

**COLISEUM BART STATION  
GREEN RETROFIT  
Snell St-San Leandro St  
Oakland, CA**



Edith Munguia  
Landscape Architecture  
Senior Project  
UC Davis 2014



# COLISEUM BART STATION GREEN RETROFIT

2014 Senior Project, Edith Munguia

Presented to the faculty of the Landscape Architecture Program at the University of California, Davis, in partial fulfillment of the requirements for the degree of Bachelors of Science in Landscape Architecture on June 13, 2014.

Accepted and Approved by:

Elizabeth Boults, Senior Project Faculty Advisor

Kevin Perry, Committee Member

Jim Harding, Committee Member

Benjamin Munguia, Committee Member



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# ABSTRACT

This project is intended to serve as a proposed master plan for the Coliseum Bart Station in order to renovate the current site to further develop community engagement and connectivity to the surroundings of the site and the site itself. The site is divided into three nodes that will be designed: a new elevated bridge, retrofitting San Leandro Street, and a new community park.

The proposed master plan design includes a new-elevated bridge that connects the community park and a safer connection to the Bart Station rather than the existing entrance, which is currently an underground tunnel. The second node will provide a new retrofitting street design for San Leandro Street, which will encourage the public to explore and learn more about the green street design. A successful streetscape will transform its community for the better. The last node will be a community park that will be inviting for the nearby new housing developments. It will include a play area for kids to play while at the same time have benches and tables available for families to enjoy a wonderful day at the park.

The process for developing the master plan for my site involved research on similar case studies, site analysis, and provide design solutions for all of the three nodes.



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# DEDICATIONS

## **A mis padres, hermanos, y hermana:**

Yo se que despues de aver cresido siendo la ultima de la familia fue un gran cambio para todos pero disde pequeña sabia que yo era la que algun dia ayudaria. Dejaron nuestro querido Mexico para de una manera o otra sacarme adelante. Yo soy quien soy por todo lo que ustedes me an enseñado y los valores que me an inculcado y hoy en este dia que marca el comienso de algo nuevo para mi al terminar mi carrera les quiero dedicar este exito con todo mi corazon. Por todo el apoyo y consejos que me andado todo este tiempo les quiero dedicar este exito con todo mi corazon. Los amo con todo mi corazon los quiero muchisimo.

## **To Alberto Pandurini:**

I would just like to say thank you so much from the bottom of my heart for putting up with me when I would stress so much with my projects and yet you still managed to encourage me to continue. Even though my major kept me super busy you still managed to stick around and shown me that I had to continue for my family and for all my goals I had. You have gone out of your way to help me on those sleepless nights, helping me edit my writing, giving me input on my projects, even just giving me a call to ask how far I was I appreciate everything you have done for me.

---

# ACKNOWLEDGEMENTS

To my committee members:

Kevin Perry, Jim Harding, and Benjamin Munguia thank you all for your guidance and support throughout this process. specially for all your constant encouragement, insight, and patience in working with me.

To Gayle Totton and Elizabeth Boults:

Thank you all for your guidance, support, and patience in working with me (especially listening to my worries and understanding them).

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# PREFACE

Throughout my college career, I have learned about how important it is to design landscapes that are safe, multi-functional, design aesthetic, and that respect the existing environment. I have come to understand how important it is to make an impact with communities and smaller children. The idea of designing the Coliseum Bart Station first came during spring of my sophomore year. Since I grew up in that area I wanted to improve the street and I thought that if I retrofitted the street I would be able to provide different options on how to improve it. But I realize that I kept changing my mind on all the multiple ideas I wanted to design in this site, so I had to narrow it down to just three. With the help of my committee members and faculty advisors I narrowed it down and decided to focus on improving the community by retrofitting the street, making a small park and a new safer bridge.

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- 1.01 Context Map by E.Munguia
- 1.02 Industrial Image- emi-network.eu (2012)
- 1.03 Vegetated Swale Section (Perry, 2014)
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- 1.05 Infiltration and Flow-ThoughPlanter (Perry, 2014)

## 2.0 Case Studies & Inspirational Examples

- 2.01 SW 12th Avenue Green Street- Bureau of Environmental Services, City of Portland (2006)
- 2.02 Washington DC Union Station Master Plan- inhabitat.com (2012)
- 2.03 Pittsburg/ Bay Point Bart Master Plan- City of Pittsburg (2011)
- 2.04 Fruitvale Transit Village- pgadesign.com
- 2.05 Olympic Sculpture Park- landezine.com (2011)
- 2.06 Balboa Park Station Area Plan- sf-planning.org (2004)
- 2.07 Los Angeles Union Station Master Plan- bustler.net (2012)
- 2.08 Erie Street Plaza- stoss.net (2010)

## 3.0 Green Strategies

- 3.01 Interlocking Pavers- mgmunguiaspavingstone.com (2012)
- 3.02 Stormwater Planter- phillywatersheds.org (2014)
- 3.03 Vegetated Swale- werf.org (2007)

## 4.0 The Site

- 4.01 Miscanthus sinensis 'Blutenwunder'- bluestem.ca
- 4.02 Hedera helix- sunbreaknursery.com

- 4.03 Muhlenbergia rigens- fourdir.com
- 4.04 Phormium tenax- nzplantpics.com
- 4.05 Rhapsiolepis indica- landscape-solutions-for-you.com
- 4.06 Platanus hispanica- treesplanet.blogspot.com
- 4.07 Phoenix canariensis- estrellacanyonnursery.com
- 4.08 Site Analysis Pictures- Photos by E. Munguia
- 4.09 Site opportunities and constraints- by E. Munguia

## 5.0 Design

- 5.01 Design: Final Master Plan- by E. Munguia
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# INSPIRATIONAL QUOTE

“No matter what happens, or how bad it seems today, life does go on, and it will be better tomorrow.”

-Maya Angelou



01

INTRO

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**duction**



# CITY DEMOGRAPHICS

The City of Oakland is 18 miles northeast of San Francisco California and is known as a major West Coast port city. The city's population according to city data was 400,740 people in 2012. The city has a diverse background 27.4% of the people being Black or African American, 25.3% White, 24.4% Hispanic or Latino, and 17.8% Asian.

According to the City of Oakland website, Oakland's diverse population, hip arts scene, Mediterranean climate, world-class attractions, abundant parks and open spaces, vibrant waterfront and lakefront, historic architecture, restaurants, nightlife, action-packed pro sports and varied recreation options make for an exciting destination. Oakland has also long been the nation's largest underserved Trade Area for comparison goods.

The current site is owned by the City of Oakland and the surroundings of the selected site include the Oakland Coliseum, the Oracle Arena, the Coliseum Bart Station, new low-income homes, industrial/warehouses, and restaurants. San Leandro Street is a valuable street because it is close to the I-880 freeway and it's a back street that takes all the way to Fruitvale Avenue, a very busy, central street in Oakland. It also takes you to the city of San Leandro and connects to East 14th Street, which connects to several nearby cities.

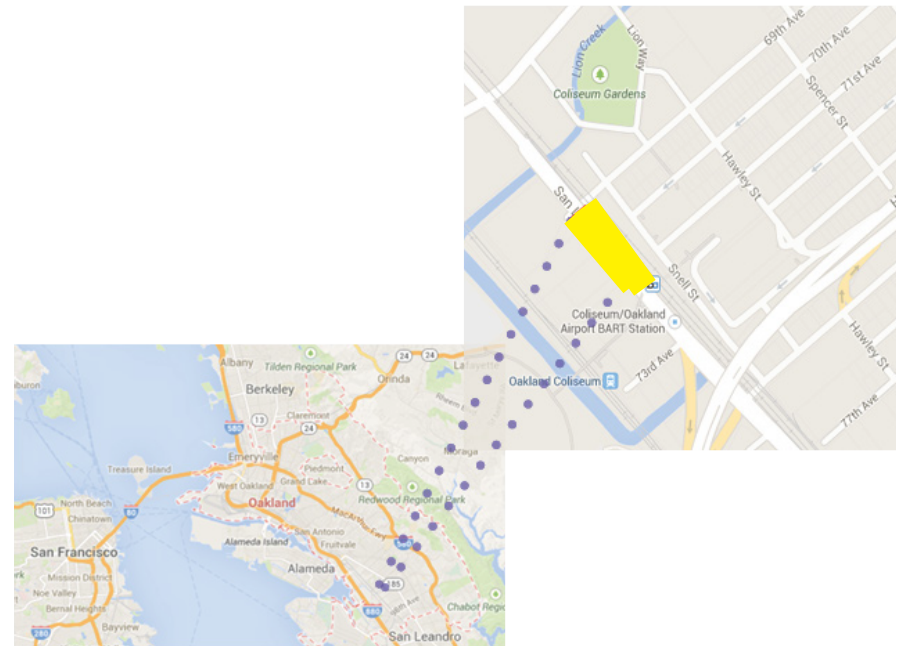


Figure 1.01  
Context Map

# PROJECT DESCRIPTION

San Leandro Street is currently an unutilized industrial street that has no experiential or engaging meaning for people who work and live nearby, or just drive near the location. Currently the City is focusing more on redeveloping the waterfront facing Alameda, CA, but is not looking into what many Oakland streetscapes, such as San Leandro Street, need to be redeveloped as well. By redesigning a new streetscape, adding a community park and providing an accessible bridge it will engage people to appreciate the landscape that once was never foreseen. The results will give the area a facelift, and revitalize a once forgotten or neglected area into a new place to gather, explore, and embrace.



Figure 1.02  
Industrial Image of a site near a freeway.

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# PROBLEMS & OBJECTIVES

## Problems:

- No bike accessibility
- Underground tunnel
- Safety hazard during the night
- Unutilized space
- No enjoyable spaces
- Lack of sitting areas
- Lack of plants

## Objectives:

- To promote pedestrian safety
- Create a sense of connectivity
- Create an open space for the community
- To incorporate art and educational signage to create a sense of space as well as educating the pedestrians of the value of landscape and stormwater management
- Improve pedestrian walkability through this specific area

# DEFINITIONS

The following definitions and section images are demonstrations of some of the stormwater facilities used for the proposed master plan.

## What is the term Stormwater?

There is a variety of definitions for what stormwater means, but for the purpose of this project it means the water that runs off surfaces such as rooftops, paved streets, highways, and parking lots.

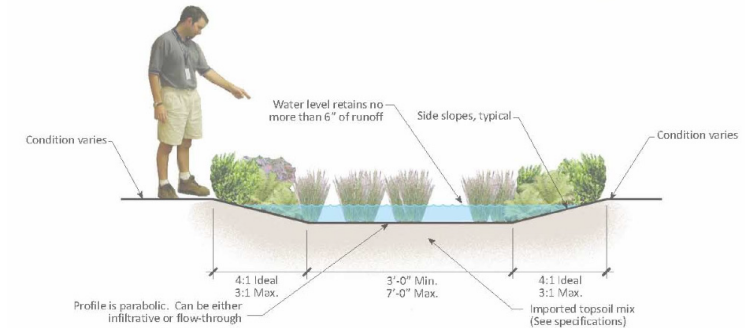


Figure 1.03

## What is a Vegetated Swale?

“Vegetated swales are shallow landscape areas designed to capture, convey and potentially infiltrate stormwater runoff as it moves downstream.” (Perry, 2014)

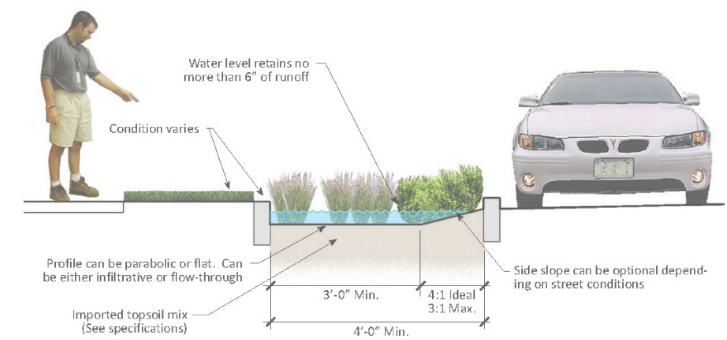


Figure 1.04

## What is a Stormwater Curb Extension?

“Stormwater curb extensions are landscape areas within the parking zone of a street that captures stormwater and allow it to interact with plants and soil.” (Perry, 2014)

## What is an Infiltration and Flow-Through Planter?

“Infiltration and flow-through planters are contained landscape areas designed to capture and retain stormwater runoff.” (Perry, 2014)

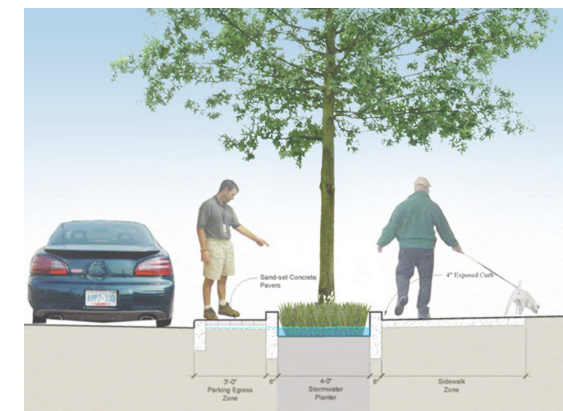


Figure 1.05



02

CASE STUDIES &

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**inspirational  
examples**



# SW 12TH AVENUE GREEN STREET

SW 12th Avenue Green Street is one of many examples in Portland, Oregon of great complete streets that have incorporated stormwater facilities. This study manages stormwater while also providing pedestrian circulation with a pedestrian egress zone and pedestrian crossings. This case study is an example of an infiltration planter stormwater facility.

This project has done a terrific job in implementing their goals on managing the stormwater from the street into the infiltration planter. Some positive aspects about this project are that the run off water from the street actually has a purpose before it goes into the drains. By utilizing the water to water the plants in the planters is more sustainable. Some constraints are the water from the streets could pick up toxins that might harm the plants in the infiltrated planters. People could disobey and step over the planting if they are careless about the sustainable action being promoted.

For my project I want to utilize the same idea of using infiltrated planter stormwater facility along my new proposed park site because it will help educate people as they are parking to head over the park. It will not only educate them about the change is doing to the neighborhood in making it more sustainable, but the impact is making on the environment and on the children that are going to be visiting the park.



Figure 2.01  
Overview of the stormwater planters showing the egress zones and pedestrian crossings.

# WASHINGTON DC UNION STATION MASTER PLAN



Figure 2.02  
Overview of the future renovation of the master plan that might be completed in 2018.

According to Bridgette Meinhold from the *Inhabitat* online magazine, Washington D.C.'s Union Station is the second busiest train station behind New York's Penn Station, but it hasn't been improved since it was built in 1907. Two recent firms, HOK and Parsons Brinkerhoff recently designed a master plan that could cost \$6.5 billion (Meinhold, 2012). This train yard will soon be beautified and renovated for their passengers to enjoy a mixed-use eco development.

This project is not going to be completed perhaps until 2028, but from the recent plan maps and perspective images this site looks like it still does a great job implementing their goals. Some positive goals this project has are to make a pleasant area for people to enjoy and gather, to provide an improved connection with the current city public transport, and it will also be prepared to accommodate the new fast trains. A constraint I found for this project is that it does not have a for sure completion date.

I will use one of the main ideas incorporated in this project, which is making sure I can connect my three new nodes with the existing spaces very smoothly.



# PITTSBURG/ BAY POINT BART MASTER PLAN



Figure 2.03  
Overview of the circulation map which is being used to resolve potential issues between the different transportation modes being used around the area selected.

Pittsburg/ Bay Point Bart Master Plan main purpose is to implement better transportation and circulation improvements for their communities. According to the City of Pittsburg (2011), their plan will connect residents and businesses in the Pittsburg to the larger Bay Area through transit, which has been a community priority.

This project has not been completed it is meant to be completed in the year 2020. But overall the City of Pittsburg has made a good choice in the overall goals that they have for the site. Some of the positive goals that they have in mind are to reduce greenhouse gas emissions and gas automobile trips by promoting sustainable developments that have better circulation for bicyclist, pedestrians, and transit riders (City of Pittsburg, 2011). I feel like the only constraint is that since it is a large project it won't be completed until 2020.

I feel like from this project I mainly want to incorporate some of their goals that really stood out to me. Such as creating attractive, usable, and inviting public spaces and building a sense of community and place for people to gather and enjoy.

# FRUITVALE TRANSIT VILLAGE

The Fruitvale Transit Village is located in the City of Oakland and is the result of a broad-based partnership among public, private, and nonprofit organizations working together to revitalize a community using transit-oriented development (U.S. Department of Transportation Federal Highway Administration, 2011). The purpose for this study was providing a better connection between the Bart Station and the community. Currently this project has succeeded and provided many jobs for the community members and provided a more attracting and pleasurable walk to the Bart Station. This project has done an excellent job in implementing their goals because the current site is very successful. It is a main attraction on Sundays people tend to gather with their families there and go to the small shops. Some positive goals that this project brings to its neighborhood are a sense of place, community gathering and a place to explore. Through art work, bright colors, and frequent live events that happen in the weekends this place welcomes its community members and allows them to gather and mainly have fun. I feel like the only constraint is that it should be extended more to the other side of International Boulevard facing the current Fruitvale Transit Village.

I will use some of the ideas from this project that mainly focus on community involvement and educating them the importance a small change can make to an area that was once just an empty lot.



Figure 2.04  
Overview of the Fruitvale Transit Village with retail shops and beautiful outdoor ambiance.



# OLYMPIC SCULPTURE PARK



Figure 2.05  
An aerial view of the sharp angles that create the uniqueness of this park.

Olympic Sculpture Park is located in Seattle and was opened in 2007. This beautiful park is not just any regular park its revolutionary Z shape design path makes it one of the most unique parks whose objectives are several environmental restorations including the large range of native plants being used (Seattle's Art Museum, 2010). This park also is known for the wonderful sculptures it displays in its beautiful urban setting, which is very similar to The Highline since it also has sculptures as you walk along the elevated park.

This project has done an outstanding job implementing their goals. Not only is it an extraordinary site that was constructed in an industrial location in 2007, but also it has a welcoming feel to the beautiful landscape it provides. Some of the positive goals this park radiates the sense of open space and incorporation of artwork. Some constraints would have to be the limited parking and how there's a charge to park.

I want to incorporate an interesting bridge design not as sharp edge as the one in Olympic Sculpture Park, but something similar. I also like the intention of the park of having open space for people to enjoy and do outdoor activities.

# BALBOA PARK STATION AREA PLAN

The Balboa Park Station Area Plan is in south central San Francisco, which includes the Transit Station Neighborhood, City College of San Francisco, the Reservoir, and the Ocean Avenue Commercial District. According to the San Francisco Planning Department, The Plan's objectives and policies are informed by three key principles; 1) To improve the area's public realm, 2) To make the transit experience safer and more enjoyable, and 3) To improve the economic vitality of the Ocean Avenue Neighborhood Commercial District. Overall this plan is intended to improve that way people access the area as well as to connect them to their community surroundings.

This project does a good job implementing a good connection between the new BART entrance by not only enhancing the safety of the passengers, but also making it accessible. Some positive aspects about this project are that it wants to improve the circulation for pedestrians, bicyclist and improve transit. There isn't really a constraint for this project it did what it said it was going to do and so far it has succeeded.

I would use some of the ideas implemented in this project in some of the new nodes I want to create, such as making sure there is a positive and smooth connection to the new bridge and Community Park.



Figure 2.06  
A conceptual rendering of the City of San Francisco.



# LOS ANGELES UNION STATION MASTER PLAN



Figure 2.07  
Bird's eye view of the future look of the new Union Station.

The Los Angeles Union Station is one of the most transit areas due to the connectivity it has with the other Southern California counties. The Master Plan will incorporate the following goals: 1) To celebrate the site's history, 2) To improve the Union Station passenger experience, 3) To create a great destination, 4) To prepare for the High Speed Rail (Hymon). Not only is this project going to improve for the better, but also it will help improve and provide more for the surrounding neighborhoods. This project is not going to be completed until summer of 2014, but their overall goals share the same values as the other previous case studies. They want to be able to improve their passengers experience and create a better place for its visitors. A positive aspect is that it wants to make sure to celebrate and acknowledge the history of the Los Angeles Union Station. Some of the ideas I wish I could use in my project would be to let visitors know that the site is an open space to use and enjoy.

# ERIE STREET PLAZA

Erie Street Plaza is located in the City of Milwaukee. This area is a large open space that was meant for daily activities, such as walking or biking. This plaza is similar to The Highline that can be utilized for small private gatherings and at the same time can be for larger events (Stoss, 2010). It is also similar to The Highline in the way it blends hardscape with the landscape making a strong connection between the two elements. The Stormwater captured on the plaza has to go through a cycle that helps with the sustainability of the plaza.

This project does a really good job implementing their goal of reusing their stormwater. A great positive aspect is the way this site combines landscape and hardscape in a way that is still very inviting.

I will utilize some of the ideas used in this project such as using stormwater facilities and using hardscape and landscape.



Figure 2.08  
Overview of Erie Street Plaza and its beautiful waterfront.

A large, stylized tree graphic in the background, composed of many thin, light green lines that form the branches and trunk. The tree is centered and occupies most of the page.

03

GREEN

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strategies



# GREEN STRATEGIES

The term Green Strategies incorporates a variety of different techniques where stormwater can be controlled. For instance, the following methods are great Green Strategies, but are hardly utilized due to the amount of money and time they take to get installed.

## Pervious Interlocking Joint Pavers

### Positive Aspects

- Is more common and can be used in streets and parking lots.
- There is various shapes and sizes for the designs when applying pavers.
- Can be repaired easier than other strategies.

### Negative Aspects

- It can require more labor in order to be installed.



Figure 3.01

## Stormwater Planter

### Positive Aspects

- Can help slow down stormwater in heavy storm events.
- Great way to handle stormwater.
- Stormwater can infiltrate or flow through.

### Negative Aspects

- Not the best for small areas.
- Planters do require some kind of infrastructure.



Figure 3.02

## Vegetated Swale

### Positive Aspects

- Very easy to install.
- The most well known stormwater facility strategy.
- Cleans and directs water wherever it gets directed to.

### Negative Aspects

- Cannot manage a lot of stormwater runoff.
- Can sometimes be hard for pedestrians to cross unless there's a crossing.
- Tend to be on the long side to effectively manage water.



Figure 3.03



04  
THE

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site



# PLANT PALETTE

Figure 4.01



Figure 4.02



Figure 4.02



Figure 4.03

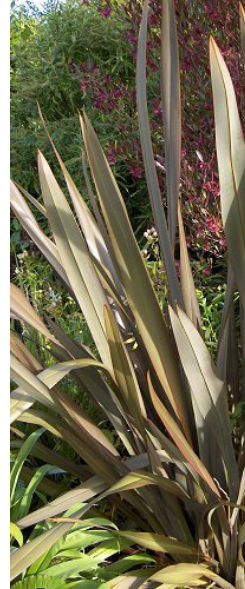


Figure 4.04

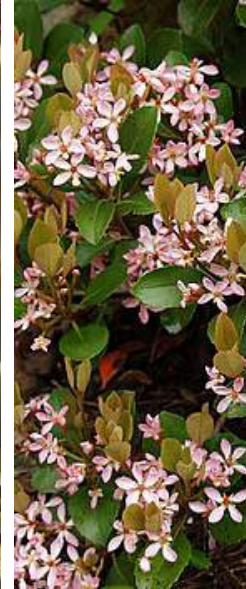
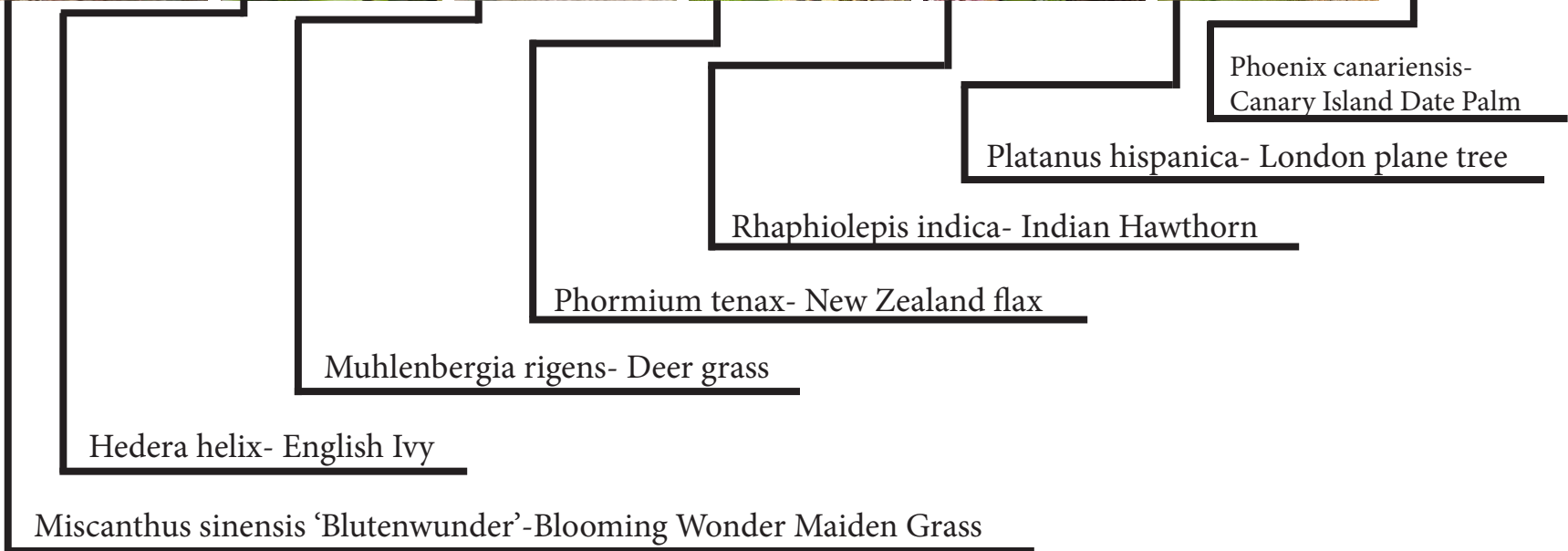
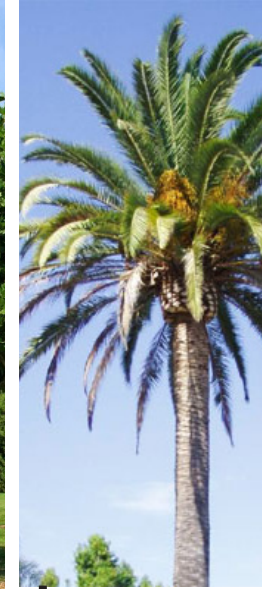


Figure 4.05



Figure 4.06



# SITE ANALYSIS PICTURES



1 Wide sidewalk



11 Dead tree and missing grate



10 Fenced empty space under the BART



9 No sidewalk next to empty lot



2 Extruding ramp



8 Entrance to existing under tunnel to BART



3 Vandalized fence



4 Wired fencing



5 Loading and unloading zone



6 Empty lot in the corner of Snell St.



7 Trash not disposed properly

Figure 4.08

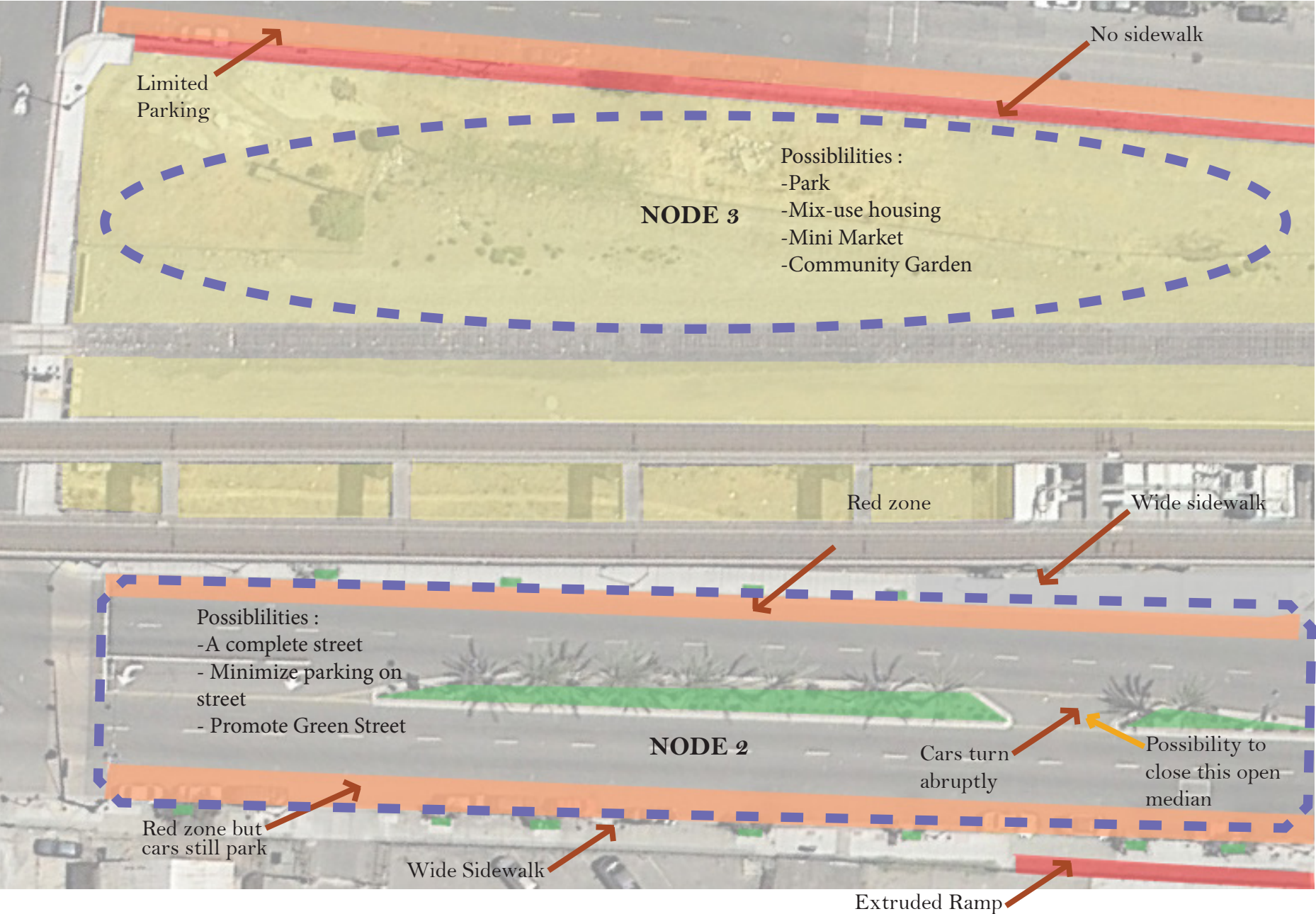


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# SITE ANALYSIS

The current street profile has two lanes in each direction street parking that is limited red zones and two spots where taxis can park. Currently on site there is a lot of vandalism and this can be due to the fact that the area is secluded because there's a lot of industrial warehouses. There were no tree canopies except for the six tall palm trees that stand in the median between the roads. It seemed like the city tried to plant small 15-gallon trees, but they were either dead or had trash all around them. The sidewalks were very wide and in the sidewalk nearest to the coliseum there was an abrupt ramp where it can cause pedestrians to trip. This street is not a bike friendly zone and does not have any bike parking. The images on the left page show a few of the circumstances this street are currently going through.

# SITE OPPORTUNITIES AND CONSTRAINTS



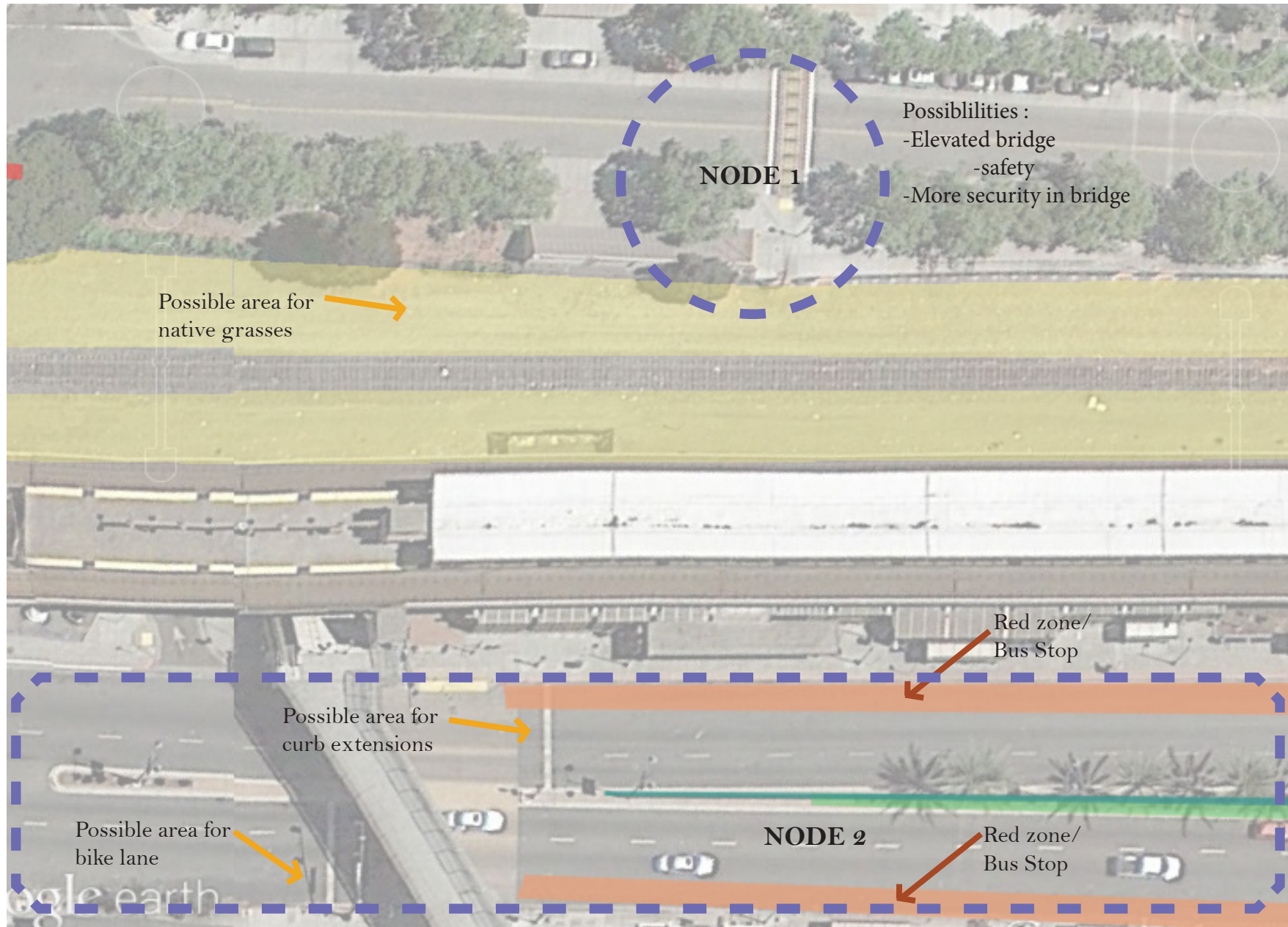


Figure 4.09



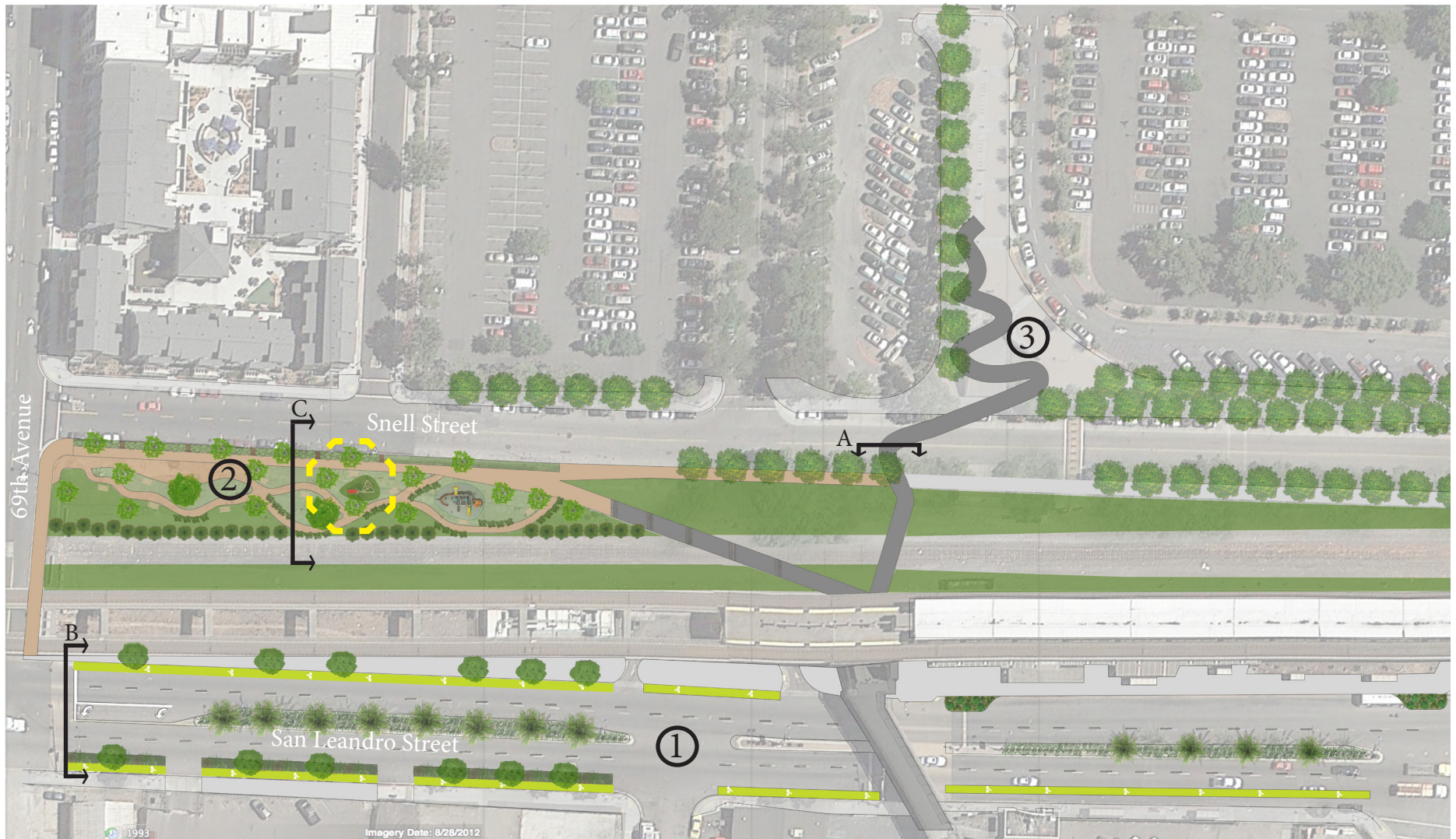


05  
THE

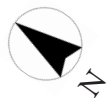
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design

# FINAL MASTER PLAN



Scale:  
1/32" = 1'-0"



①

New Retrofitted San Leandro Street

②

New Proposed Community Park

③

Renovated BART Station Bridge

— Community Park Zoom-In

— Section Cuts

Figure 5.01



# BART STATION BRIDGE PERSPECTIVE



Figure 5.02  
Before image of site.



Aerial view of perspective.

This perspective shows the new proposed BART bridge, further back in the image, which is ADA accessible while the other bridge near the park is a stair case bridge. Both bridges are safer than the current underground bridges. In this perspective you can also see the new proposed Community Park that will promote the community to gather and enjoy the beautiful outdoors.



Figure 5.03  
After image of site.

# SAN LEANDRO STREET PERSPECTIVE

This perspective introduces the new complete street in San Leandro Street. The new street provides a new bike lane, while removing the red parking zones and utilizing that space for a green strip and bike lane. This new change improves the circulation in San Leandro Street.



Figure 5.04  
Before image of site.



Figure 5.05  
After image of site.



Aerial view of perspective.



# COMMUNITY PARK PERSPECTIVE



This perspective shows the new proposed Community Park that will be replacing the empty lot that is currently there as seen on the before image. The park will provide seating, plenty of shade, 2 playgrounds, and enough open space to gather or have outdoor events.

Figure 5.06  
Before image of site.



Aerial view of perspective.



Figure 5.07  
After image of site.

# BART STATION BRIDGE SECTION

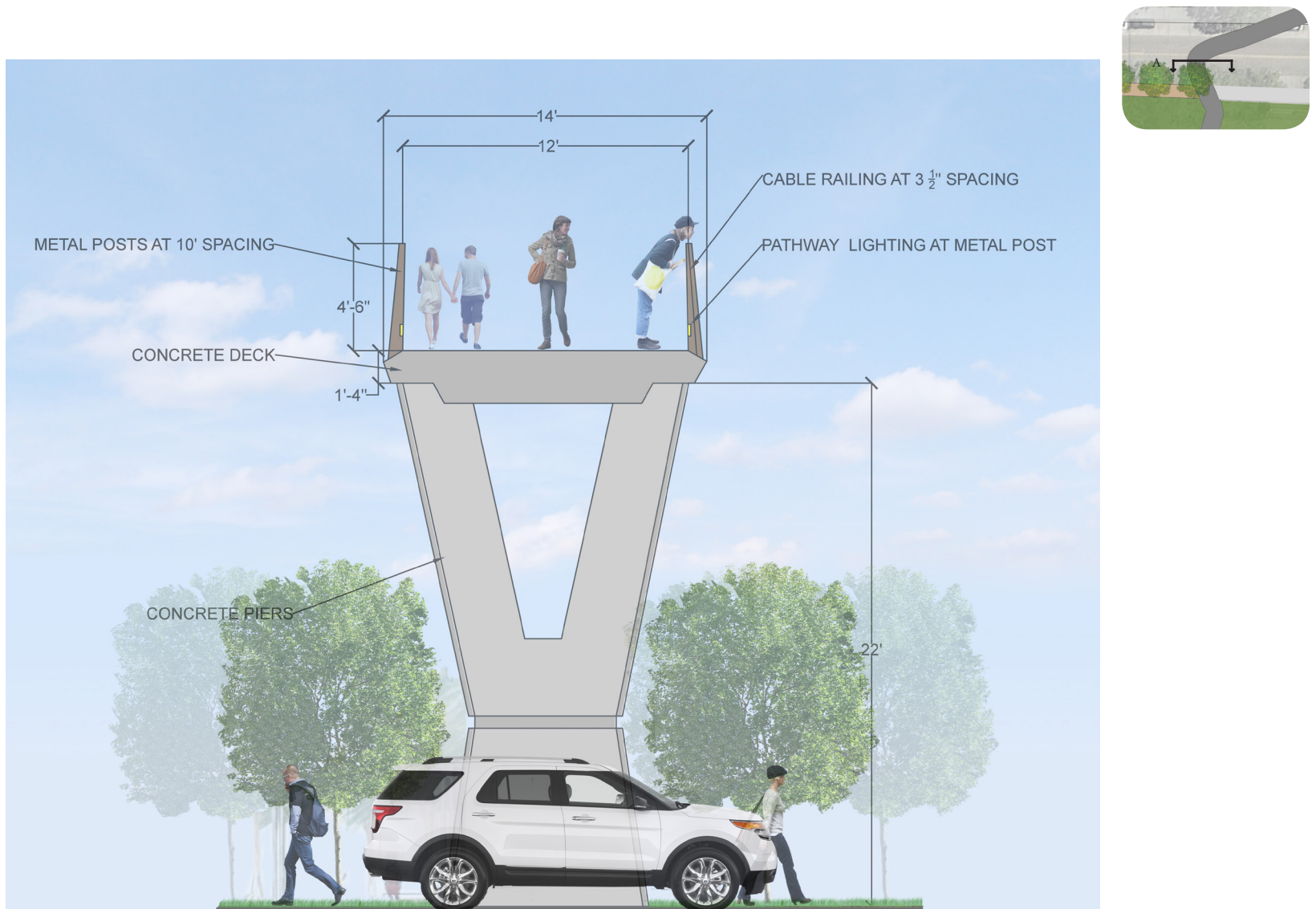


Figure 5.08

This section shows the dimensions and the material of the New ADA BART Bridge.



# SAN LEANDRO STREET SECTION

Figure

This section shows the proposed complete street of San Leandro Street. It also indicates the dimensions for street and demonstrates clearly how everything is separated. Currently the median already exists what will be added would be the bike lane on both sides minimizing the wide sidewalks on both ends.

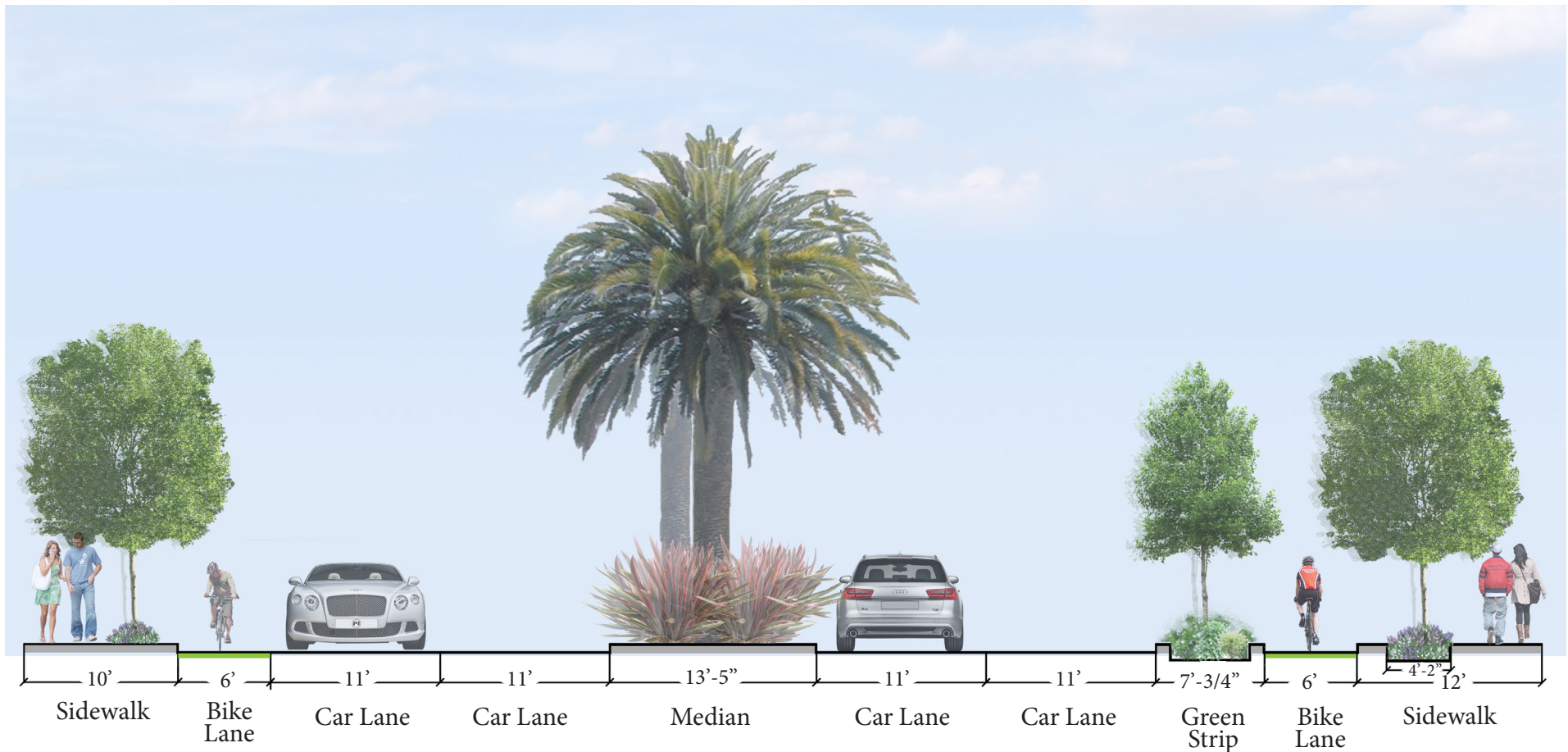
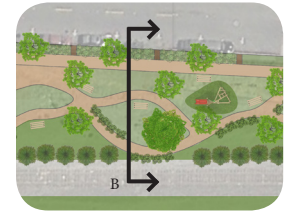


Figure 5.09

# COMMUNITY PARK SECTION

Figure  
 This section demonstrates the Community Park more in depth. For instance, it shows the different sizes of sidewalks located in the park and the grass open spaces, which vary in size as well. But an important aspect that this section shows is the parking egress zone and the infiltrate planter that is located at the edge of the park.

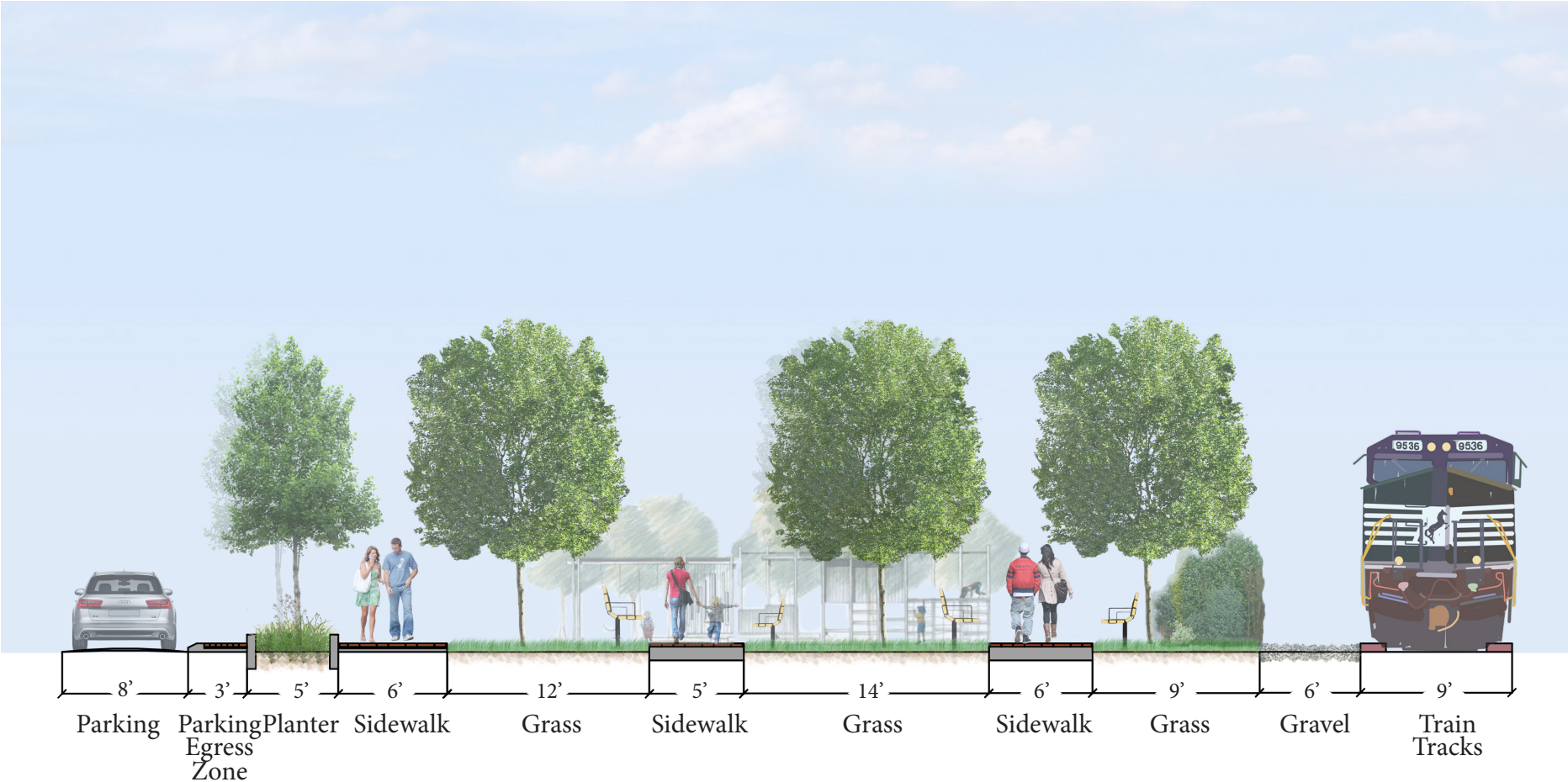
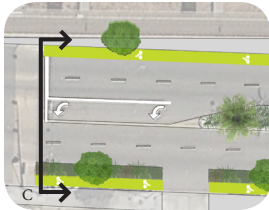
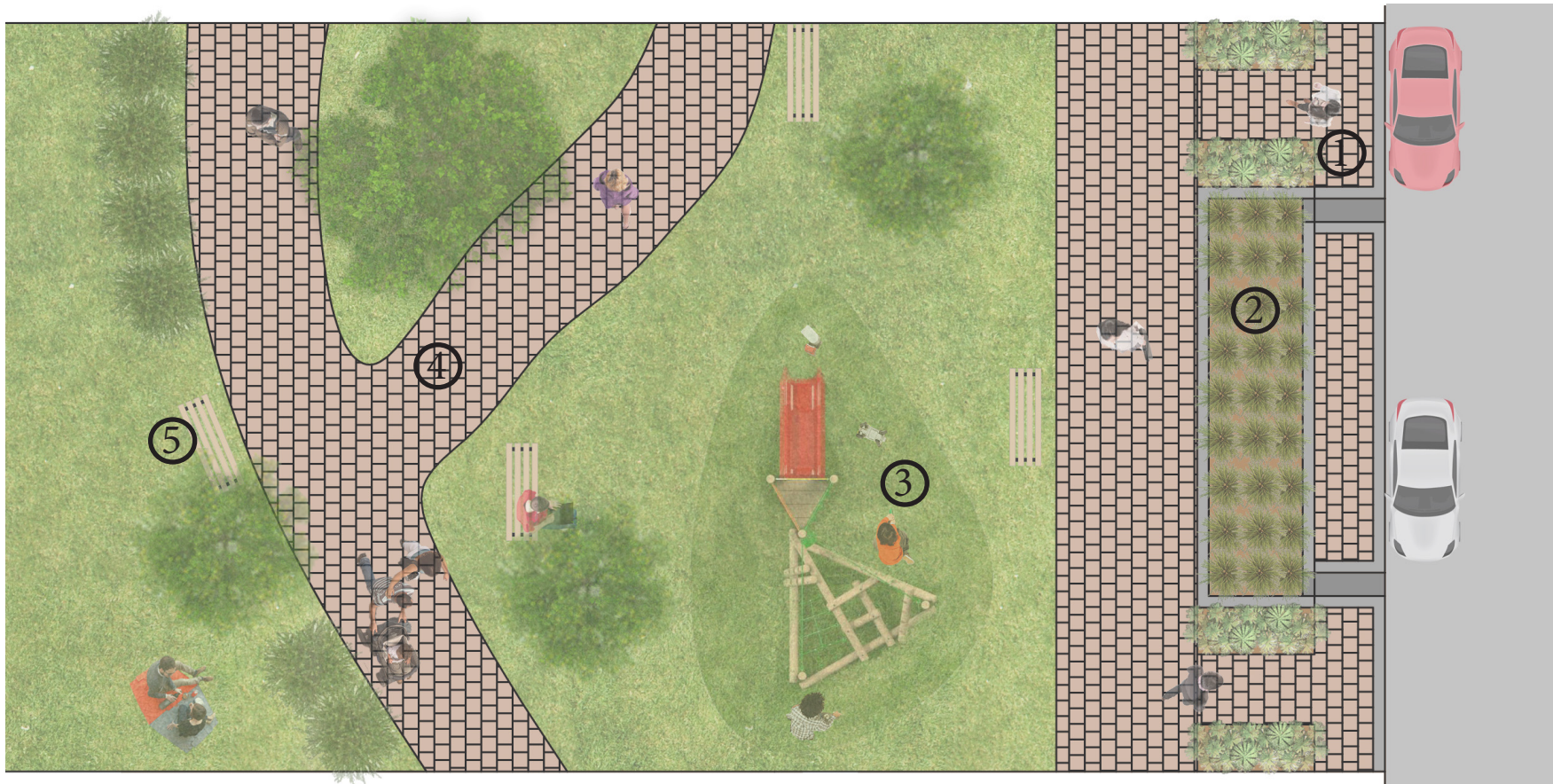


Figure 5.10



# COMMUNITY PARK ZOOM-IN

Figure  
This zoom in shows a more in depth aerial view of the park.



① Parking egress zone

② Infiltrated stormwater planter

③ Children 2-5 years old playground

④ Interlocking Pavers in sidewalks and egress zone

⑤ Wood benches

Figure 5.11



# Conclusion

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# CONCLUSION

The design for this project looks into three main nodes in Oakland. These nodes include San Leandro Street from 69th Ave to 72nd Ave, the empty lot in the corner of Snell Street, and the unsafe under tunnel entrances in Snell Street. The master plan provides new renovated improvement for all the areas specified. The main goal was to provide a more beautified sustainable design that will improve and make a greater connection to the surrounding community.

After conducting research and looking into the different case studies I realized that this project's purpose is to connect the community and make the circulation appealing for people to utilize. It is vital for an area like this one to be specifically pleasing and safe for the community to engage and understand the importance of the landscape. Currently there is no public space for people in the new developed homes on Snell Street to socially interact with others.

In conclusion the site is a great opportunity to provide the community with a place to gather, enjoy and learn more about green infrastructure. Even though there are some concerns since it is an industrilized area and many underprivileged neighborhoods surround the Bart Station that can be put to the side and focus on making a connection between the community and its surroundings a more pleasant experience. Not only is it important to enjoy and be exposed to nature, but by renovating and introducing the new proposed nodes the site will intrigue people to visit and explore.



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THANK YOU

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