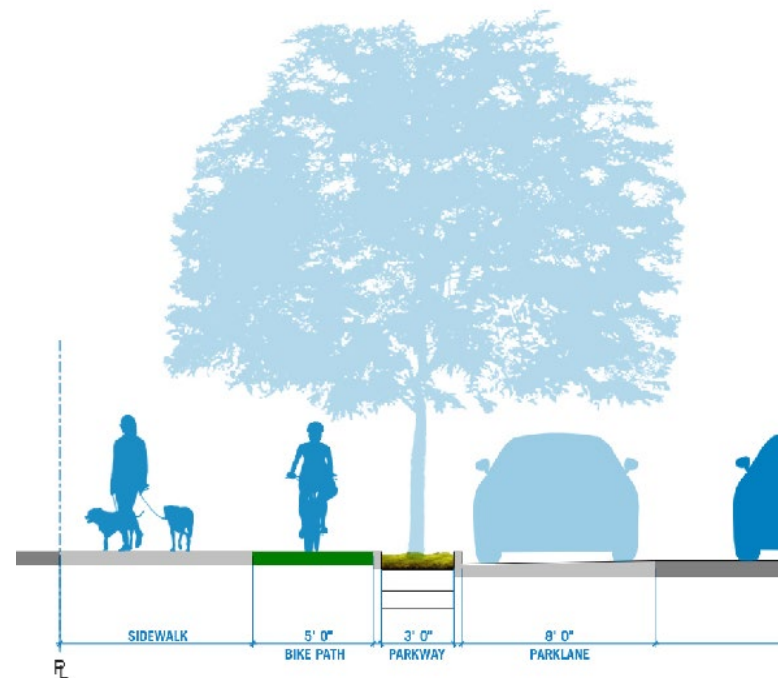
On-Street Striped Bike Lane

On-street striped bike lanes are in the street right-of-way, and are either directly adjacent to the curb, or between the parking lane and vehicle travel lanes, if there is on-street parking. These lanes should be clearly marked with a painted stripe. A solid fill of a color, such as green, is preferred. Lanes should be wide enough to allow two cyclists to pass comfortably.



On-Street Buffered Bike Lane

On-street buffered bike lanes are in the street right-of-way, directly adjacent to the curb. They are separated from parking lanes and vehicle travel lanes by a shy zone and physical barrier such as a curb or set of bollards. These lanes should be clearly marked with a painted stripe. A solid fill of a color, such as green, is preferred. Lanes should be wide enough to allow two cyclists to pass comfortably, to prevent faster riders from veering into vehicle travel lanes.



Off-Street Buffered Cycle Track

Off-street buffered cycle tracks should be level with the pedestrian sidewalk, out of the street right-of-way. They are separated from vehicular traffic by both a grade change and a buffer such as a curb, vegetation, or other street furnishing. These lanes should be clearly marked with distinctive pavement, solid paint, or other methods. Lanes should be wide enough to allow two cyclists to pass comfortably.

Complete Streets and Welcoming: River Streets

Objective

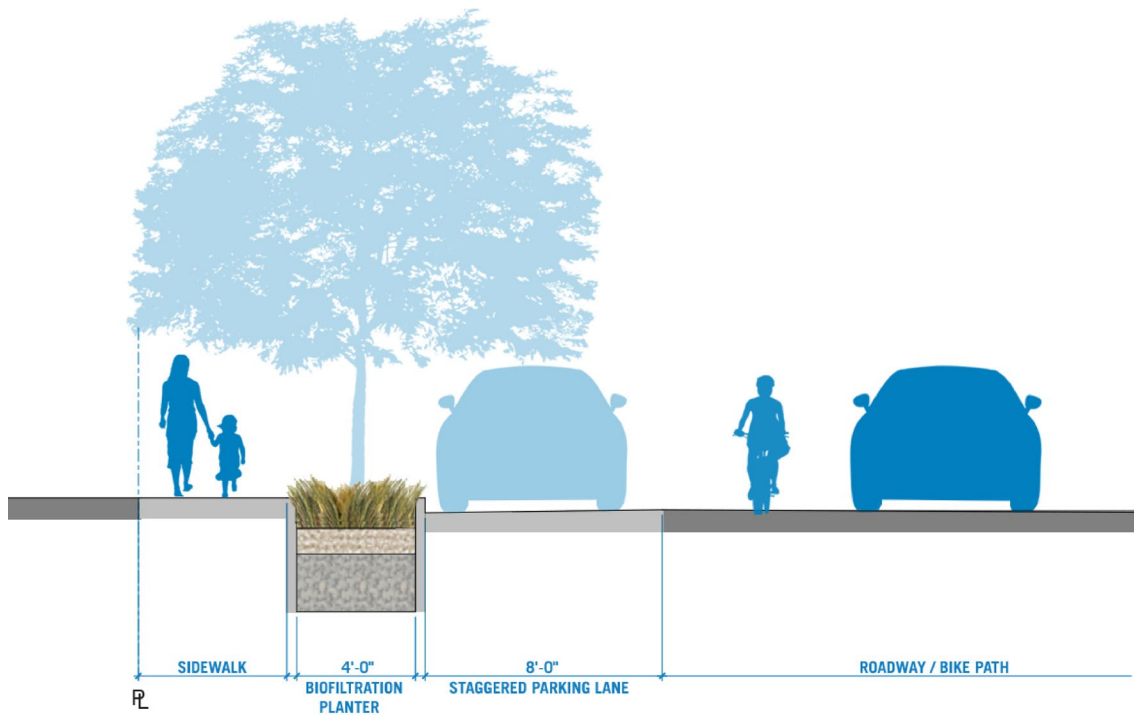
For the purposes of this study, a “River Street” is one that abuts the river, but does not provide direct public access to either the multi-use path or the river itself. These streets are either parallel or perpendicular to the river. While they present a challenge in that the lack of river access is not always clear to visitors, they also provide a significant opportunity for the expression of a river-specific community identity, as well as other aesthetic and safety enhancements.

Design Criteria

- Community input should be sought to determine priority streets and desired street character.
- A transportation study should be consulted before any project to understand the specific needs of that street.
- Signage and other markings indicating a route to the river should be clearly visible.
- Where appropriate, streets parallel to the river should be designed as shared space streets (see Cudahy River Road Signature Concept).
- Public art and space for community gatherings and events should be incorporated where appropriate.



Complete Streets and Welcoming: Green Street Approaches



Objective

Streets are not only a means to convey people from one place to another, they are places within neighborhoods, and they serve as part of the stormwater infrastructure of an area. A “green street” is one that is designed with stormwater infrastructure or ecological function in mind. Making streets around the river functioning components of a sustainable stormwater system can contribute to water quality enhancement as well as community identity. Depending on the scale and function of the street, there are many possible variations of the green street, but all should have the same function - to slow and filter stormwater, to add to the environmental function of the street corridor, and to reflect the desires of the surrounding community.

Design Criteria

- A stormwater assessment should be consulted prior to the design of any selected street to ensure technical needs are met.
- Community input will guide selection of priority streets and desired street character.
- Reference NACTO Urban Street Stormwater Guide for alternative layouts and precedents.

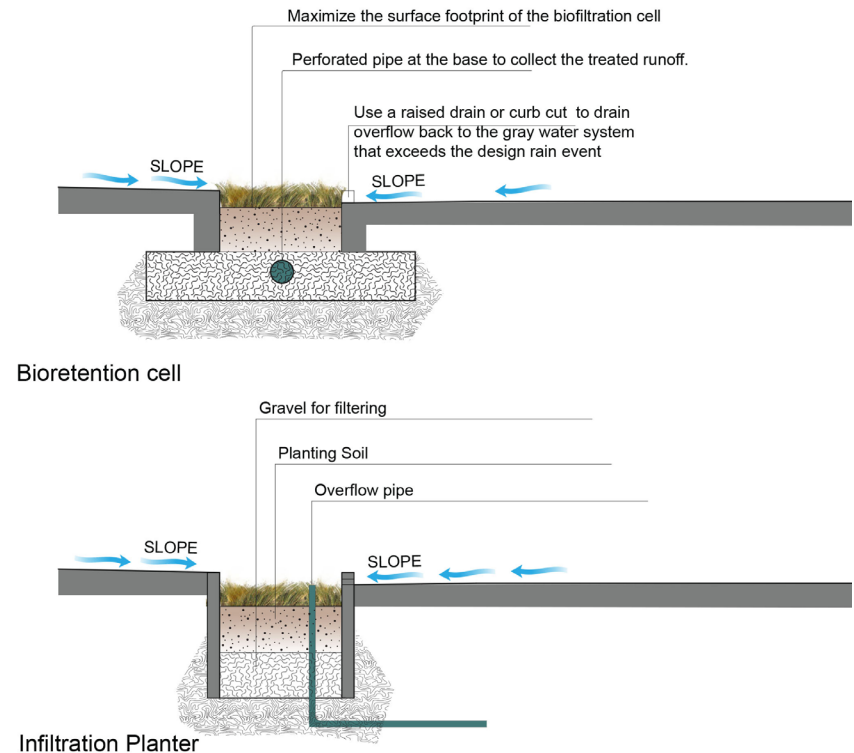
Complete Streets: Green Approaches to Stormwater Management

There are many different components to a successful green street, ranging in intensity and investment level. One of the most impactful for larger streets and systems is a series of bioswales that can capture stormwater runoff, and either slow the rate at which it enters the municipal storm sewer, or divert it from the municipal storm sewer all together.

Three typical bioswale configurations may be used, depending on site-specific conditions:

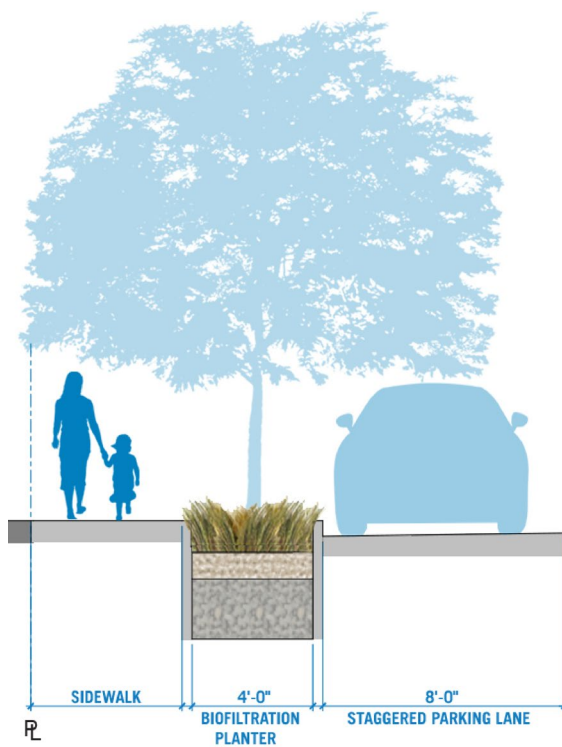
1. Infiltration planter with trees
2. Infiltration planter without trees
3. Planter with bioretention

NACTO Urban Street Stormwater Guide can provide additional alternative layouts and precedents.

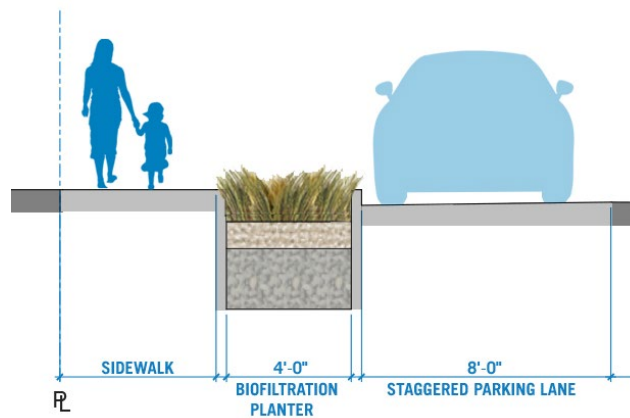


Bioretention vs Infiltration

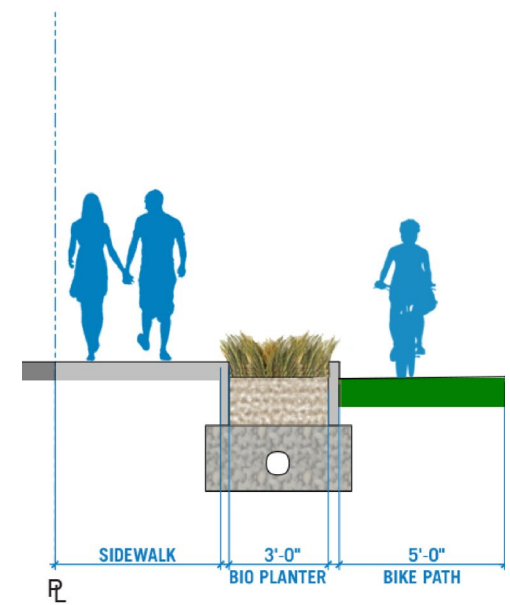
Bioretention is the process of slowing the entrance of runoff into the municipal storm sewer by retaining it in a swale. It filters through layers of vegetation, soil, and gravel before entering a pipe. Infiltration, on the other hand, aims to bypass the storm sewer altogether. Runoff is captured in the swale, where it filters through vegetation, soil, and gravel, before returning to the ground water table. Infiltration swales often require much more space than bioretention swales.



Bioinfiltration Planter with Trees



Bioinfiltration Planter without Trees



Bioretention Planter without Trees

Complete Streets and Welcoming: Wayfinding and Welcoming

Objective

A comprehensive, coordinated system for signage and markings will improve legibility of river access points and routes, and celebrate the identity of both the river and the communities around it.

Design Criteria

- All wayfinding and welcoming signage and markings should be coordinated through a river-wide strategy to confirm a consistent identity.
- River access points (both on the multi-use path side, and on the community side) and other decision making points should be prioritized for ease of orientation.
- Points of interest or educational elements should include interpretive signage, coordinated with the river branding system.
- Adhere to all applicable codes and regulations, including permitting with the proper jurisdictional municipality.



Templates (Complete Street/Connectivity+Wayfinding/Signage) Next Steps

Additional required analyses and next steps for the Complete Streets/Connectivity + Wayfinding/Signage template include:

- LA River Master Plan Landscaping Guidelines and Plant Palettes should be applied for all landscaping and plantings,
- Structural analyses of all new and expanded paths should be performed,
- Geotechnical evaluations for all new and expanded paths should be conducted,
- Thorough investigation of land records identifying easement holders, including the assessment of land rights should be conducted, easement fees must be identified, and approval from identified easements should be obtained,
- Permitting requirements, including through USACE and LACFCD, should be determined,
- The collection capacity and storage of stormwater should be determined for complete streets and green streets,
- Soil, permits, leadership for potential community garden at street ends should be established,
- Soil remediation analyses to determine extent of any contamination should be conducted,
- An Environmental Impact Report/Statement (EIR/EIS) may be required to assess any potential environmental impacts, and

- Key studies to assess the potential for environmental and habitat restoration should be performed, and local and native vegetation should be planted to support the native habitat and restore the natural and historical ecosystem wherever possible.

To meet the goals and objectives of the Plan, the Working Group recommends that cities, non-profit organizations, and developers work together to realize the maximum benefits from revitalization investments while stabilizing the surrounding community, and that the community stabilization toolkit be considered during project implementation. The Plan acknowledges that each city has authority over its respective land use planning policies and guidelines outside the river channel and that each city shall individually determine which tools provide the greatest practical benefit for implementation within its jurisdiction.

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