

Revisiting Riverscapes: Design for an Over-Engineered River Corridor

Problem Statement: The Los Angeles River was covered in concrete in the 1930's to help control flooding, yet it caused a disconnection between the city, people, and river. How can designers create a riverscape that can contain storm water but also provide the city of Los Angeles with a pedestrian friendly blue

Case Study Design Matrix

Thesis Narrative:

Blue Spaces - areas along rivers, lakes, oceans, etc... - in Urban Areas are believed to improve pedestrian physical and mental health. Giving citizens an opportunity to escape from the city and interact with nature. Whether that is going out for some exercise or simply to get away from the noise and seek solitude. Blue spaces offer these opportunities to any metropolis near a body of water.

Due to climate change, these lively locations are in danger of becoming disaster zones. Rising sea levels and stronger storm systems are causing these urban waterfronts, which were once destination draws of the city, to become neglected and underutilized spaces. The fear of the next big storm has caused people to put up barriers and walls. Protecting but also disconnecting themselves from the water's edge.

Instead of acting in fear and hastily cut off the relationship between the city and the waterfront. One should first explore the possibility of a resilient design. The ability to withstand large storm events, but also act as a gathering space for the surrounding community during fair weather.

Project			Flood Resiliency			Public Perception			
Name / Designer	Size	Location	Structural Materials	Planting Palatte	Flood Strategy	Active Recreation	Passive Recreation	Layout	Awards
Corktown Common / MVVA	16 ac.	Toronto, Ontario	Shelter materials include manmade materials (Steel, Polished Wood)  Natural Materials used on trails (Posts and Rocks)	Very Diverse planting palatte in both color and texture. 	Using an earth berm as a natural flood defense. Having a wetside that floods and a dry side that is safe during storm events 	A "natural" style playground creates an active space for recreation use 	Winding pathways allow for biking, walking and other forms of passive recreation. 	Biomorphic layout with very few straight lines, wandering paths. 	ASLA - Honor Award - General Popular Science - "Best of What's New" Award (2014)
Hunter's Point South Waterfront Park / SWA Balsey	10 ac.	Queens, New York	Modern manmade materials 	Grasses and wetlands planting along river, turf and grass on sports field 	Constructed wetland to help clean and store storm water 	Open sports field with unique seating 	Plenty of meandering pathways with low elevated pathways across constructed wetland 	Biomorphic layout with staggerig pathways 	Municipal Art Society of New York's MASTERworks Award for Best Urban Landscape (2019)
Louisville Waterfront Park / Hargreaves	85 ac.	Louisville, Kentucky	Brutalist / Minimalist concrete. 	Limited planting variation and very well organized in layout 	Long incline plane for Great Lawn. Slopes down to the waterfront but its high enough on the far side to keep water back. 	Kayaking and fishing, as well as larger events 	Plenty of walking and biking paths 	Overall grid layout with winding secondary paths 	Rudy Bruner Award for Urban Excellence (2013)
Smale Park / Sasaki	32 ac.	Cincinnati, Ohio	Modern materials for structure (swings)  Natural materials in playground space	Diverse planting in color and shape, plenty of flowering plants 		Unique water interaction features 		Winding paths and plays off surrounding roads and river 	
River Guadalupe Park / Hargreaves	3 miles	San Jose, Texas	Heavily concrete in the downtown area and becomes more natural as the park progresses out of the city. 	Lush plantings near the inner channel and sparse terraced planting on the river banks 	US Corps of Engineers flood control system. Terraced banks help hold back water a different levels 		Plenty of seating created using the terraced design along biking and walking paths 	Winding alluvial forms mimic the flow of the river 	
Renaturation of the River Aire / George Descombes	120 ac.	Geneva, Switzerland	Minimal structure with a steel / wire structure. Other structure also follows minimalist approach using concrete for seating along river 	Native riparian plantings prove effective in renaturation 	Letting the river flow naturally through the project and pick its own path to carve out the new flow 		Walking and biking paths with smaller gathering spaces that are closer to the river 	Grid / Natural layout. Created a grid of earth then let the river erode and create its own path 	Public prize at the 2016 Biennale of Landscape architecture
Summary			A mix between River Guadalupe and River Aire for the topography of the site. Smale Park and Sommon Corktown in structural materials.	River Aire and Common Corktown in the diverse and native plantings that create a very naturalistic aesthetic	River Guadalupe, Louisville Waterfront, and Common Corktown. Overall have water contained and design spaces that will be underwater	Fishing and Kayaking, as well as possible natural play areas	Biking, Hiking, Swings, and smaller contemplative spaces	Alluvial biomorphic layout	

Site Analysis



1856: U.S. Army officer, Edward Ord, was struck by the "willow hedges & zanjas, or ditches, of flowing water. ... All around us was a refreshing green, so grateful to the eyes and noses after the arid brown and yellow of the hot plains."



1868: and over three decades a series of dams, reservoirs, waterwheels, and covered pipes began to replace the system of urban water carriers that for decades had supplied the city and its

1905: Construction of LA Aquaduct made the LA river obsolete as a resource

1934: It took the catastrophic flood of New Year's Eve 1934 — which killed over 100 people, destroyed 198 homes, and caused millions of dollars in damage — for flood control to pass from local to federal control. In 1936 the U.S. Army Corps of Engineers



In 1940-1970, when the Army Corps declared the flood control project "finished,"

1769-1777: Spanish founded eight missions and 3 military bases. Discovered river and described as "good-sized, full-flowing river with very good water, pure and fresh" that flowed through a "very pleasant green valley."

1858: Los Angeles Water Works Company built a conduit that began with a 40-foot waterwheel

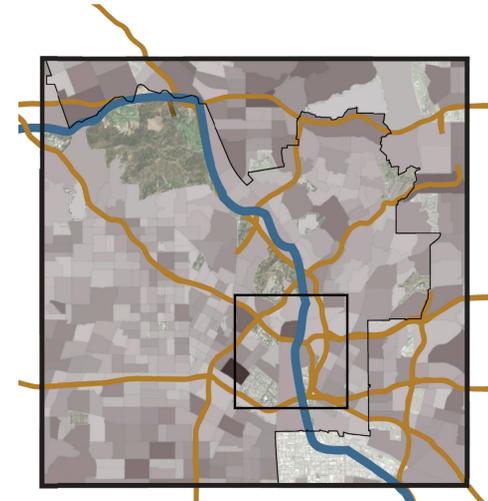
1880's: Emma Adams remarked upon the "seventy-five miles or more of canals ... forming the Los Angeles Irrigation System," and described the method by which water was conducted to the city's gardens, groves, and vineyards. Recalling the sensory delights of this network, she wrote: "the soft murmuring of water as it glides through the zangas [sic] in some of the beautiful suburbs of the city is sweet music to the ear, a happy voice sending out joy and gladness. Wherever it is heard are sure to be seen verdure, flowers, and fruit."

1914: Major Flooding after population soars from 33,000 to over 500,000. Building neighborhoods on the flood prone lots resulted in dratic damage. Causing perceptions of the river to turn for the worse.

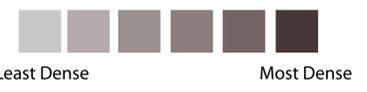
1938: The Rivers most damaging flood.



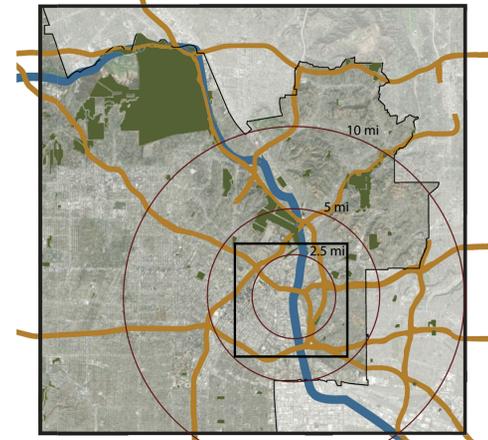
1992: Donald C. Tillman Water Reclamation Plant opened in Van Nuys. Although other plants had already been dumping treated wastewater, the Tillman Plant contributed an additional 20 million gallons of water per day



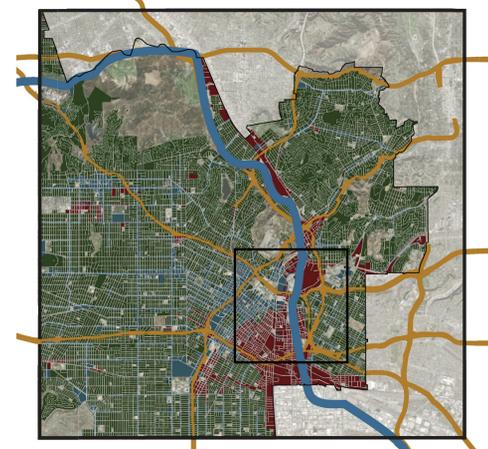
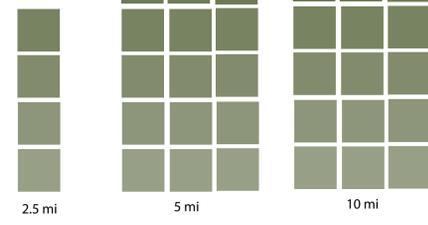
Population



The most area with the highest population density in the city has the fewest amount of open space within walking distance



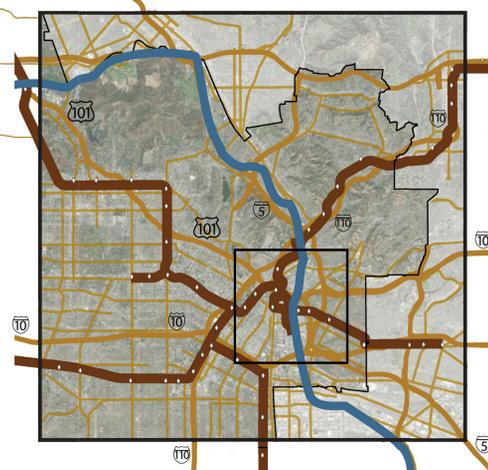
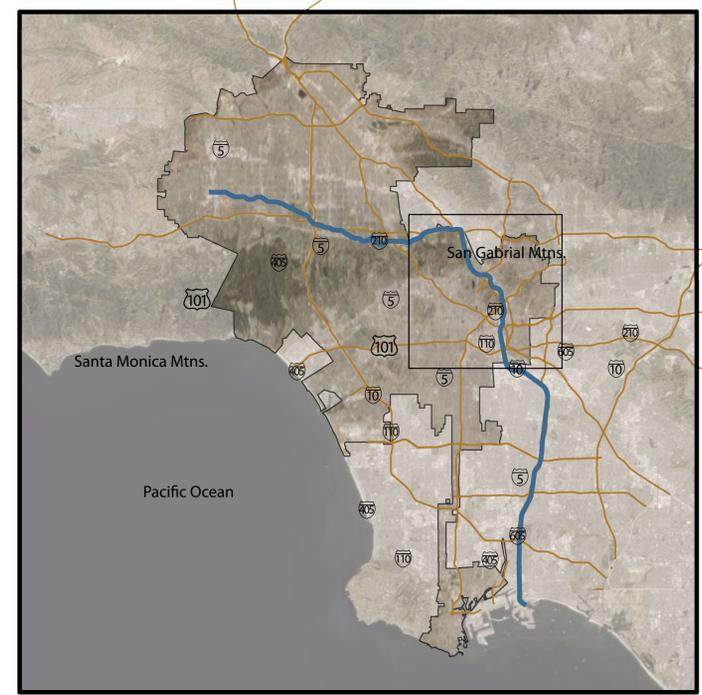
Parks



Zoning

- Residential
- Commercial
- Industrial

There is a line of industrial zoning that separates the East Side of Los Angeles from the Downtown Area.



Subway

- Subway Lines
- Subway Stations

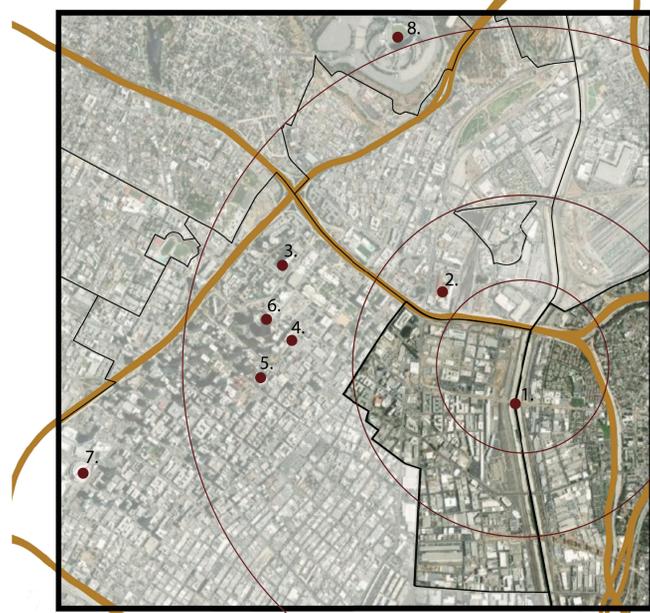
Site is located near the central hub of the entire subway system. Making it easily accessible to people



Site Selection:

The site for this project was determined by using GIS software to find the most suitable location along the Los Angeles River. The main attributes looked at in find the right location were accessibility, proximity to other parks, population, and surrounding communities. Reconnecting people to the river is the main aspect of this design so it was important to find a location that people from all over the city can get to. Located near the central hub of the entire subway system makes easy access for anyone using public transportation. There is additional roadways for people who are driving or walking. Proximity to other parks was also vital in finding which locations were in more need of revitalization. Population is similar to accessibility, finding a location with more people to increase the likelihood of people interacting with the river.

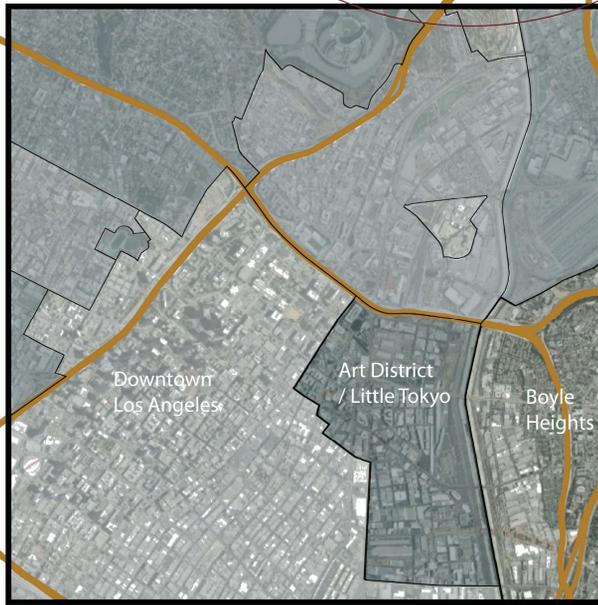
The goal was to find the location that can reconnect the most amount of people with the river. Whether that is a physical connection where the user comes and visits the site or a visual connection made from someone looking down from passing traffic.



Points of Interest

- 1. 1st Street Viaduct 
- 2. Union Station 
- 3. Disney Concert Hall 
- 4. Bradbury Building 
- 5. LA Theatre 
- 6. Grand Central Market 

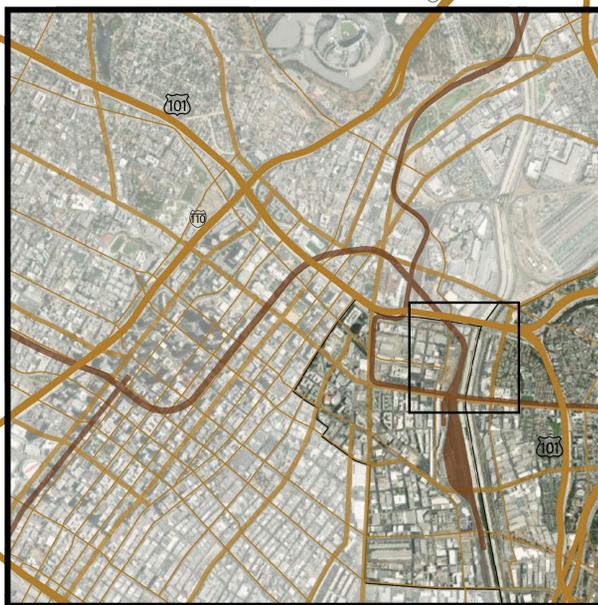
Neighborhoods



Art District

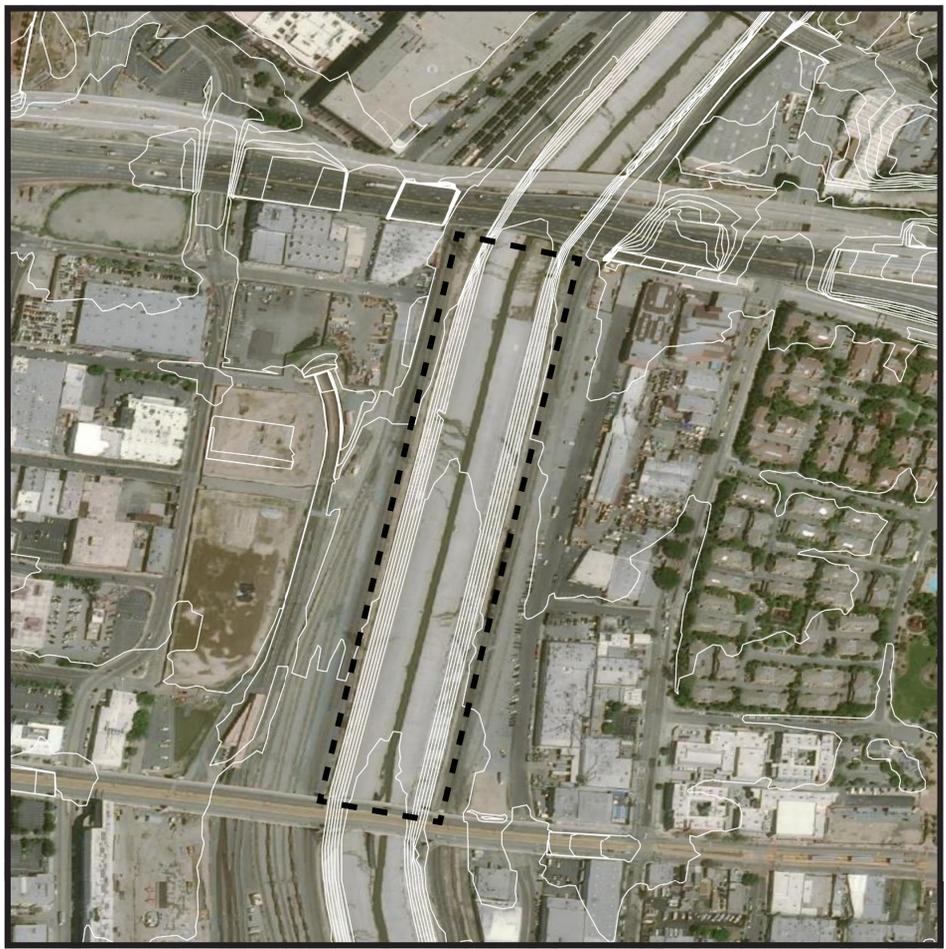
- Largely composed of industrial buildings dating from the early 20th century, the area has recently been revitalized, and its street scene slowly developed in the early the 21st century. New art galleries have increased recognition of the area amidst the entire downtown where other art museums are found.

Major Roadways

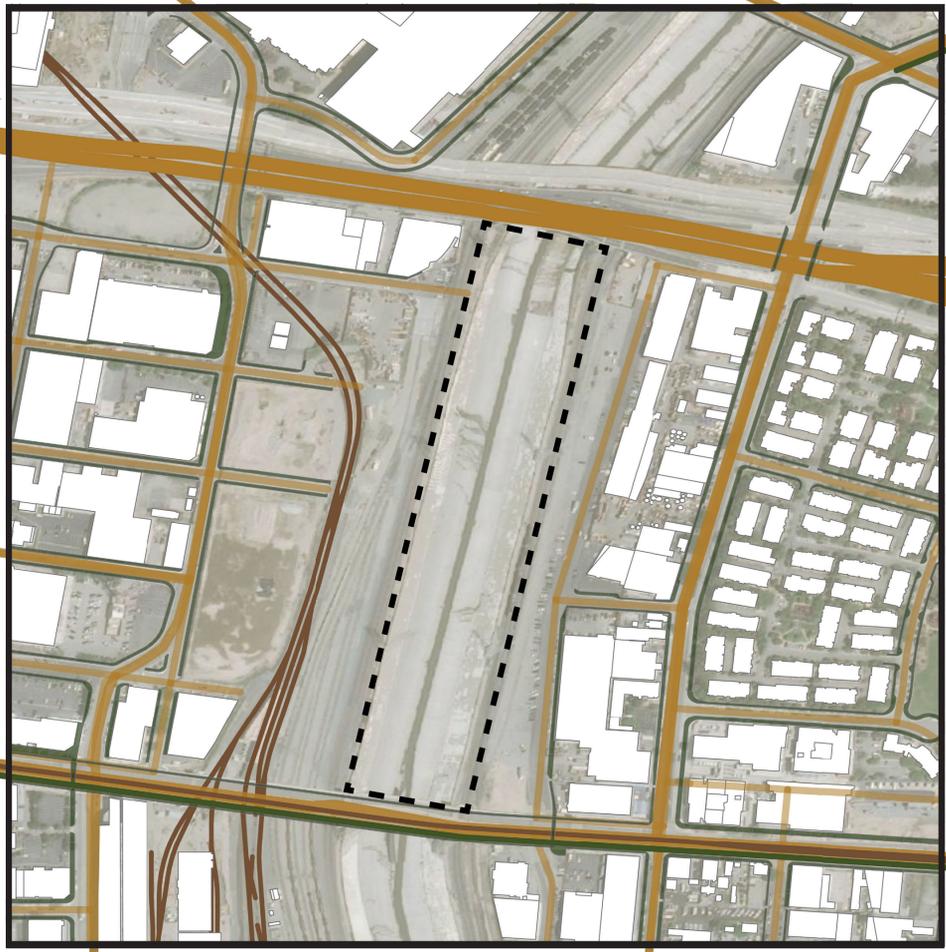


-  - Freeway
-  - Major Highway
-  - Secondary Highway
-  - Arterial Streets
-  - Subway Line

0 0.5 1 2 Miles



Site Topography

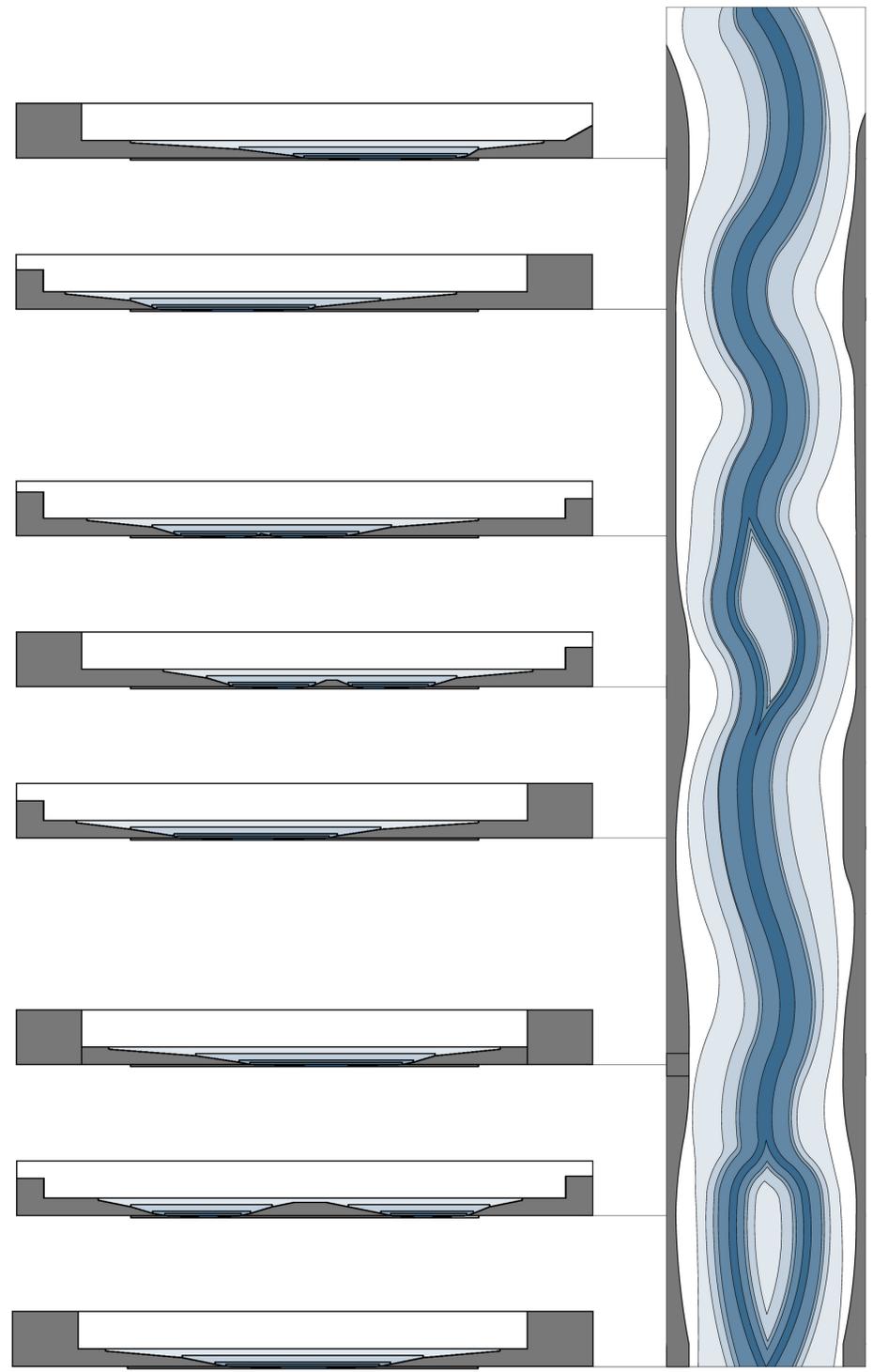


Site Circulation

-  - Freeway
-  - Major Highway
-  - Secondary Highway
-  - Arterial Streets
-  - Subway Line
-  - Bike Lane
-  - Sidewalks

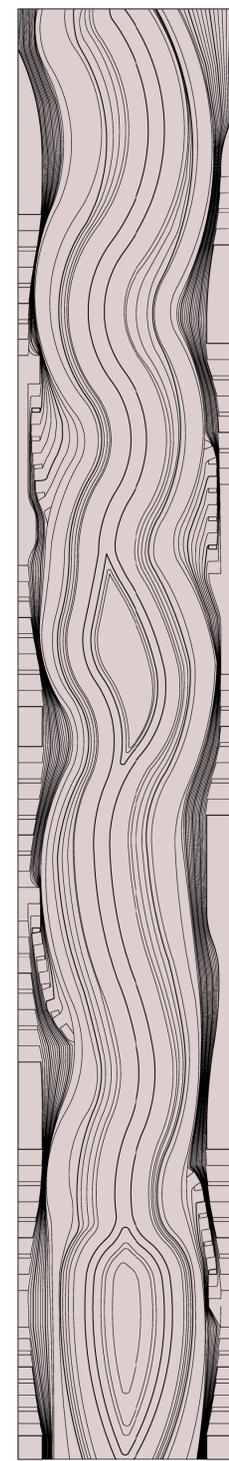
Design

Flow Rates

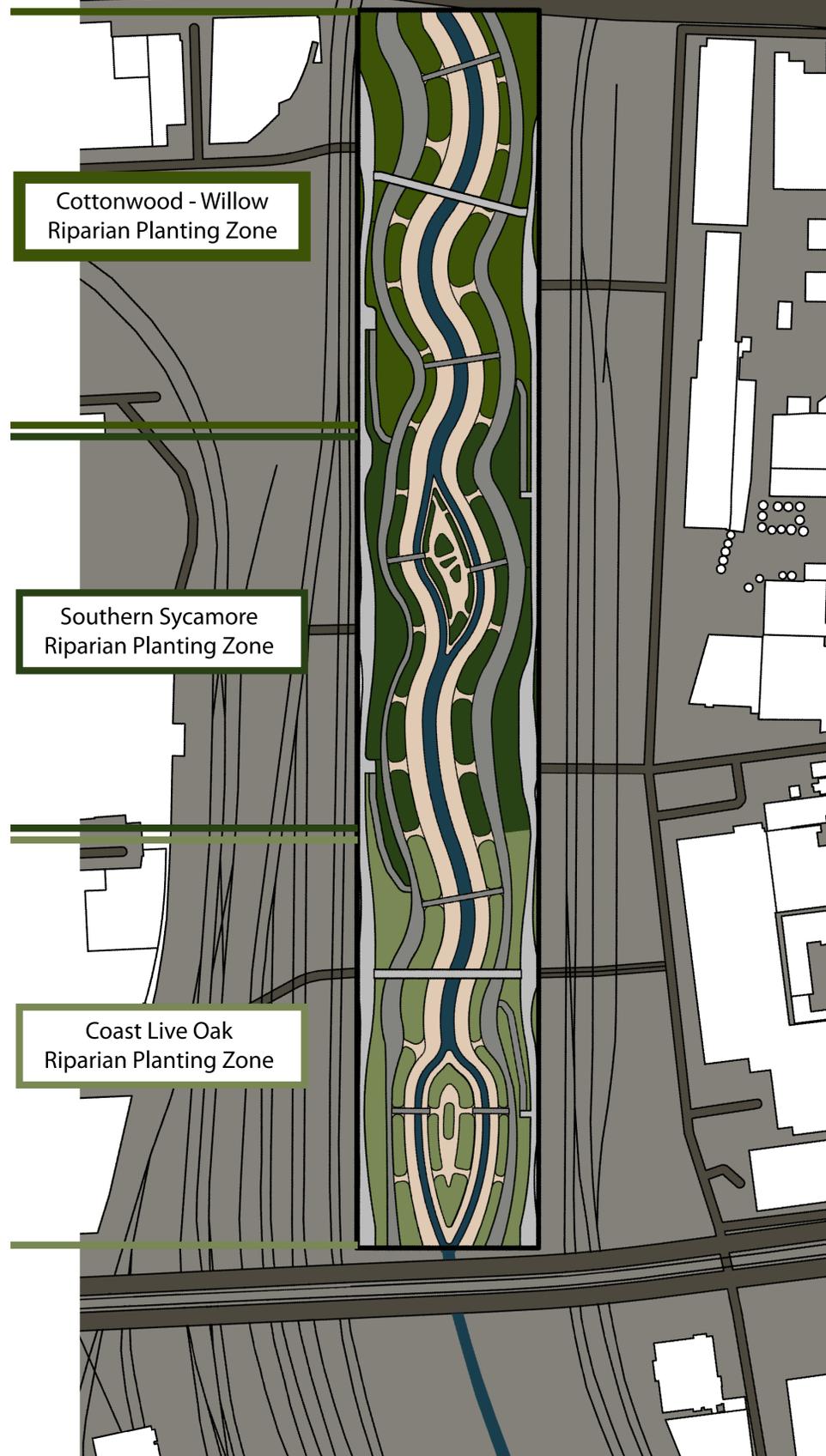


- 20 cfs - 365 days of the year (100%)
- 100 cfs - 182 days of the year (50%)
- 150 cfs - 92 days of the year (25%)
- 500 cfs - 37 days of the year (10%)
- 1000 cfs - 20 days a year (5%)

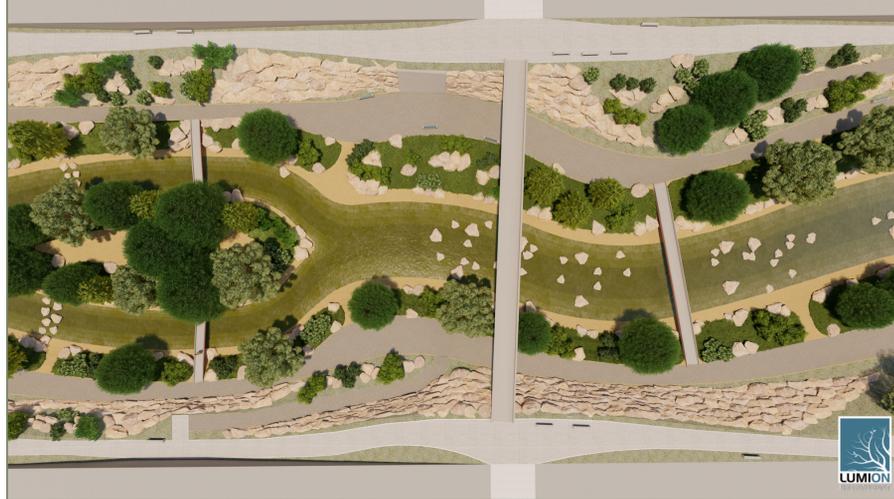
Topography



Planting Zones



Coast Live Oak Riparian Zone



20 cfs water level allows for 3rd level circulation



Pedestrian Bridge Overlook of Coast Live Oak Island



Southern Sycamore Riparian Zone



Art Wall and Pop Up Shop for Neighboring Art District



Southern Sycamore Island View



Cottonwood-Willow Riparian Zone



Willow Native Planting with Pedestrian Bridge



Boulder Wall and Large Local Art Mural



20 cfs (Lowest Water Level)



100 cfs (50% Water Level)



5000 cfs (Highest Water Level)



Three Levels of Circulation



500 cfs Floods Southern Sycamore Island but Allows for Circulation

