

# The Bowtie Parcel Master Plan

UCLA LD6: Concept Development / Instructor: Steven Chavez

Summer 2020

Rivkah Spolin

# TABLE OF CONTENTS

## Pre Design

Overview and History.....2

Site History Timeline.....3

Vicinity Map.....4

Site Inventory.....5

## Concept Design

Site Analysis.....6

Site Constraints.....7

Site Opportunities.....8

Site Existing Environmental Survey.....9

Precedent Case Study 1.....10

Precedent Case Study 2.....11

Precedent Case Study 3.....12

Precedent Case Study 4.....13

## Schematic Design

Process: Diagramming.....14

3 Design Alternatives Overview.....15

Design Alternative 1.....16

Design Alternative 2.....17

Design Alternative 3.....18

## Design Development

Process: Site Plan & LID System Navigation.....19

Master Plan Statement.....20

Master Plan.....21

Inspirational Photos Collage.....22

Site Section 1.....23

Site Section 2.....24

Perspectives & Walkthrough Video.....25



# OVERVIEW AND HISTORY

The Bowtie Parcel, otherwise known as the G-1 Tract, is an 18-acre site within Taylor Yard, a historic rail yard along the Los Angeles River. Today it is post-industrial, but its prime location at the intersection of the 2 and 5 Freeways as well as its position along one of only two soft-bottomed stretches of the LA River make it an important site for the future of Los Angeles. In fact, in 2003, the State of California purchased the land, and in 2019, Governor Newsom approved \$500K in the state budget for an initial design proposal for a new State Park located on the Parcel.

Initially the Bowtie Parcel and the surrounding region was occupied by the Tongva people, and over the course of its history, the land traded hands multiple times. Spain claimed California from 1769 to 1821, when Mexico gained independence; however, in 1847, the Treaty of Guadalupe Hidalgo was signed and, as a result, Mexico ceded California to the United States. Soon after Los Angeles saw a boom of growth due to the expansion of railroad lines. In 1876, the Southern Pacific Railroad line was completed – the very line that ran through the Bowtie Parcel and Taylor Yard. In 1925, Taylor Yard was a major rail yard after several construction projects, such as the South Turntable, were completed on site, but when Southern Pacific rerouted its trains through the Cajon Pass in 1960 – possibly due to concerns of repeat

flooding of the LA River – Taylor Yard’s function as a rail yard began to diminish. Ultimately, Taylor Yard closed in 1985, and over the next few decades, the land’s new function as public and state parks was determined.

The G-1 Tract has much potential, although currently, it is overrun by invasive plants and asphalt. Furthermore, it has multiple complicated layers of challenges: soil toxicity, neighborhood apprehension toward development due to gentrification, noise pollution from the adjacent railroad tracks, and safety concerns surrounding homelessness. These challenges, however, do not outweigh the ecological and public health significance of the Bowtie Parcel. Wildlife sightings are commonplace in the LA River, which is strewn with Giant Reed and Black Willow vegetation communities according to the 2016 report completed by the Nature Conservancy. Additionally, the opportunity to remediate surface water runoff, reducing TMDLs (total maximum daily load of pollutants in a body of water to meet water quality standards), and restore the LA River to a better version of itself is one that cannot be overlooked. Finally, the addition of a state park would increase the city’s overall public health in an otherwise park-poor Los Angeles. These are the challenges – and the opportunities – that will be addressed in the redesign proposal for the Bowtie Parcel.



Aerial view of Bowtie Parcel, Taylor Yard, LA River, and surroundings. Photo via: Los Angeles Wave Newspaper.



Utility lines are positioned throughout the site.



This portion of the LA River is soft-bottomed, and is a shockingly breathtaking view.



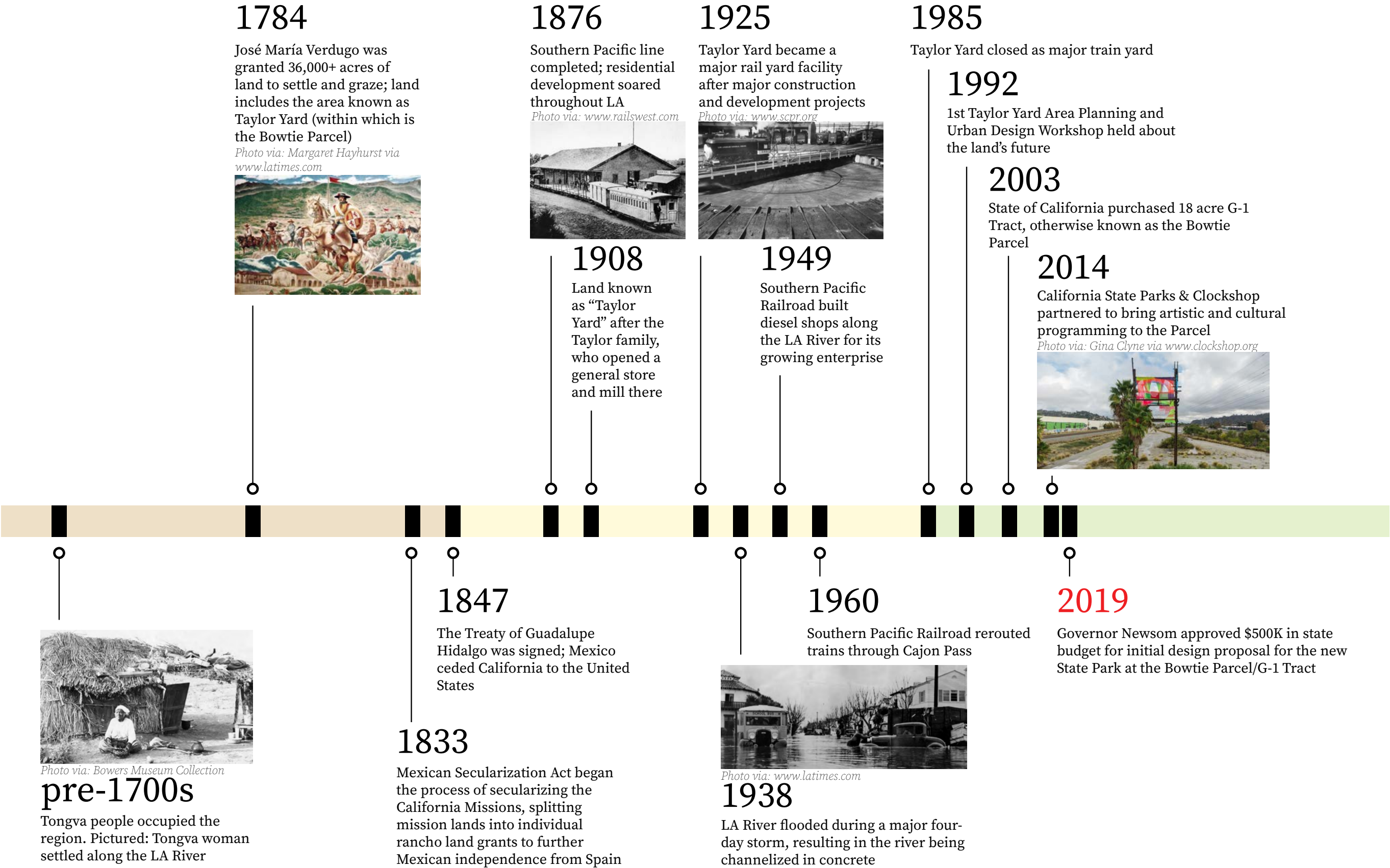
A Clockshop artist framed a view of the LA River.



Remnants of the South Turntable.

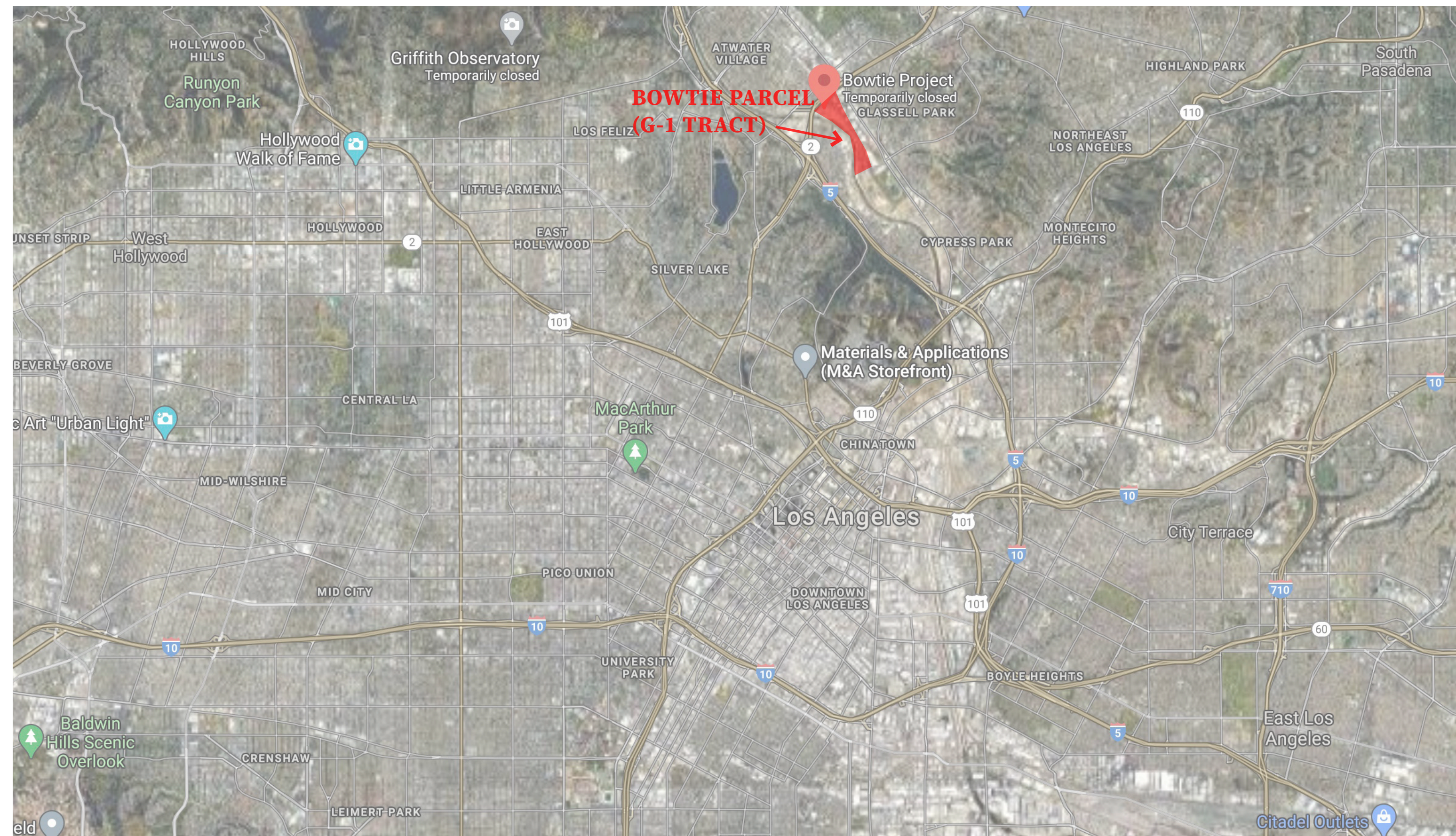


# SITE HISTORY TIMELINE



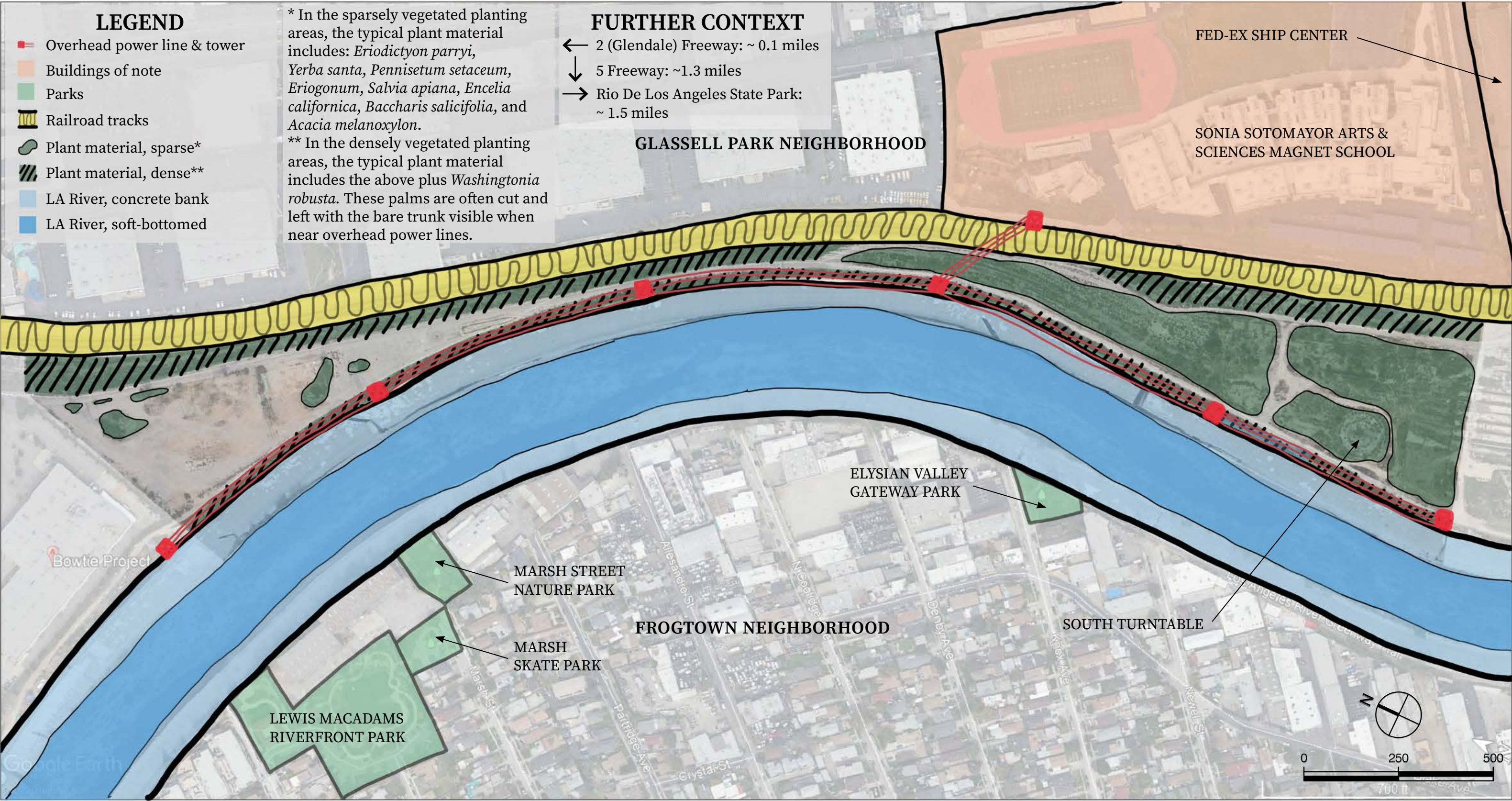


# VICINITY MAP



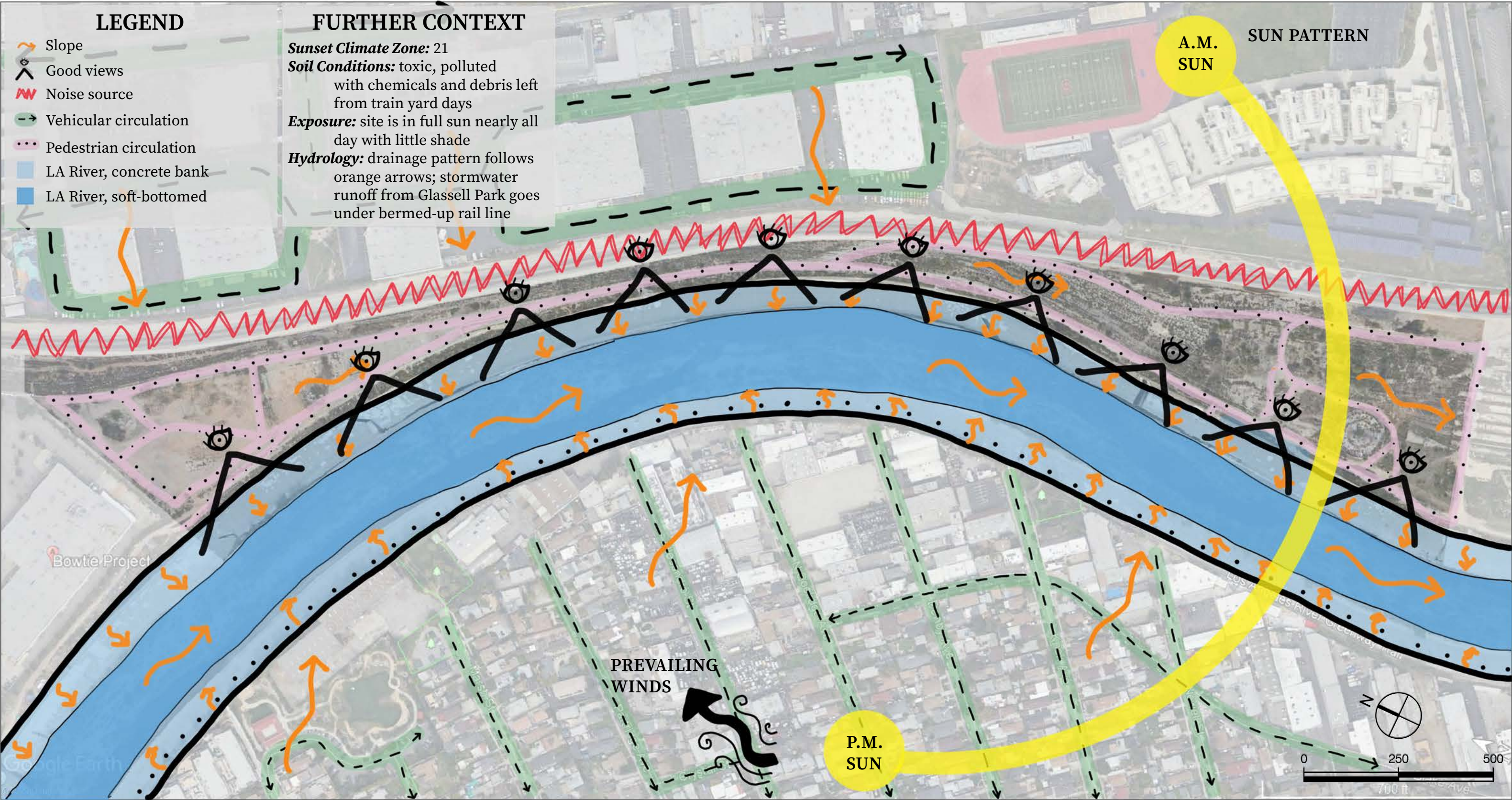


# SITE INVENTORY





# SITE ANALYSIS







Local communities, such as Frogtown, are concerned with potential gentrification due to the redesign of the Bowtie Parcel and Taylor Yard as a whole. This leads to questions of connectivity, programming, and access among others.





# SITE OPPORTUNITIES



Photo via: [www.archdaily.com](http://www.archdaily.com)



Photo via: [ESKYIU Architects](http://ESKYIU Architects)



Photo via: Alexander Robinson, [www.landscapeperformance.org](http://www.landscapeperformance.org)



Photo via: [www.swagroup.com](http://www.swagroup.com)



Photo via: [www.culturalweekly.com](http://www.culturalweekly.com)



Photo via: [www.designboom.com](http://www.designboom.com)

**① Shade Plants & Architecture**  
Shade structures like the one in the Phoenix Civic Space by Architekton can create gathering places for large groups of people, or alternatively, intimate places to sit. Trees similarly add to the functionality and beauty of the site.

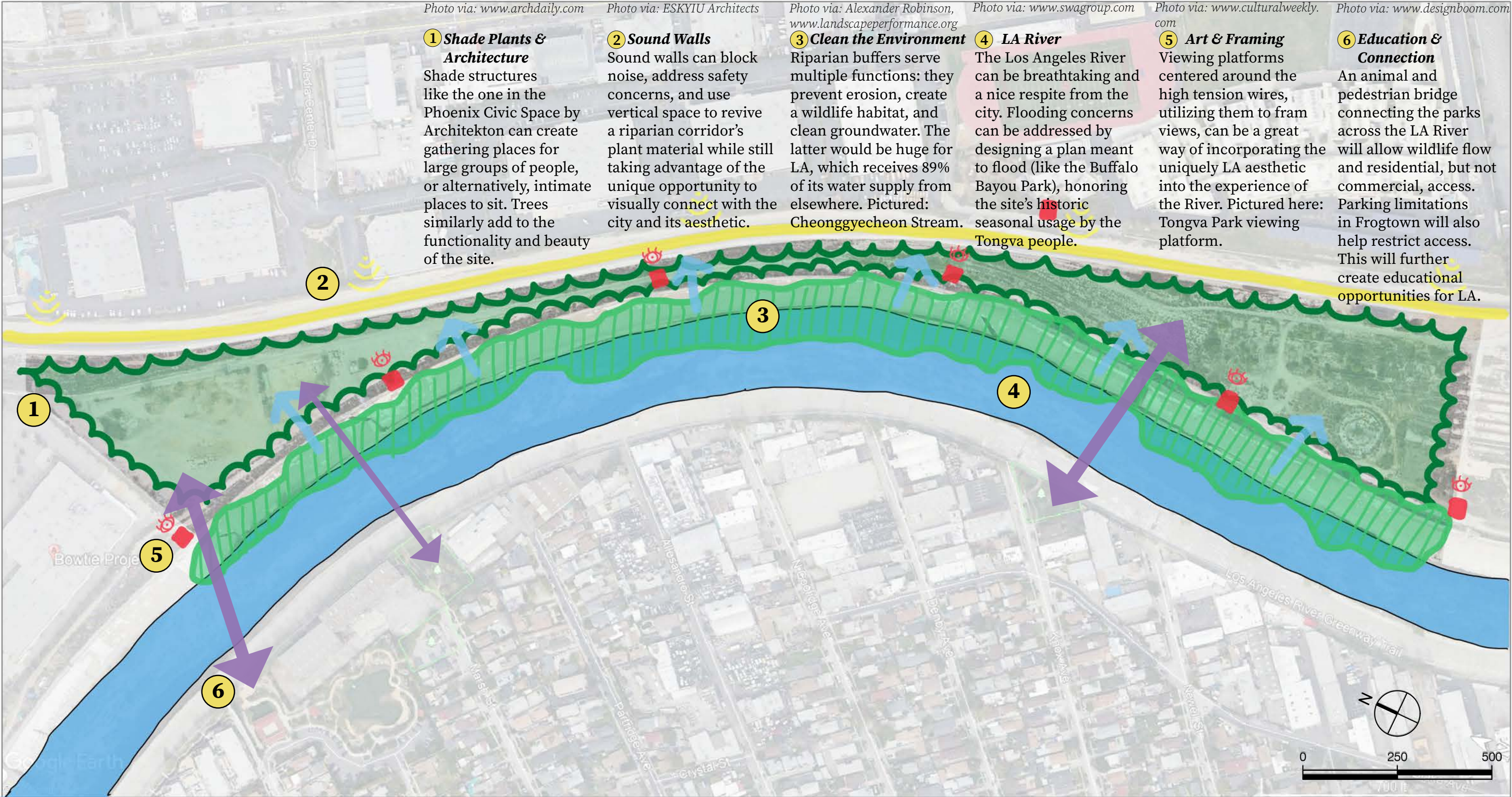
**② Sound Walls**  
Sound walls can block noise, address safety concerns, and use vertical space to revive a riparian corridor's plant material while still taking advantage of the unique opportunity to visually connect with the city and its aesthetic.

**③ Clean the Environment**  
Riparian buffers serve multiple functions: they prevent erosion, create a wildlife habitat, and clean groundwater. The latter would be huge for LA, which receives 89% of its water supply from elsewhere. Pictured: Cheonggyecheon Stream.

**④ LA River**  
The Los Angeles River can be breathtaking and a nice respite from the city. Flooding concerns can be addressed by designing a plan meant to flood (like the Buffalo Bayou Park), honoring the site's historic seasonal usage by the Tongva people.

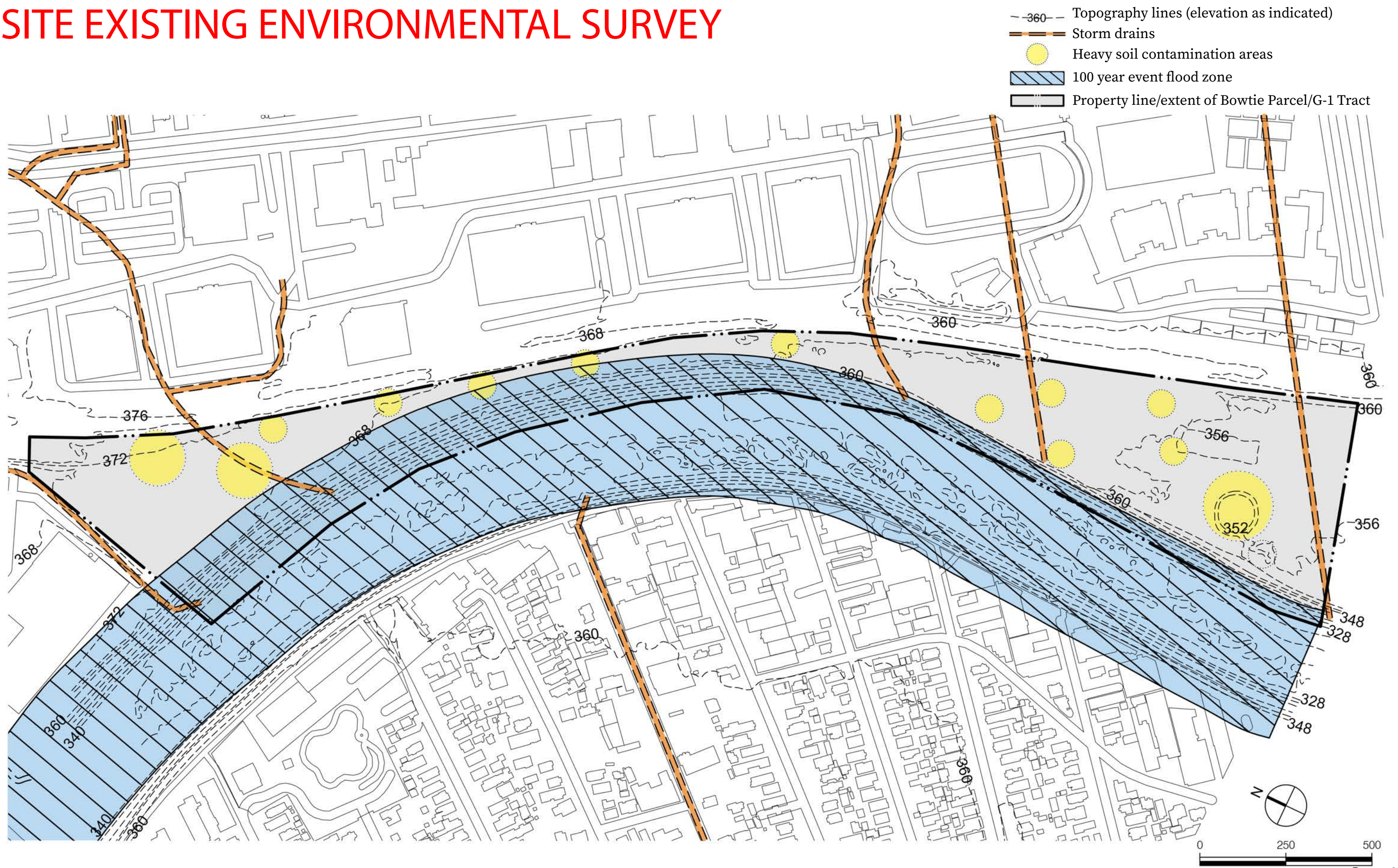
**⑤ Art & Framing**  
Viewing platforms centered around the high tension wires, utilizing them to fram views, can be a great way of incorporating the uniquely LA aesthetic into the experience of the River. Pictured here: Tongva Park viewing platform.

**⑥ Education & Connection**  
An animal and pedestrian bridge connecting the parks across the LA River will allow wildlife flow and residential, but not commercial, access. Parking limitations in Frogtown will also help restrict access. This will further create educational opportunities for LA.





# SITE EXISTING ENVIRONMENTAL SURVEY





# PRECEDENT CASE STUDY 1: BUFFALO BAYOU PARK

## SITE OVERVIEW

Located in Houston, Texas, the Buffalo Bayou Park, designed by SWA Group, revitalized a 2.3 mile-long stretch of the Buffalo Bayou, the city’s main drainage basin. With difficult conditions such as overhead freeways and utilities, steep slopes, limited access and flood-prone banks, the site also suffered from damaged ecological and riparian systems.

## SUCSESSES

- Improved access with 4 new **bridges** that connect surrounding neighborhoods
- Channel stabilization techniques such as: **gabions**, **coir lifts**, re-graded slopes, re-engineered meandering water course, bulkheads, and flood benches
- It’s **meant to flood**: withstood Hurricane Harvey and avoided large repair costs due to damage
- Increased habitat quality within 25% of the park
- Annually sequesters 9.19 tons of atmospheric carbon and intercepts approximately 84,000 gallons of stormwater runoff
- Increased reported quality of life for visitors and nearby neighborhoods
- Design **repurposed the Cistern**, converting it into an educational and cultural space, often an art gallery

## AREAS FOR IMPROVEMENT

- Hurricane Harvey still left deep and heavy silt deposits in trails and other low-lying park facilities
- Gentrification effects: 13% average increase in the median property tax revenue (compared to 7% increase in the county), and generated \$2 billion worth of investments within a 3-block radius
- Re-engineering the water course meant removal of existing trees and vegetation, temporarily exposing the shoreline
- It seems more could have been removed and instead planted with other types of vegetation (phytoremediating, wetlands, etc.)

Large open spaces allow for gathering and recreational events



Above (3) photos via: SWA Group via www.swagroup.com

Pathways go underneath the overhead freeways



Flooding was built into the design, which withstood Hurricane Harvey



Section showing gabions and slope re-grading for improved channel stabilization



Photo via: SWA Group via www.landezine.com

Coir lifts was another method used in preventing soil erosion along the Bayou edge



Photo via: www.rolanka.com



Photo via: SWA Group via www.swagroup.com



# PRECEDENT CASE STUDY 2: CHEONGGYECHEON STREAM

## SITE OVERVIEW

Completed in 2005, the Cheonggyecheon Stream Restoration Project in Seoul, South Korea daylighted an urban stream that was covered by a highway. In restoring the stream, designer SeoAhn Total Landscape re-connected parts of the city, reduced air pollution and traffic congestion, increased plant and animal biodiversity, and also revived the city's economy.

## SUCSESSES

- Removed concrete highway and reconnected the city, as well as waterways
- Provides flood protection for up to a 200-year flood event and can sustain a flow rate of 118mm/hr
- Constructed 22 brigdes, ultimately increasing use of **more sustainable methods of transportation**
- Increased biodiversity by 639% through **creation of native willow swamps, shallows and marshes**
- Design **terraced vertical walls** to allow for greater seasonal interest in addition to flood protection
- Use of **stones across the stream** slow down the flow of water, also creating stepping stones for visitors
- Removal of highway improves city air quality and reduces urban heat island effect
- Attracts 64,000 visitors daily
- Incorporated and repurposed remnants of highway into the design, **celebrating the site's history**

## AREAS FOR IMPROVEMENT

- Design was not initially accessible to all, namely those with visual impairments and mobility challenges
- Ecological performance could be improved with:
  - Spur dikes
  - Vegetated low-flow revetment
  - Alternate detour channels for fish
  - Vegetated filter strips to remediate urban runoff from adjacent motorways
- Heavy gentrification: increased the price of land by 30-50% for nearby properties (more than double that in other areas of Seoul)

Diagrammatic section showing use of site before and after the Stream Restoration

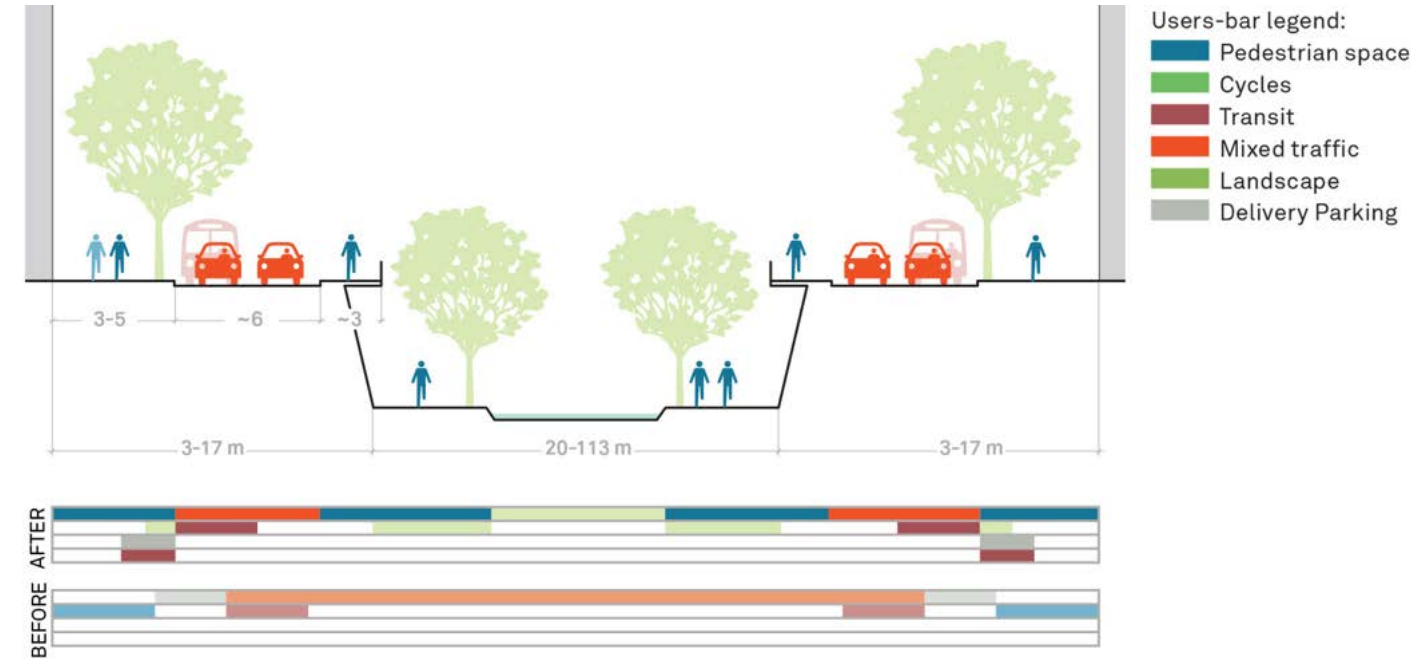


Photo via: [www.globaldesigningcities.org](http://www.globaldesigningcities.org)

Refugee huts along the River c. 1945, when it was used as a sewer system



Photo via: [www.kcet.org](http://www.kcet.org)

Terraced banks of the stream allow access and create flood protection



Photo via: Alexander Robinson via [www.landscapeperformance.org](http://www.landscapeperformance.org)

Suggested improvement example: spur dikes



Photo via: [www.thesouthern.com](http://www.thesouthern.com)

Before the Cheonggyecheon Stream Project: a highway, dividing the city



Above (2) photos via: Seoul Metropolitan Government via [www.landscapeperformance.org](http://www.landscapeperformance.org)

Highway remnants are incorporated into the design, showing the site's history



Photo via: Seoul Metropolitan Government via [www.landscapeperformance.org](http://www.landscapeperformance.org)

Suggested improvement example: vegetated low-flow revetment, or riprap



Photo via: [www.mwcd.org](http://www.mwcd.org)

After the Cheonggyecheon Stream Project: a daylighted stream



Stones slow down the stream's water flow, but also serves as stepping stones



Photo via: [www.favelissues.com](http://www.favelissues.com)

Suggested improvement diagram: filter or buffer strips for runoff control

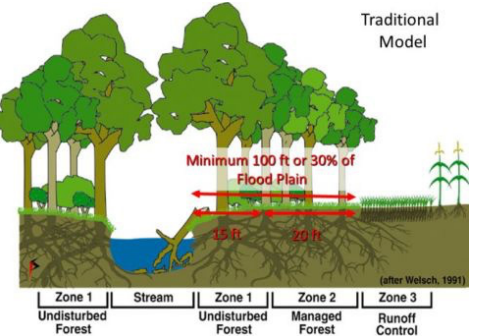


Photo via: [www.extension.umn.edu](http://www.extension.umn.edu)



# PRECEDENT CASE STUDY 3: RENAISSANCE PARK

## SITE OVERVIEW

Designed by Hargreaves Associates, Renaissance Park in Chattanooga, Tennessee was completed in 2006 as the final phase of the 21st Century Waterfront Master Plan, which aimed to revitalize the Tennessee River. This site was post-industrial - it was previously an appliance manufacturing and enameling facility - and held contaminants in the soil, which was leaching toxins into groundwater and back into the River.

## SUCSESSES

- Moved contaminated soil from within the 100-year floodplain and **sealed toxic soil within landforms**
- Created a **constructed wetland**, which increased biodiversity, the site's flooding capacity, and treats stormwater
- Visited by 145,220 people annually, also boosting the economy in the nearby neighborhood
- Reduced irrigation water demand by 74% by removing several lawn areas
- Site used for public events and art exhibits
- Site **history incorporated into program areas**, such as Trail of Tears Pathway

## AREAS FOR IMPROVEMENT

- Gentrification: land value within 1/4 mile of the park increased 821% between 2005 and 2013 (compared to a 319% increase for the overall Northshore neighborhood)
- Success of stormwater cleaning in the constructed wetland could be further improved: E. coli is a constant problem in the water, and therefore visitors are unable to put their feet in the water (not to mention the effect it has on the existing and potential animal life in the park)

Renaissance Park Site Plan

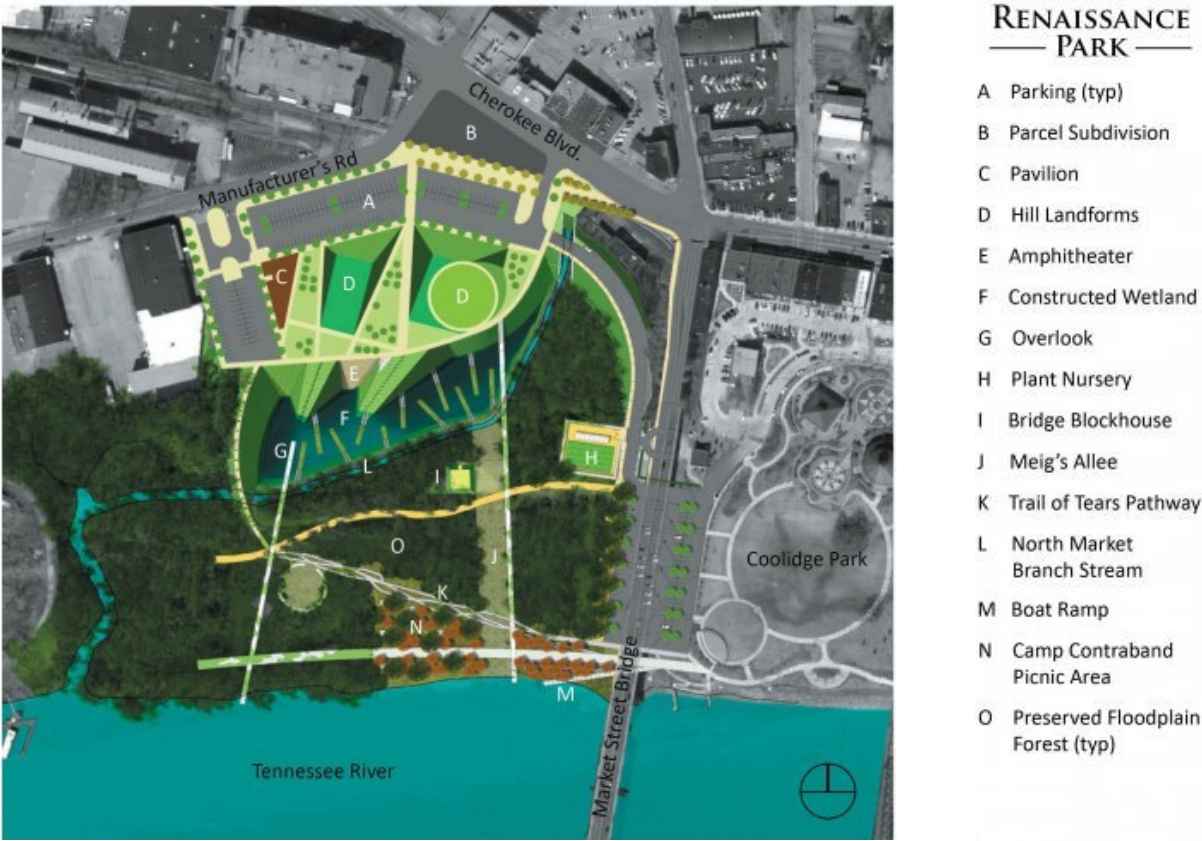


Photo via: City of Chattanooga Parks and Recreation via [www.landscapeperformance.org](http://www.landscapeperformance.org)

Aerial view of Renaissance Park, with connection bridges over the Tennessee River



Photo via: John Gollings via [www.land8.com](http://www.land8.com)

The topographic forms that hold and seal in the contaminated soil are also used as gathering and play spaces



Photo via: Chris Whitis via [www.landscapeperformance.org](http://www.landscapeperformance.org)

The constructed wetland uses a series of gabions filled with rocks, with plant material behind each



Photo via: [www.hargreaves.com](http://www.hargreaves.com)

Diagram shows the water flow into the constructed wetland, slowing down the water velocity and increasing the floodplain

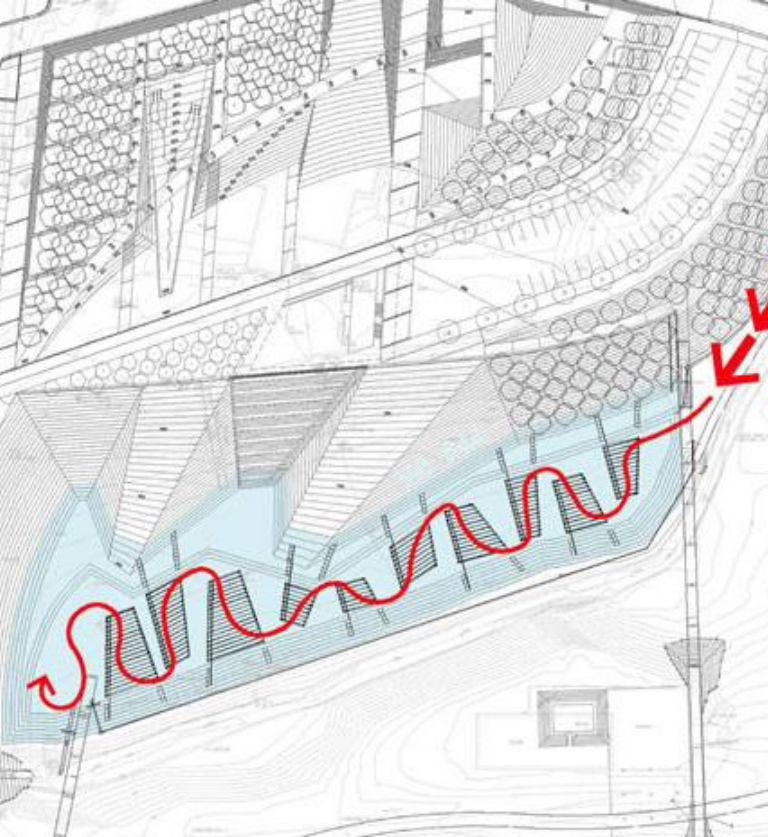


Photo via: [www.land8.com](http://www.land8.com)



# PRECEDENT CASE STUDY 4: ALUMNAE VALLEY RESTORATION

## SITE OVERVIEW

Located at Wellesley College in Massachusetts, the Alumnae Valley Restoration was completed in 2005 and designed by Michael Van Valkenburgh Associates, although the initial concept for its wetland renewal and glacial landforms was posed by Frederick Law Olmsted in 1902. However, this recommendation was ignored at the time, and instead, Alumnae Valley on the Wellesley campus became a toxic brownfield, used as a physical plant, industrialized natural gas pumping, and eventually, a parking lot. In 2005 Alumnae Valley was restored with an eye toward Olmsted's vision, remediating the toxic soils and restoring the watershed through a variety of efforts.

## METHODS

- The **most toxic soil was excavated and removed off-site** for treatment
- The mildly toxic soils were left in place and **capped, with a geosynthetic clay liner** to seal it off
- Clean/non-toxic soil was placed over the entire site in geomorphic forms, raising it **6' above grade**
- Dense non-aqueous phase liquid (**DNAPL**) is **pumped, collected, and removed off-site** for treatment
- A **cattail marsh** uptakes and transforms harmful contaminants into benign compounds
- A **constructed wetland** was created and **stormwater runoff was cleaned and recharged**

## AREAS FOR IMPROVEMENT

- Toxic soils and liquids moved off-site could have been kept on an **on-site remediation facility**, adding an educational and historic component to the design
- Arsenic and Zinc levels in post- occupancy soil samples are higher than EPA standard, revealing that the **soil remediation efforts may not be working as effectively as intended, begging the question: WHY?**

Perspective of the geomorphic glacier-like forms of the Alumnae Valley Restoration Project



Photo via: [www.mvvainc.com](http://www.mvvainc.com)

The slopes and marsh edge are stabilized by coir logs and capped with a geosynthetic clay liner



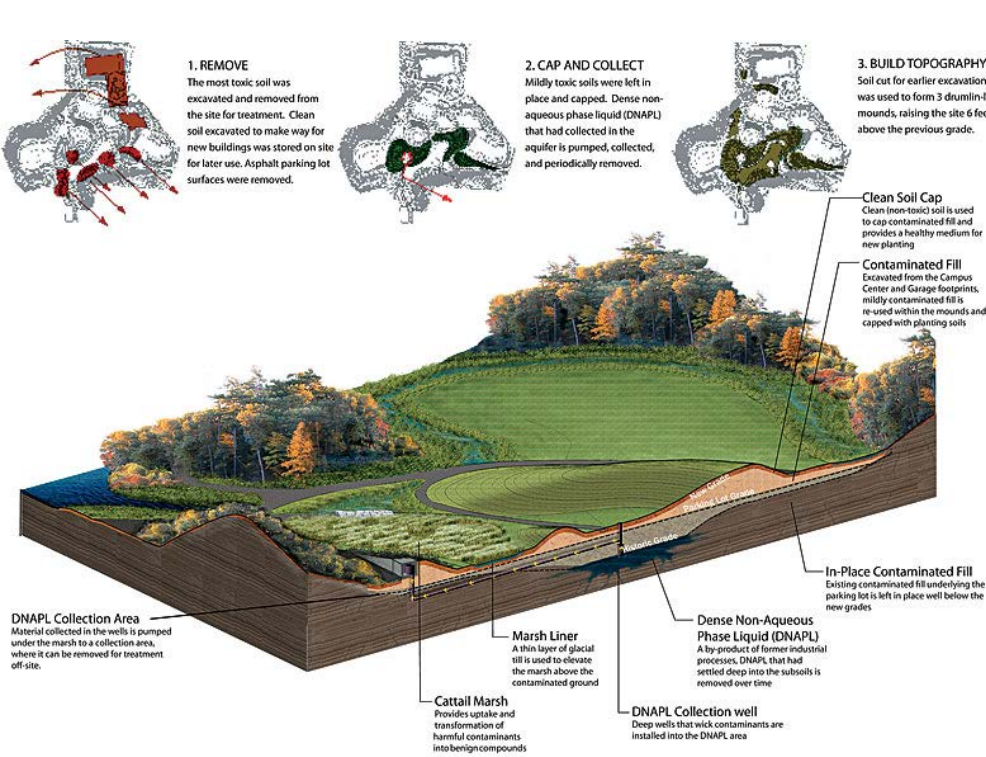
Photo via: Charles Mayer Photography via [www.asla.org](http://www.asla.org)

Alumnae Valley Restoration Site Plan



Photo via: [www.mvvainc.com](http://www.mvvainc.com)

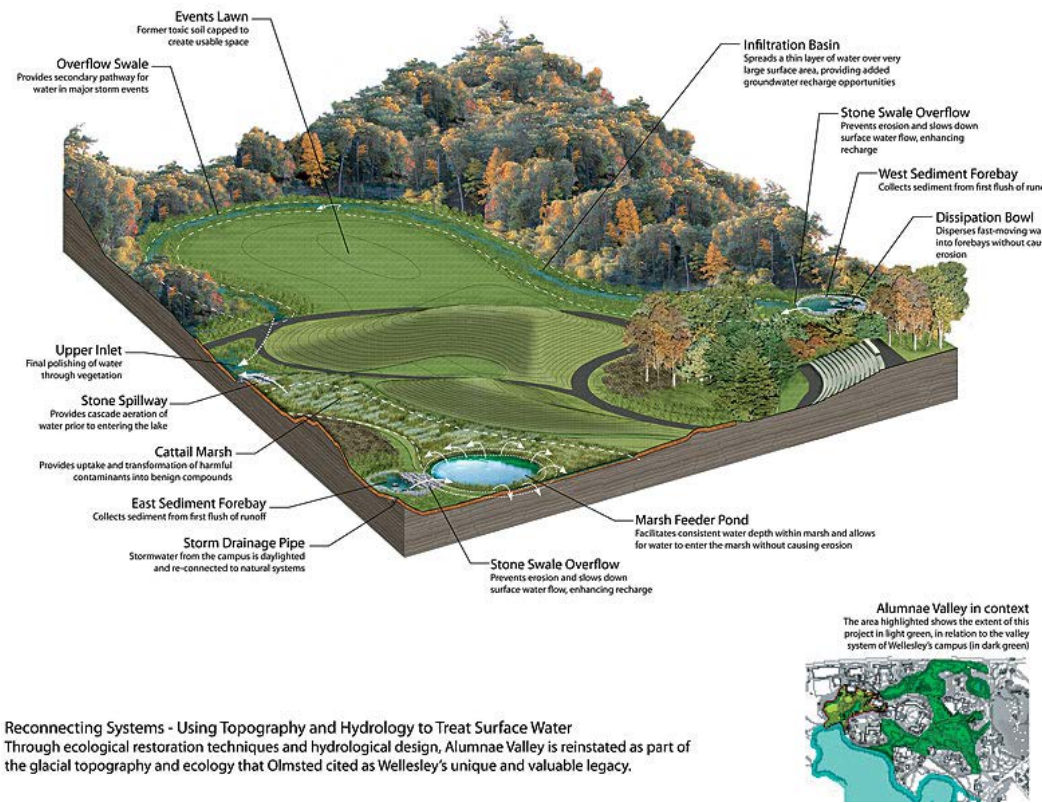
Layers of soil toxicity are dealt with in a variety of ways



Brownfield Restoration - Efficiently Dealing With Toxicity  
A variety of soil remediation techniques are used to treat the contaminated site and restore it as a living system.

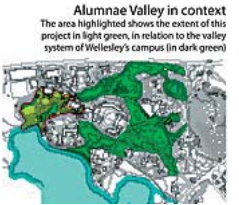
Photo via: [www.mvvainc.com](http://www.mvvainc.com)

Wetlands were constructed and stormwater is cleaned and recharged



Reconnecting Systems - Using Topography and Hydrology to Treat Surface Water  
Through ecological restoration techniques and hydrological design, Alumnae Valley is reinstated as part of the glacial topography and ecology that Olmsted cited as Wellesley's unique and valuable legacy.

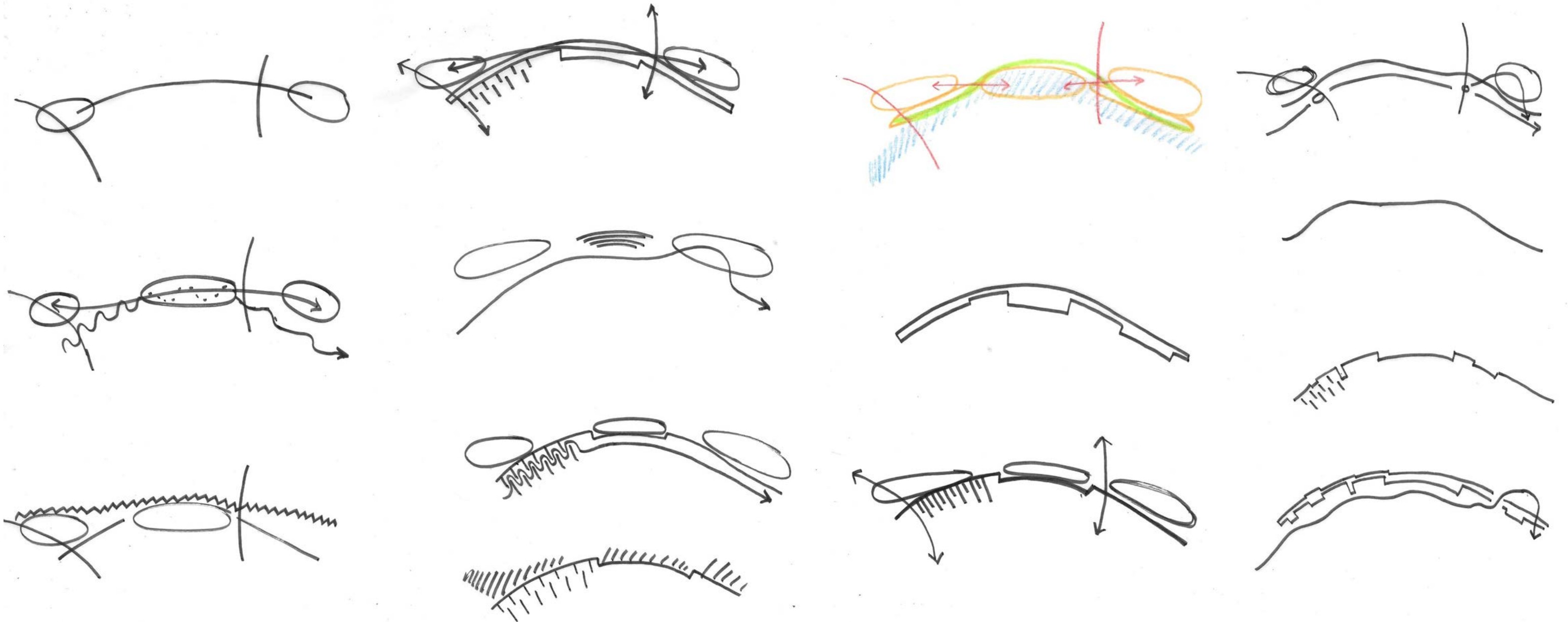
Photo via: [www.mvvainc.com](http://www.mvvainc.com)





# PROCESS: DIAGRAMMING

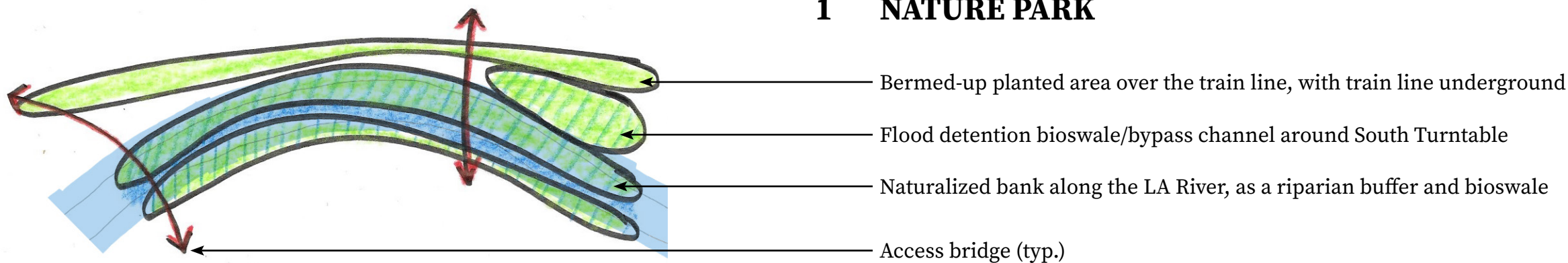
In an effort to address the program in terms of spatial connections as well as LID/engineering systems , I began to draw parti-like diagrams to understand the overall “picture.” Below are these diagrams, in which a progression of ideas is visible, ultimately leading to 3 design alternatives.



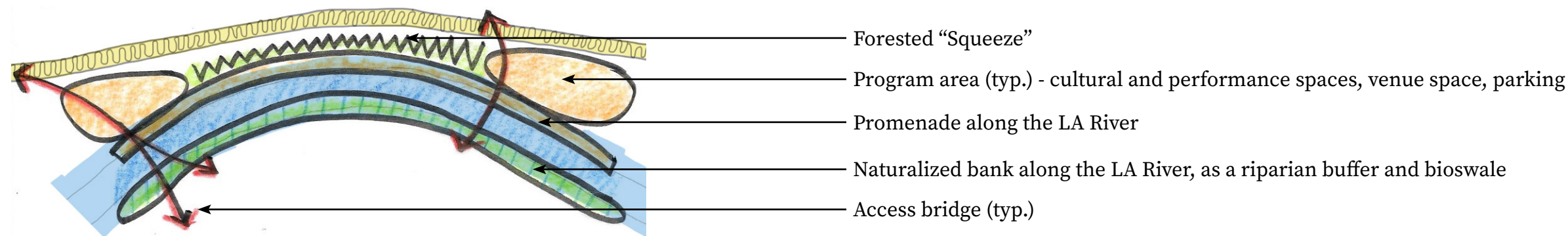


# 3 DESIGN ALTERNATIVES OVERVIEW

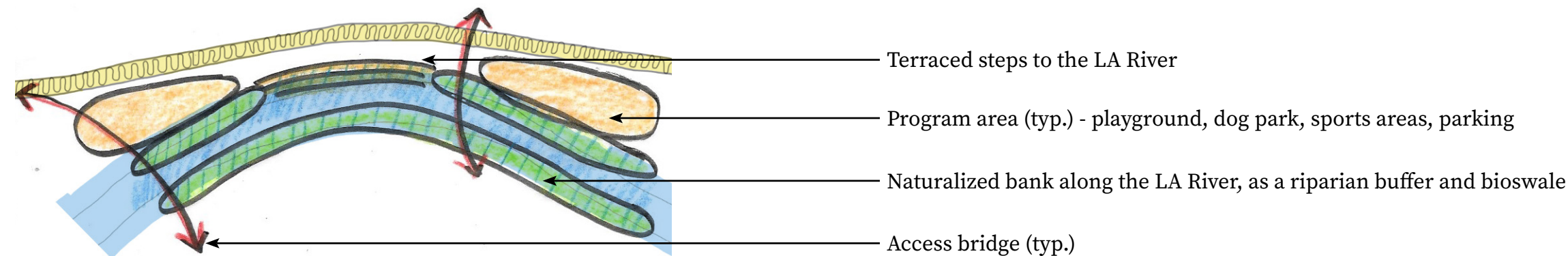
## 1 NATURE PARK



## 2 CULTURE CENTER

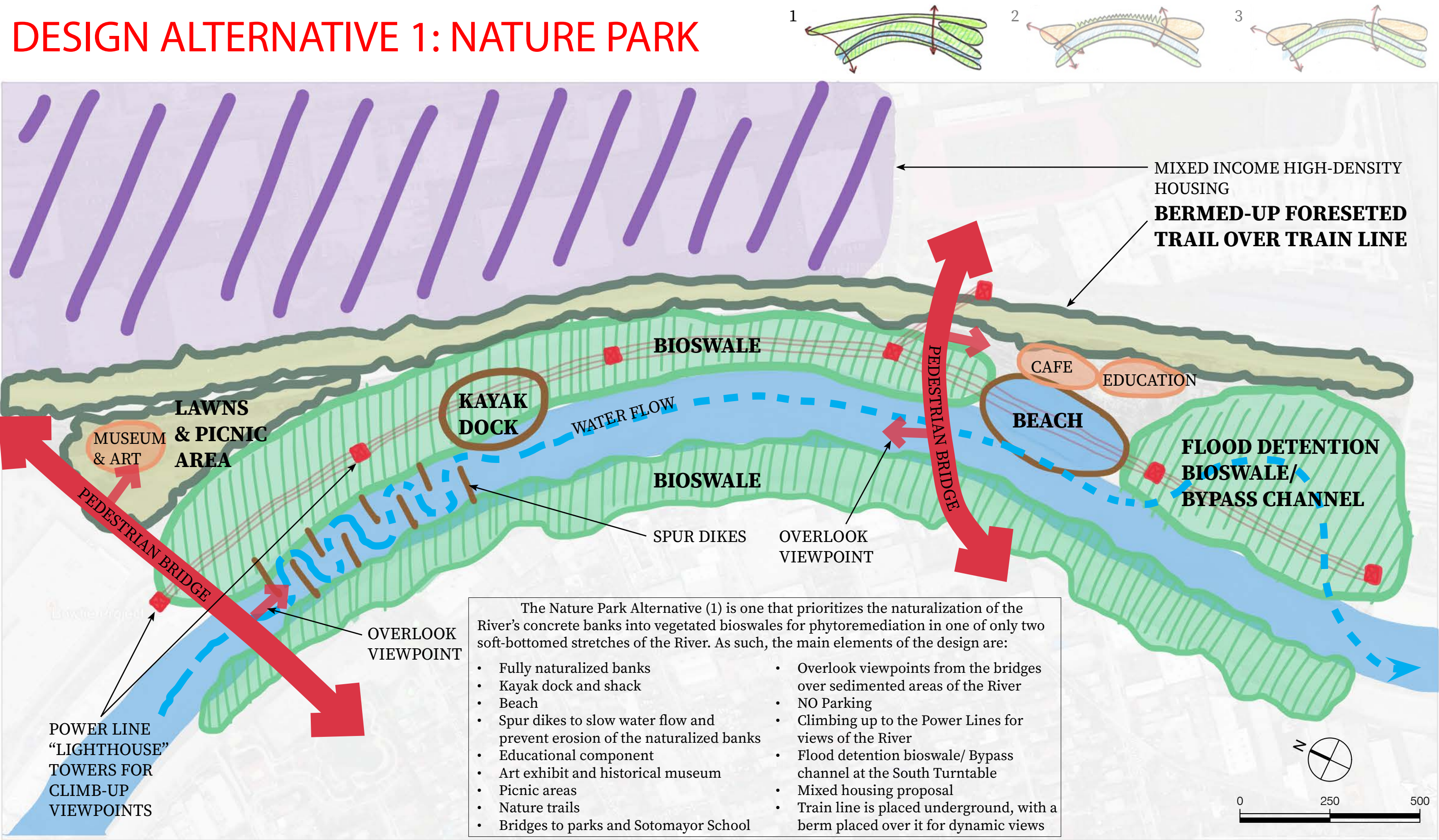


## 3 PLAY PARK



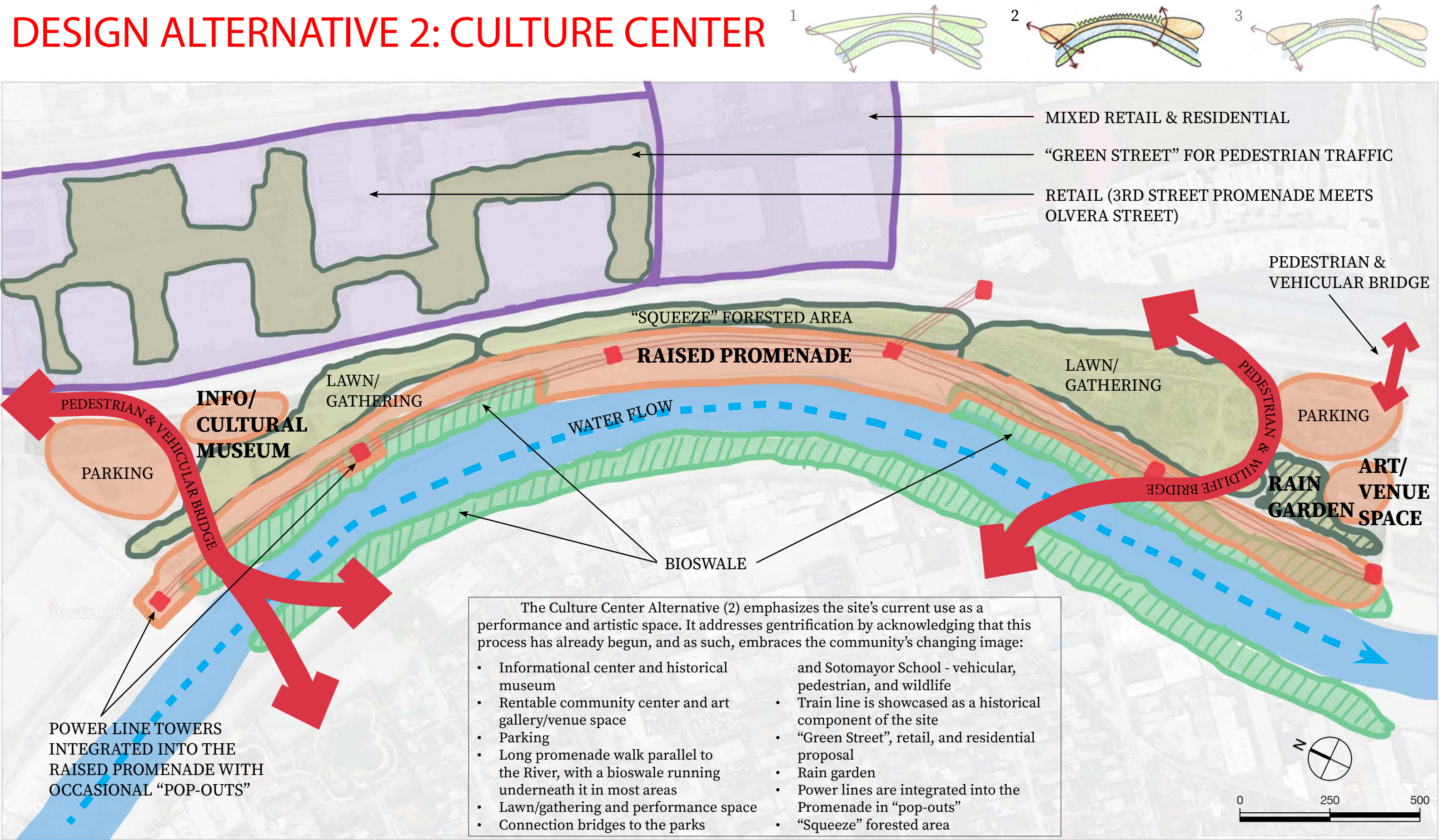


# DESIGN ALTERNATIVE 1: NATURE PARK

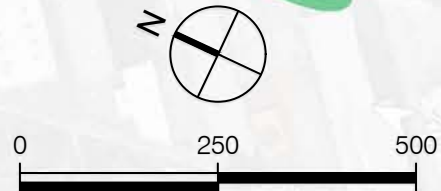




# DESIGN ALTERNATIVE 2: CULTURE CENTER







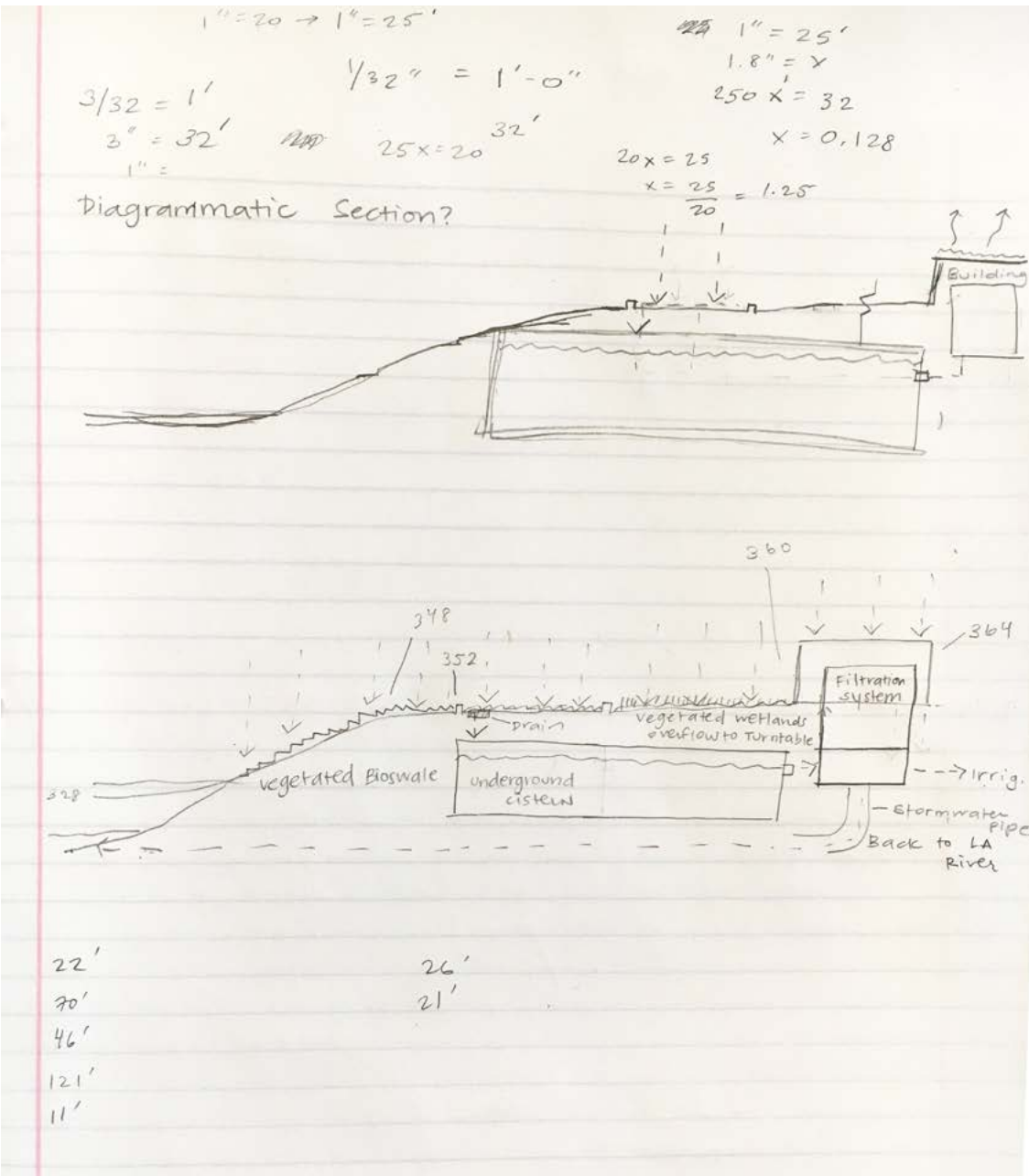
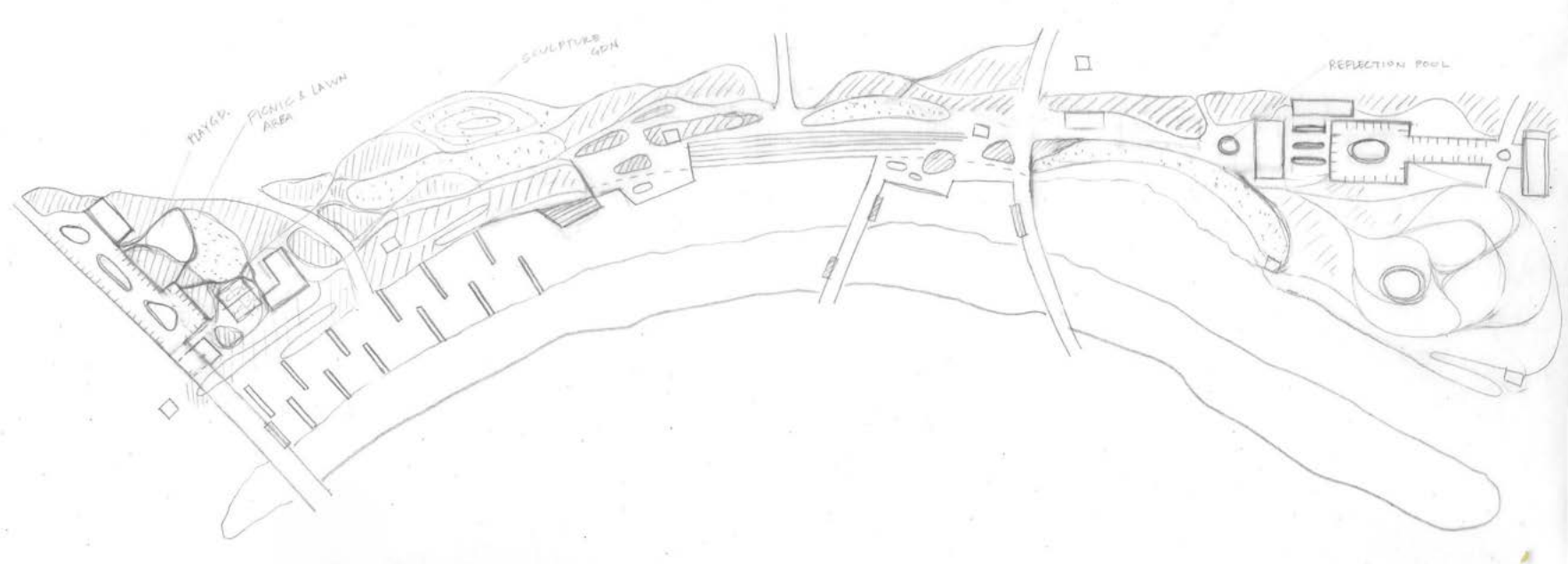


# PROCESS: SITE PLAN & LID SYSTEM NAVIGATION

After drawing a series of diagrams, a concept emerged in which a blend of the 3 design alternatives was explored. This hybrid of ideas was also expressed in the site program: on the north side of the master plan is a city park, much in line with the nearby parks located in Frogtown; however, as one moves southward through the Bowtie Parcel, the California State Parks’s mission of “naturalized open space” is addressed through large green spaces, an open promenade with access to the LA River, and a trail over a bioswale around the historic South Turntable.

A hybrid also emerged with regard to the blend of organic and geometric forms on the site. It is this aesthetic that appeals to me as a designer, but also felt appropriate given the Bowtie Parcel’s proximity to the city grid, gritty LA history, and ultimate desires to become “naturalized open space.”

Finally, in dealing with some of the ecological and environmental issues of the site, I felt it important to calculate how the new design proposal incorporated the already-existing site topography, and how that could be manipulated to allow for LID, or “low impact development.” This was particularly true along the water’s edge, where stormwater runoff could be treated from harmful pollutants, making the design sustainable and responsible - as it should be - in this era of environmental awareness.





# MASTER PLAN: “PROMENADE & PLAY”

In reviewing the Bowtie Parcel’s history, environmental conditions, and its constraints and opportunities, it became clear that the design should pay homage to the cultural history of the site, address the needs and concerns of the neighboring communities, and deal with the site’s environmental conditions - namely toxic soils and water as well as the erosive and flood-prone nature of the Bowtie Parcel.

The Bowtie Parcel’s redesign focuses on the central stepped Promenade, sandwiched between two raised viewing platforms over the LA River. “Play” is also a major component of the Park: a children’s playground, basketball courts, a daylighted stream, beach, kayak docks, a lower bike path, a sculpture garden, and lighthouse-like climbable High Tension Power Lines are features of the design proposal.

Cultural and environmental education are also heavily incorporated in the design. A museum and daylighted storm drain with stormwater-cleansing and energy-producing weirs exist on the northern end of the Bowtie Parcel; a wetlands bioswale and flood detention zone with underground cisterns is part of a larger education center, conveniently located near the Sotomayor School, on the southern side of the site.

On an urban design-scale, the Promenade & Play Master Plan proposes mixed-income housing combined with retail space instead of the nearby warehouses in Glassell Park. The inspiration for the retail area comes from both Olvera Street and 3rd Street Promenade, and in transforming this area into a walkable retail and residential area, the streets can be converted into “Green Streets,” further emphasizing the master plan’s overall Low Impact Development (LID) intent for the city of Los Angeles.

LID strategies include bioswales along the banks of the LA River (except at the central bend of the river, where the stepped promenade prevents the erosion of the bank in flooding events), bermed and heavily planted mounds over the Rail Line, permeable parking pavers, and a wetlands wildlife habitat/bioswale/flood detention zone.

Overall, the Bowtie Parcel’s “Promenade & Play” design aims to take advantage of its constraints by turning them into opportunities. The master plan capitalizes on its adjacencies by connecting the two sides of the LA River and making the site accessible for all in terms of programming. More importantly, however, in employing sustainable LID strategies throughout the site, the redesign becomes an important example for the treatment of current and future environmental issues in Los Angeles and cities around the world.



Detail enlargement of central portion of the Master Plan



# "PROMENADE & PLAY": ILLUSTRATIVE PLAN





# INSPIRATIONAL PHOTOS COLLAGE

**Climbable “Lighthouse Towers”**  
Minnesota Fire Towers



Photo via: Jordan Mileski, [www.minnesotamonthly.com](http://www.minnesotamonthly.com)

**Promenade Steps**  
Avon River Park Terraces & City Promenade



Photo via: LandLAB (3), [www.bestawards.co.nz](http://www.bestawards.co.nz)

**Viewing Platforms on Bridges**  
Willis (Sears) Tower



Photo via: [www.atlasobscura.com](http://www.atlasobscura.com)

**Sloped Bioswales (Replacing channelized banks)**  
Biofiltration Marsh with Native CA Plants



Photo via: [www.ccber.ucsb.edu](http://www.ccber.ucsb.edu)

**Pilotis Buildings in Flood Zones**  
The UW Faculty Club



Photo via: [www.classhaus.com](http://www.classhaus.com)

**Bridge and Riparian Buffer Zone over Daylighted Storm Drain**  
The Mariners’ Museum & Park



Photo via: [www.marinersmuseum.org](http://www.marinersmuseum.org)

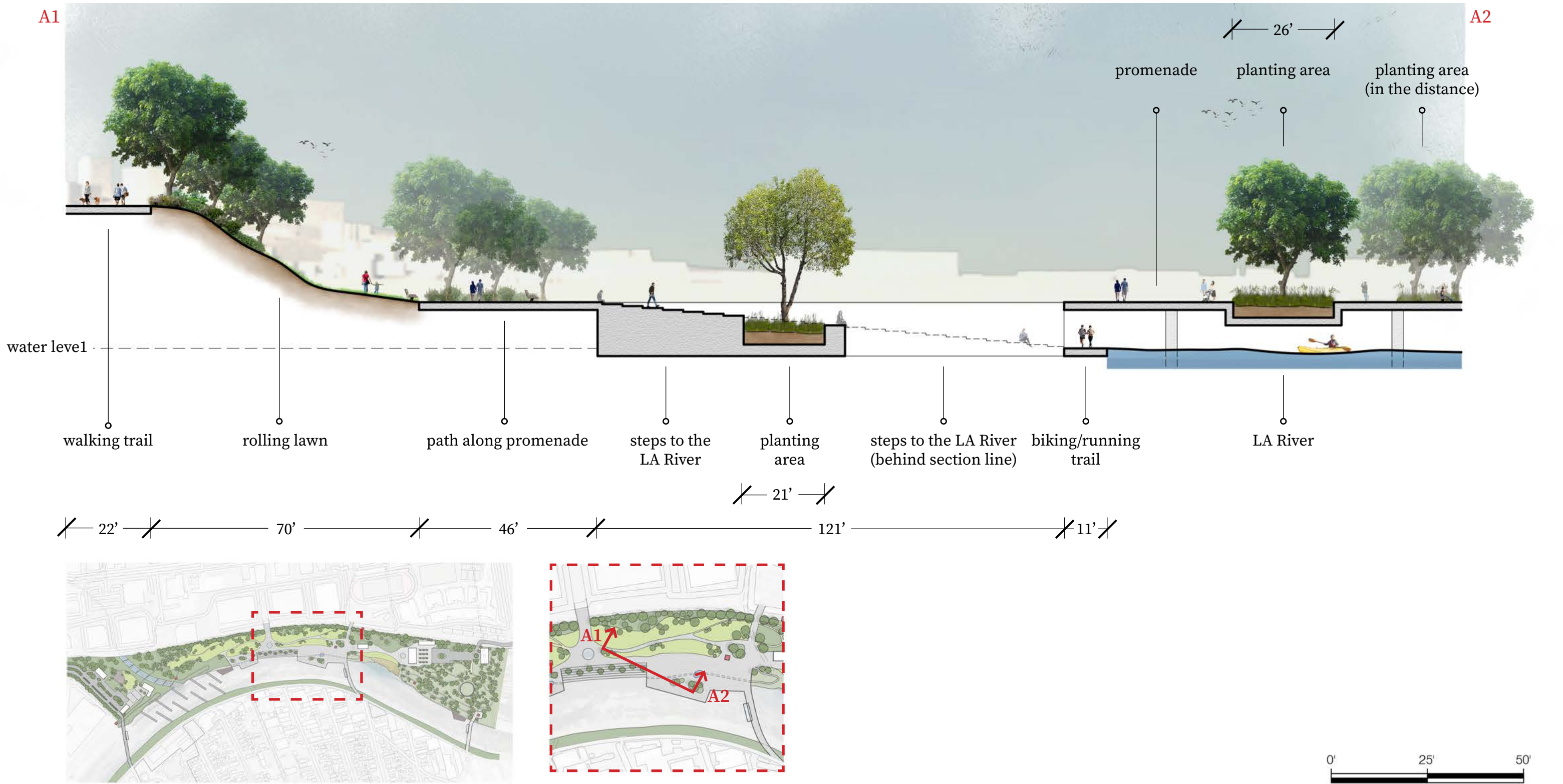
**Trail over Wetlands/Flood Detention Bioswale (“Area 26”)**  
Wakehurst Wetland Boardwalk



Photo via: [www.thewilddeckcompany.co.uk](http://www.thewilddeckcompany.co.uk)

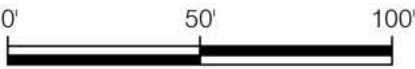
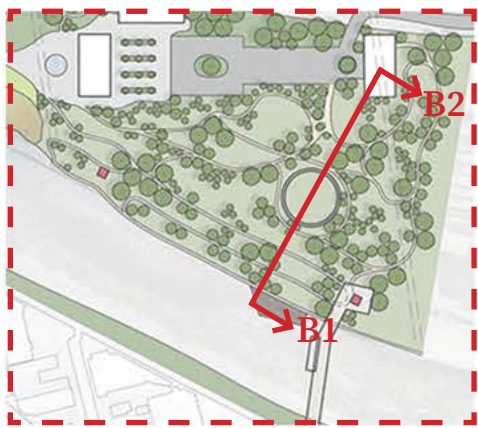
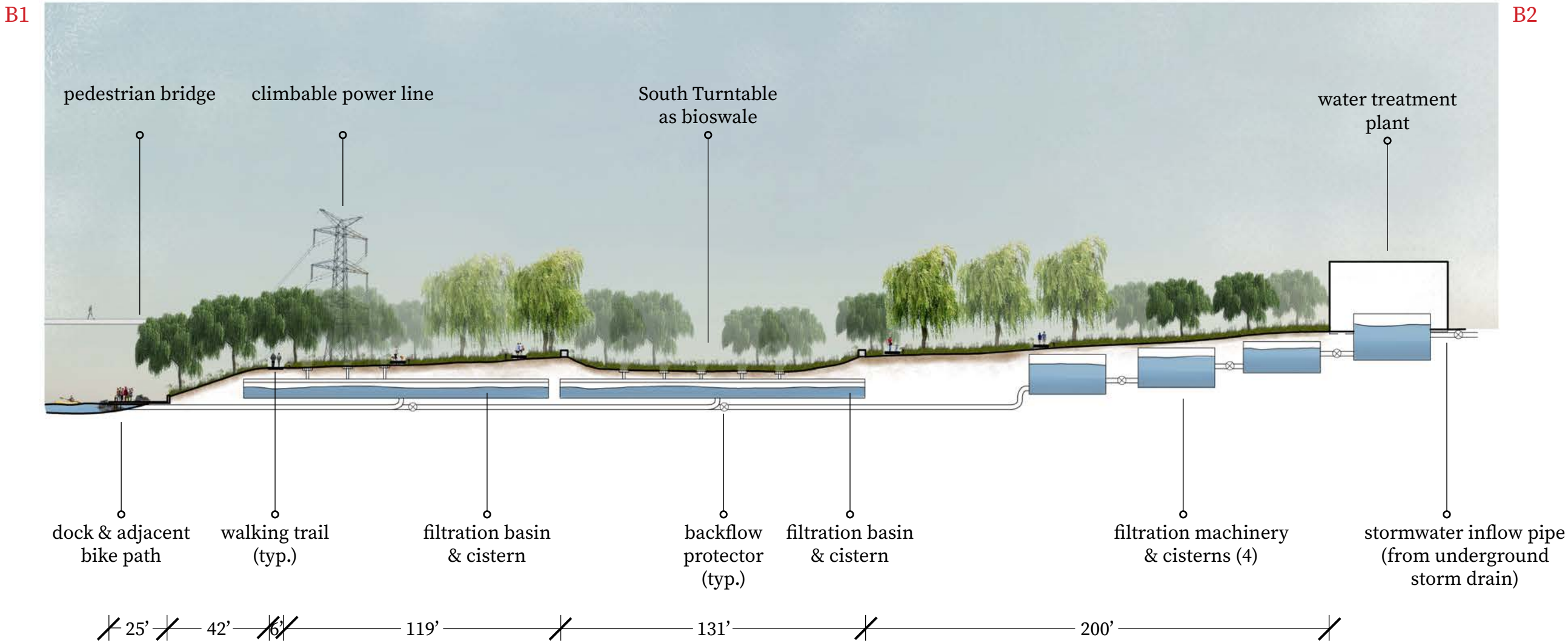


# SITE SECTION AA: STEPS TO THE LA RIVER & PROMENADE





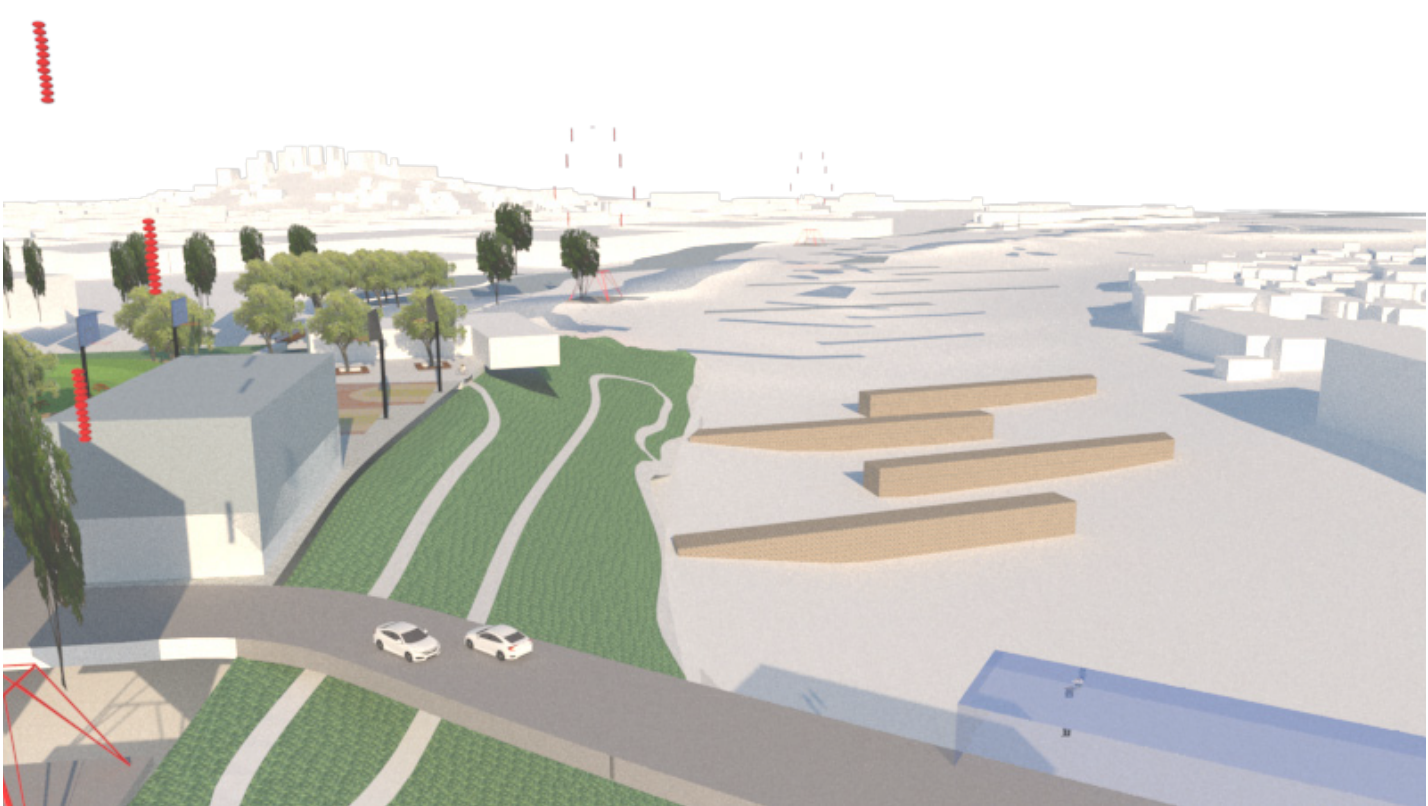
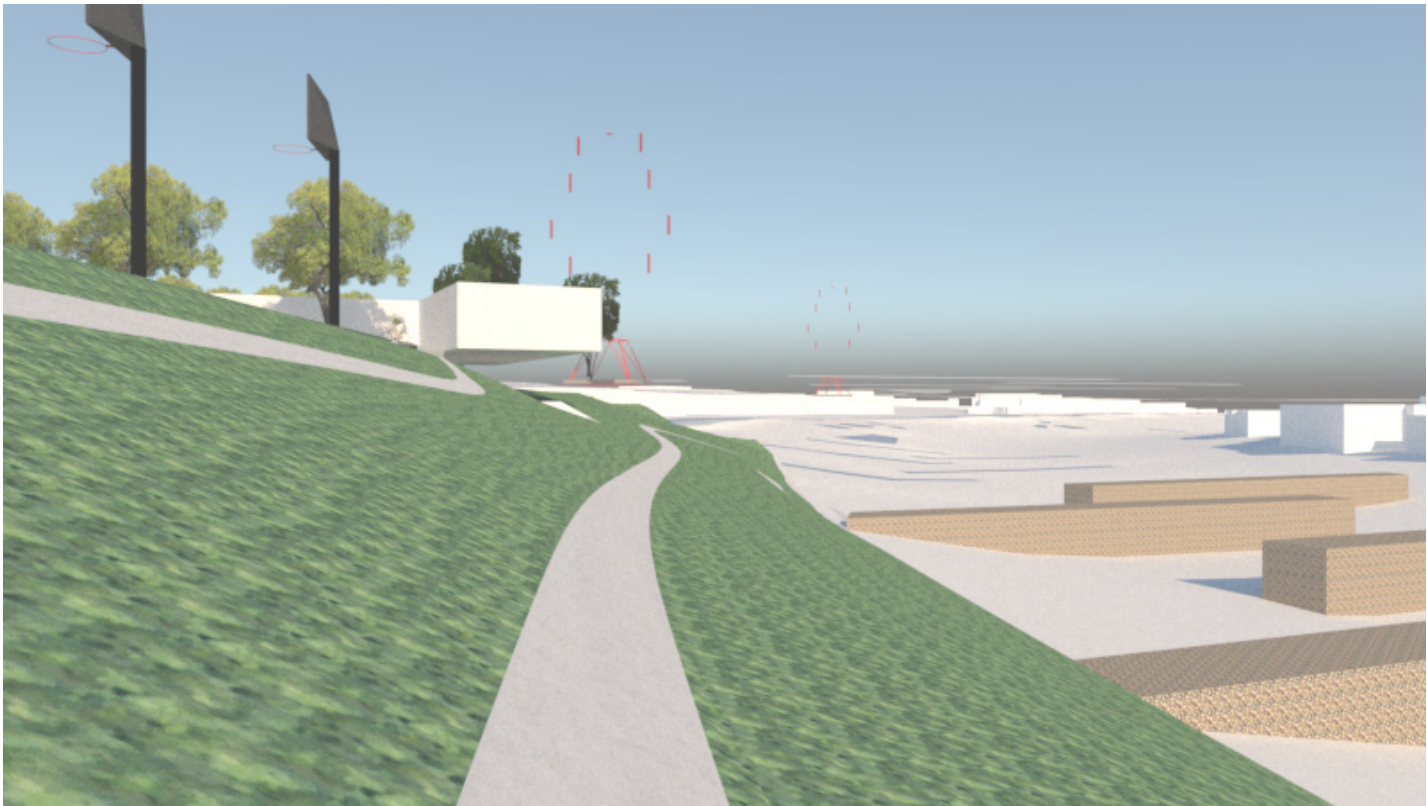
# SECTION BB: LID SYSTEM IN FLOOD DETENTION BIOSWALE





# PERSPECTIVES & WALKTHROUGH VIDEO

PROMENADE & PLAY SKETCHUP “WALKTHROUGH” VIDEO (NORTH END OF THE SITE):  
<https://drive.google.com/file/d/1qQDFuguZ2mkkkyoo4aoHQtvOIAvRM7gi/view?usp=sharing>





Rivkah Spolin