

Prioritizing non-vehicular users: A redesign of Franklin Park's circulation to improve quality and usability

by

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Approved by:

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Abstract

Franklin Park, in Boston, Massachusetts, is a 500+-acre urban park designed by renowned landscape architect Fredrick Law Olmsted in the 1880s. A signature feature of Olmsted's design was the circulation system, which enabled parkgoers to navigate the site's unique topography through continuous and easily traversed paths (Boston Parks & Recreation Department 2022). However, starting with the introduction of cars into the park in the 1930s, the circulation system has since changed, resulting in an overall experience that is largely fragmented, unsafe, inaccessible, and confusing for non-vehicular users. Yet circulation quality is especially important for usability by non-vehicular users, like cyclists and pedestrians. Thus, this project sought to understand what design criteria matter most for a quality circulation system and how Franklin Park's circulation system could be redesigned to prioritize non-vehicular users.

To address the project's research question, a multi-step process was developed. The first step involved a literature review to determine the circulation needs of different non-vehicular user groups. Next, a review of existing analysis frameworks was done to determine what design criteria matter most for circulation quality and usability by non-vehicular users. From this, the Quality of Circulation for Non-Vehicular Users framework was developed. The framework includes twenty criteria organized into three categories—comfort, protection, and delight. Next, the framework was used to guide a precedent study of existing circulation systems to identify examples of the twenty criteria. Then, the framework was used to structure a site analysis of Franklin Park's circulation system to determine where improvements could be made. And finally, findings from the precedent and site analysis informed a projective design of Franklin Park's circulation system, which sought to improve the overall quality and usability for non-vehicular users through various macro and microscale design improvements. Ultimately, the Quality of Circulation framework was found to be a useful tool for guiding site analysis and informing design changes to improve circulation quality and usability. The framework's value extends beyond this report as it can be used by landscape architects, planners, and municipalities looking to transform and prioritize the non-vehicular user experience.

Prioritizing Non-Vehicular Users:



A Redesign of Franklin Park's Circulation to Improve Quality and Usability

John Kalamaja

Landscape Architecture Master's Report 2023



Prioritizing Non-Vehicular Users:

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Kansas State University

College of Architecture, Planning and Design

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Regional & Community Planning

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Key Terminology

→ *Non-Vehicular Transportation*

Non-Vehicular refers to human-powered transportation and low-speed electronic assist devices, which include but are not limited to bicycles, tricycles, wheelchairs, electric wheelchairs, scooters, skates, and skateboards (Zwald et al. 2018, 150; SCAG 2022, AASHTO 2021)

→ *Circulation*

Circulation refers to lines or patterns that lead people to, through, over, or around, either on foot or by other means of mobility (Starke 2013). Circulation is a significant function within any planned development because it establishes how users experience a designed space (Starke 2013).



Figure x.2: Winding Park Path at the Entrance of Franklin Park Boston, MA | By Unsplash User: Mark Olsen

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"I will always be your biggest cheerleader in everything you do"
- Mom

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big or small, that has not gone unnoticed and I am so appreciative of that! I love you both so much!

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Preface

Franklin Park, in Boston, MA, was designed in the 1880s by renowned landscape architect Frederick Law Olmsted. Coined the “Crown Jewel” of the city’s 1,000-acre Emerald Necklace greenway, Franklin Park is a 500+ acre urban wonder—full of opportunities to gather, explore, recreate, and connect with nature. However, years of overuse and disinvestment have left the park needing renewal.

In 2022 the City of Boston published the Franklin Park Action Plan, a seminal document outlining a future vision for the park. Central to the Plan’s recommendations is a recognition that “the park must return to its original principles: linking people and landscape, and cultivating access to natural open space,” and that the park must also evolve, to better support the needs of an increasingly diverse community and address a changing climate (Boston Parks & Recreation Department 2022).

To learn how park planning, design, and programming can more equitably and inclusively serve a diverse public, landscape architecture students in LAR-705 Master’s Project Studio undertook a case study of Franklin Park—

investigating its history, current condition, and future potential. In fall 2022, the students traveled to Boston to engage with design professionals and the authors of the Franklin Park Action Plan, and to conduct site observations and analyses at Franklin Park. The outcomes of the students’ collective work served as a foundation for their individual Master’s projects which sought to be evocative and aspiration, yet pragmatic and informed by evidence.



CHAPTER 01



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01

INTRODUCTION

The introduction section of this report provides infromation about the project's initiation, framing, and subsequent development. It details the project dilemmas, the development of the research question and goals.

Non-Vehicular Transportation

Non-Vehicular Transportation (N.V.T) refers to human movement, human-powered, or low-speed electronic assist devices, including but not limited to bicycles, tricycles, wheelchairs, electric wheelchairs, scooters, skates, and skateboards (Zwald et al. 2018, 150; SCAG 2022, AASHTO 2021). The importance of N.V.T. stems from its environmental and physical benefits. N.V.T produces the least pollution and emissions of all transport forms, contributing to sustainability efforts (Kim et al. 2022, 2; Aziz et al. 2017, 1208; SCAG 2022; AASHTO 2021). N.V.T also increases adherence to physical activity recommendations because it can easily be incorporated into daily lifestyles, influencing participation (Kim and Hall 2022, 3; Bruijn et al. 2009, 189; Parker et al. 2013, 101-102).

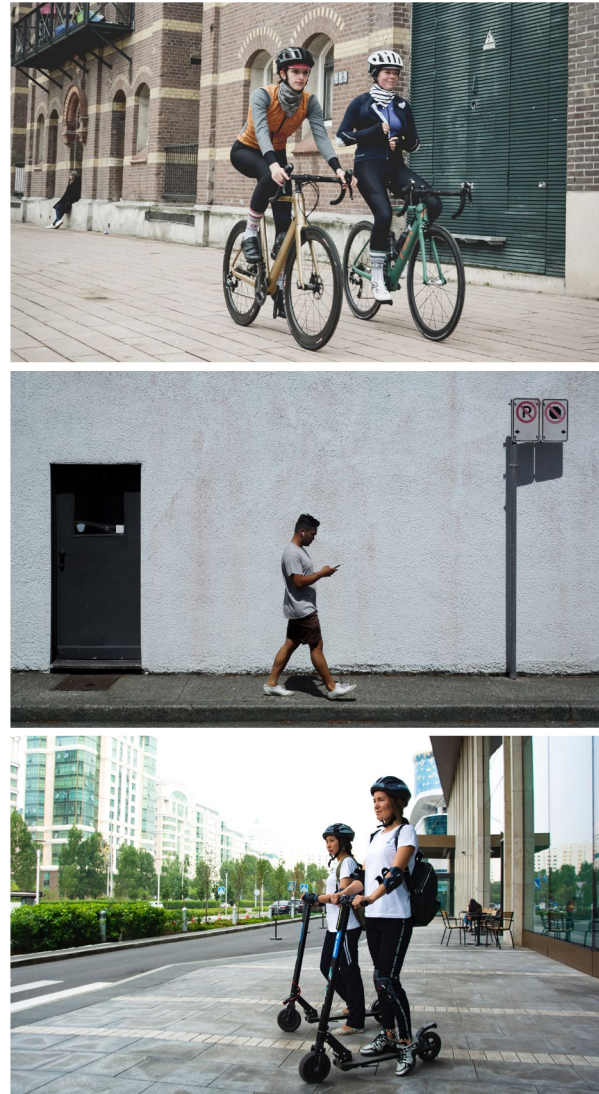


Figure 1.2: Non-Vehicular Users Collage | By Unsplash Users: Coen Van de Bro, Connell Shandler, and Marat Mazitov

Non- Vehicular Transportation and Urban Parks

Urban parks offer a unique setting within an urban environment, providing opportunities for physical activity, enjoyment of nature, social interaction, and escape (McCormack et al. 2010, 712; Kim et al. 2021, 1; Wang et al. 2015, 53; Alizadehtazi et al. 2020, 19; Starke 2013, 234; Zhan et al. 2021, 1). These parks may vary in size, scale, and function, ranging from community gardens, city parks, greenways, or national reserves (Starke 2013, 234). Moreover, these parks provide space for various physical or leisure pursuits previously referenced, making them a valuable part of the urban fabric. N.V.T is essential to urban parks as basic infrastructure like paved walking paths or trails within wooded areas are significant attractions to park visitors and are frequented more than sport-related facilities (McCormack et al. 2010, 712). However, the attractiveness of N.V.T infrastructures decreases without basic needs such as restrooms, lighting, water fountains, shelters, bike racks, and seating opportunities, a common requirement for all user groups (WHO 2016, 15). Additionally, the attractiveness

of a park to visitors stems from the availability of N.V. infrastructures and minimal vehicular infrastructure. Zhan et al. found that vehicular traffic within parks presents N.V. users with potential dangers discouraging travel within the park (Zhan et al. 2021, 8). In summary, urban parks that support and prioritize the N.V. user groups increase the park's attractiveness, proving its importance.

Site Introduction

The selected site for this project was Franklin Park in Boston, Massachusetts, located approximately four miles from the city's downtown district. Fredrick Law Olmsted originally designed the park in the late 1880s. Today the approximately 500-acre park has wooded areas, open meadows, and active recreation fields. Popular amenities include

the Franklin Park Zoo, the William J. Devine Golf Course, and White Stadium, which were not part of Olmsted's original vision. Franklin Park was designed to provide urban residents an escape into nature, surrounded by grand scenery of woodlands and meadows. Structures and amenities were kept to a minimum. Franklin Park is part of a seven-mile urban greenway

called the Emerald Necklace. The Emerald Necklace is a 1,100-acre system of parks and parkways designed by Fredrick Law Olmsted. Because of its size, Franklin Park is often called "The Crown Jewel" of the Emerald Necklace (City of Boston 2016). Since its opening in 1889, Franklin Park's design has been repeatedly altered to fit Bostonians' ever-changing needs

and desires. Perhaps most significantly, in the 1930s, cars were permitted within the park, which significantly altered the existing circulation system (Boston Parks & Recreation Department 2022). Over time, the park has also become heavily programmed with numerous amenities for active recreation.

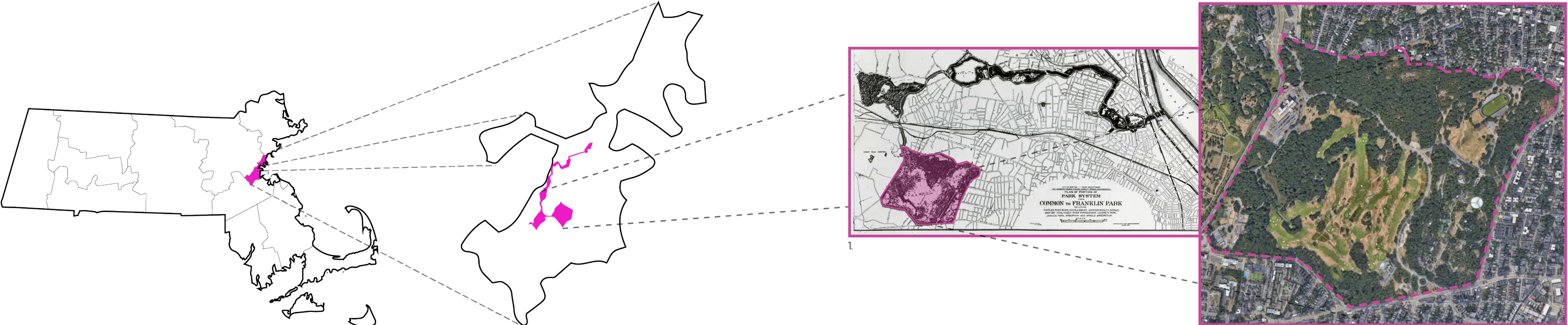


Figure 1.3: Project Location Map (Not to Scale) with Map from National Park Service and Aerial Image from Google Earth

Historical Franklin Park

A rich and complicated narrative precedes the completion of Franklin Park in 1889. The city of Boston itself was a hub for regional trade and agriculture in the colonial era, drawing many immigrant families to establish themselves there (Boston Parks & Recreation Department 2022). As the city rapidly expanded, the Park Act was created in 1875 to allow for the land acquisition of West Roxbury Park, the original name of Franklin Park. Soon after, Fredrick Law Olmsted and his nephew were contracted to select a site and design a large public park for the city. However, Olmsted saw this project as an opportunity to create a system of parks and greenways, known today as the Emerald Necklace, due to the anticipated growth of Boston, with Franklin Park as the anchor or “Crown Jewel” (Boston Parks & Recreation Department 2022). Olmsted picked West Roxbury Park as the site for his design because of its “complementary qualities” and “contrast to other public spaces” within the city (Boston Parks & Recreation Department 2022). Therefore, he created a design celebrating the site’s natural characteristics, including topography and vegetation.

The original plan, released in 1885, was designed to give Bostonians a chance to develop a relationship with nature and each other (Boston Parks & Recreation Department 2022). Therefore, he divided the park into two primary spaces: the Ante Park – carefully positioned active areas, and the Country Park – for passive enjoyment in nature. Olmsted connected the parks by intertwining pathways within the Ante and Country Park to create a circulation system that was unobtrusive to the landscape so the parkgoers could have an immersive experience. Additionally, Olmsted took advantage of the park’s natural features like Puddingstone to construct built structures and encircled meadows by woodlands to create “an illusion of unlimited space and unbroken countryside” (Boston Parks & Recreation Department 2022).

However, once the park opened in 1889, Bostonians did not understand Olmsted’s vision and it was transformed into a more active space, with a zoo, golf course, flowering gardens, and ball fields (Boston Parks & Recreation Department 2022; von Hoffman 1988). These amenities altered Olmsted’s intention and changed how people experienced the park.

Figure 1.4 highlights the introduced amenities changed the overall experience and function.

01. Original Intent

Olmsted intended Franklin Park to be split into two different parks, the Ante Park and the Country Park. Each was to have a distinct experience and amenities.

02. Early Introductions

In 1912, the city zoo was implemented in the Ante Park, which altered Olmsted’s original design. This amenity brought many Bostonians to the park annually.

03. Changes in the Center

The William J. Devine Golf Course was added in the 1930s, privatizing a significant portion of the park and forever altering Olmsted’s intentions for the large meadow space.

04. New Neighbors

Further additions included White Stadium and Shattuck Hospital, taking park acreage, and changing the park experience.

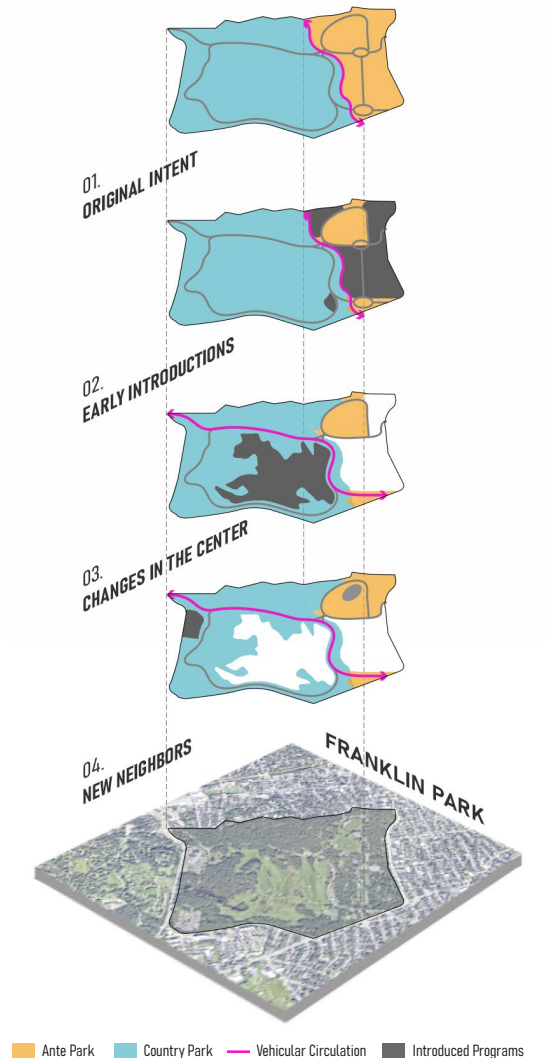


Figure 1.4: Historical Introductions into Franklin Park | By Author

Circulation in Franklin Park

Olmsted's circulation system for Franklin Park was the design feature that experientially connected parkgoers to the surrounding landscape. The system was designed to limit the alteration of the landscape; instead, be suggested by the natural circumstances (Boston Parks & Recreation Department 2022). These natural circumstances are a natural landform called drumlins, a series of knobby hills creating rolling pastures, deep valleys, and rock outcroppings, informing the park's identity (Boston Parks & Recreation Department 2022). The circulation system was designed to navigate the unique topography through its valleys along the exposed rock or traversing the crest overlooking the park. This was intentional, as the park's scenery was to be enjoyed through a continuous and easily traversed circulation system (Boston Parks & Recreation Department 2022).

As referenced previously, the original plan of Franklin Park consisted of two parks: the Ante Park and the Country Park, each with its distinct circulation experience. In the Ante Park, circulation was formalized due to the use of promenades and a non-winding Playstead Loop, facilitating a fast and direct experience. In

contrast, the Country Park was informal through the use of the curved Circuit Loop, encouraging a slower meandering experience. Additionally, circulation was used to create the division between both parks. The dividing line was Glen Road, a pathway designed for through-traffic running east-west (Boston Parks & Recreation Department 2022). Overall, these three primary systems, Glen Road, Playstead Loop, and Circuit Loop, lead users throughout the 500-acre park and to park magnet spaces. Although these primary systems serviced different park sectors, they all converged at a singular point known as Valley Gates. Valley Gates marked the intersection of parks and transition point parkgoers onto a different primary system (Boston Parks & Recreation Department 2022).

As the park's life progressed, with the introduction of new programs, circulation changes coincided. Figure 1.5 shows changes to the park's primary circulation systems.

01. Original Intent

Glen Road (shown in pink) was the primary road for through traffic, and the dividing line between the Ante and Country Park. Primary circulation loops on both sides of the park were established and converged at Valley Gates, the transition point between parks.

02. Circuit Drive

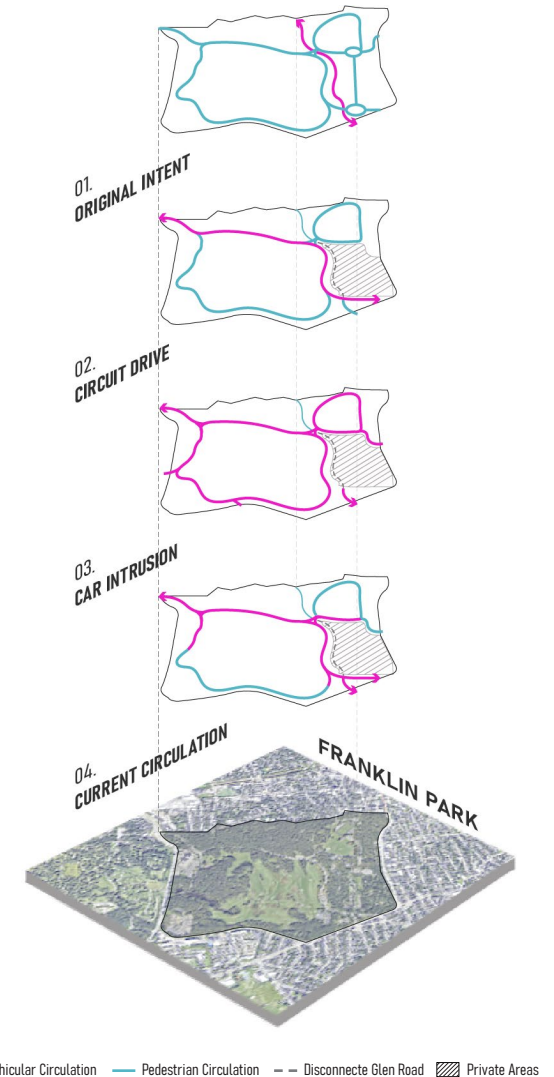
In the 1930s, cars were introduced into the park, creating a new vehicular connection, Circuit Drive. Subsequently, Glen Road closed and was eventually lost due to being on zoo property.

03. Car Intrusion

In the 1960s, vehicular circulation encroached onto all primary systems due to a lack of restrictive barriers for vehicles, ultimately removing a significant amount of pedestrian infrastructure (Boston Parks & Recreation Department, 2022).

04. Current Circulation

In the 2000s, grassroots organizations advocated for closing off areas to vehicular traffic, so granite bollards and gates were installed in the park's interior (Boston Parks & Recreation Department, 2022).



Franklin Park Action Plan

In 2019, the Boston Parks and Recreation Department and Emerald Necklace Conservancy engaged a team of fourteen consultants led by Agency Landscape + Planning, MASS Design Group, and Reed Hilderbrand to create the Franklin Park Action Plan (FPAP). The plan was supported by a significant city investment – a commitment of \$28 million, \$5 million of which is dedicated to a maintenance endowment. The FPAP does not seek to reinvent or transform the character or intent of Franklin Park. Instead, it advocates for thoughtfully guided and community-driven improvements to enhance park functions (Boston Parks & Recreation Department, 2022). Design proposals within the FPAP respond to the changes that have occurred over its 120+ year history, and the plan aspiration are forward looking, however, based on practical recommendations (Boston Parks & Recreation Department 2022). The FPAP was published in December 2022, setting a larger vision for the park. The plan sets forth a series of big ideas that can be translated into potential RFPs or specific projects.

The following big ideas proposed by the FPAP are:

Unify the Park

Lack of maintenance has led to an overgrown canopy and increased invasive species. The FPAP emphasizes the regeneration of woodland habitats and ecological biodiversity.

Clarify Movement

Fast moving traffic and unsafe crossings along vehicular corridors limit pedestrian access. The FPAP proposes re-imagining vehicular corridors to prioritize multi-modal transportation.

Amplify Magnet Destinations

The FPAP proposes investing in amenities and programs in magnet destinations for community gathering and flexible use.

Connect and Activate Edges

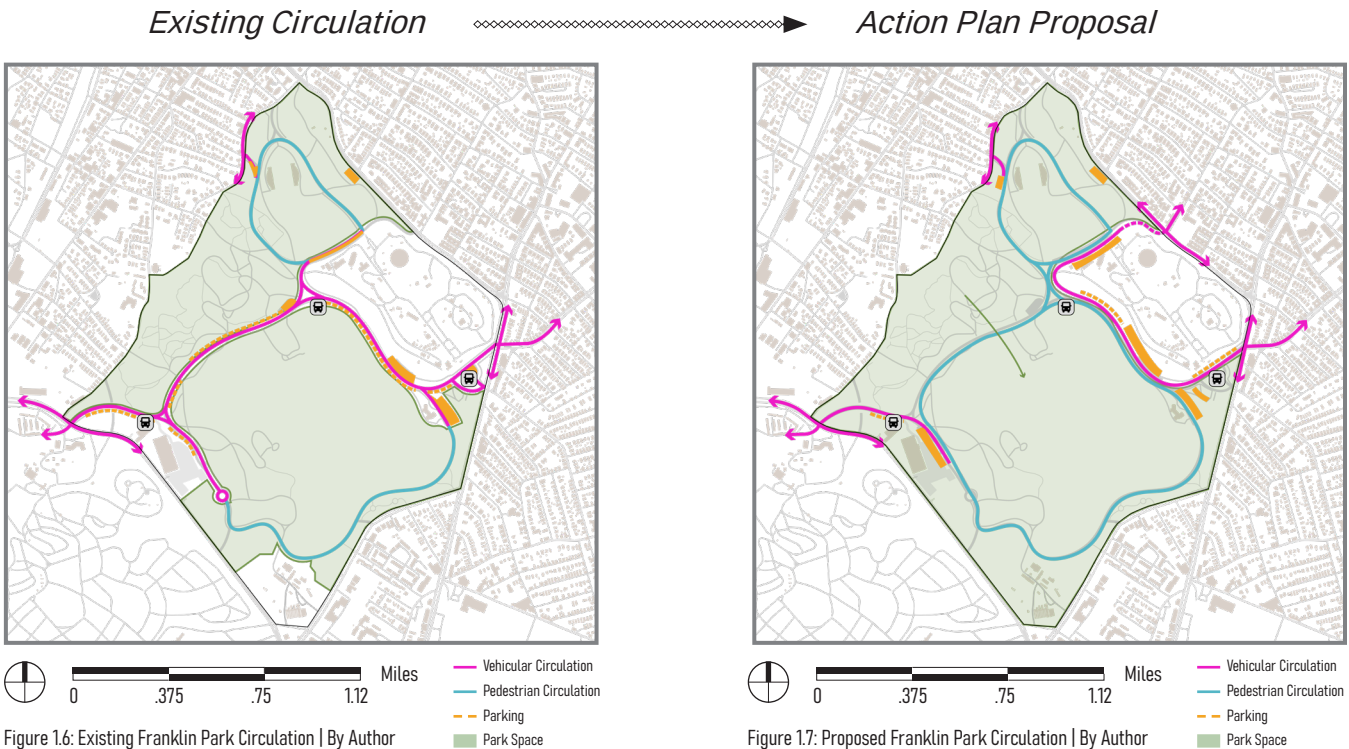
Unwelcoming barriers along external and internal edges prohibit movement and accessibility. The FPAP proposes strengthening neighborhood connections and creating clear and inviting entrances.

(Boston Parks & Recreation Department 2022).

Franklin Park Action Plan Proposal

A robust community engagement process and in-depth site analysis informed the Franklin Park Action Plan. The plan proposes several significant changes to improve the park's access, function, usability, and ecosystem health. Arguably one of the most significant changes suggested by the Action Plan is related to circulation, as it

proposes disconnecting Circuit Drive to restore the primary loops. Although the FPAP presents a design solution for the circulation system, this study is independent from the proposal. However, of the many proposed changes, some design solutions presented in FPAP's proposal were adopted for the projective design in this study.



Dilemma

Changes to Franklin Park’s circulation system over time have prioritized vehicular users, resulting in an overall circulation system that is largely fragmented, unsafe, inaccessible, and confusing for non-vehicular users. Such deficiencies made me question what changes could be made to improve the quality and usability of the park’s circulation system to prioritize non-vehicular users. Quality and usability matter for circulation as these factors attract, encourage, and retain someone within a space, and when lacking, they facilitate the opposite (Nielsen 2012). Yet little is known about the specific design criteria needed to improve circulation’s overall quality and usability for non-vehicular users.



“...Difficult to overstate how much fast cars reduce the quality of the experience in the park, or want to bike around.”

- Franklin Park Visitor (Boston Parks & Recreation Department 2022)

Research Question

How can Franklin Park’s circulation system be redesigned to improve the overall quality and usability for non-vehicular users?

Project Goals

- Determine and identify what design features impact the quality and usability of a circulation system for N.V users.
- Identify the various circulation needs for different N.V user groups.
- Examine the current circulation experience in Franklin Park for N.V users and suggest design recommendations to improve the quality and usability of the circulation system.

Project Outcomes

- Develop an analytical framework that outlines various design criteria needed to improve circulation quality and usability for N.V users
- Create a projective design for Franklin Park’s circulation system that improves the quality and usability of the circulation experience for N.V user groups.

Project Overview

To address the project’s research question, a multi-step process was developed. The first step was a literature review, which looked at different non-vehicular user groups and their associated needs for circulation. Next, a review of analysis frameworks was conducted to determine what design criteria are most significant to improving the quality and usability of circulation. The findings were then used to create an analytical framework that included twenty criteria that can be used to assess and determine the quality of circulation

for non-vehicular users. Next, the analytical framework was applied through precedent studies to show examples of the identified criteria that could inspire and inform the projective design. Then, the framework was applied through site analysis to determine how the quality and circulation of Franklin Park could be improved for the non-vehicular user groups. And finally, findings from precedent and site analysis informed a projective design, providing recommendations for **Franklin Park’s circulation that improve the experience for non-vehicular users.**

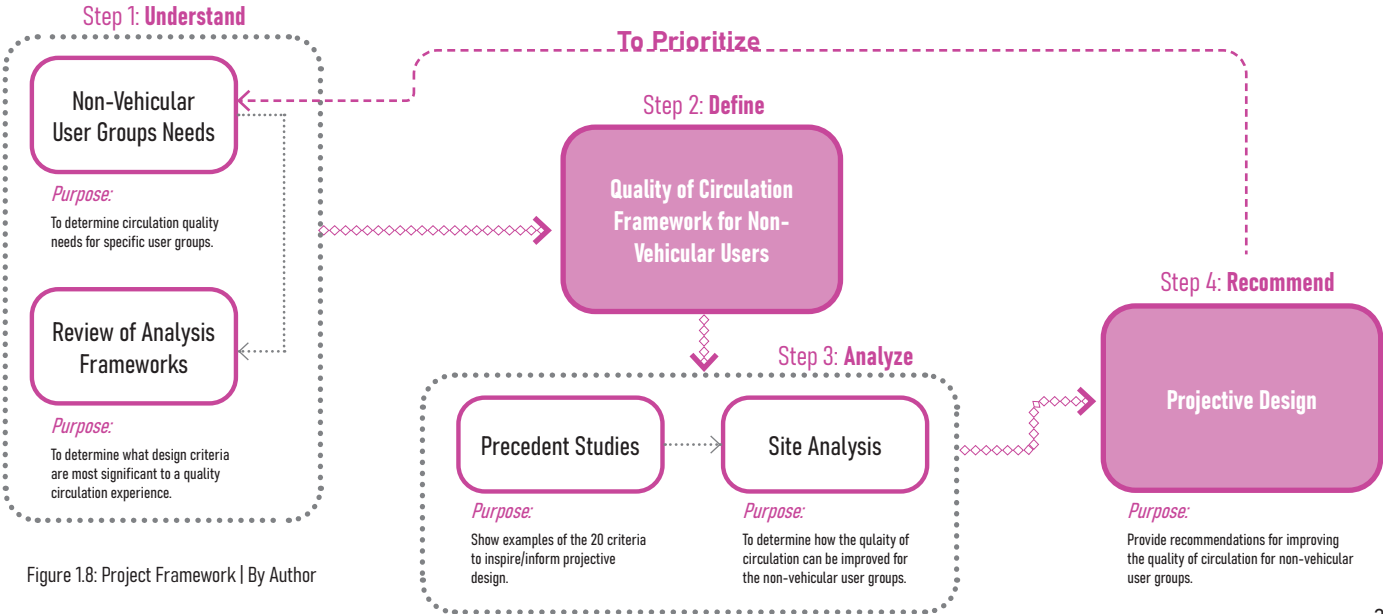


Figure 1.8: Project Framework | By Author



CHAPTER 02

Figure 2.1: Couple Walking in Forest | By Unsplash User: 30daysreplay



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02 BACKGROUND

A literature review was completed first to provide background knowledge related to the main topics explored within the report. The literature review also served as the primary foundation for the subsequent development of the Quality of Circulation Framework.

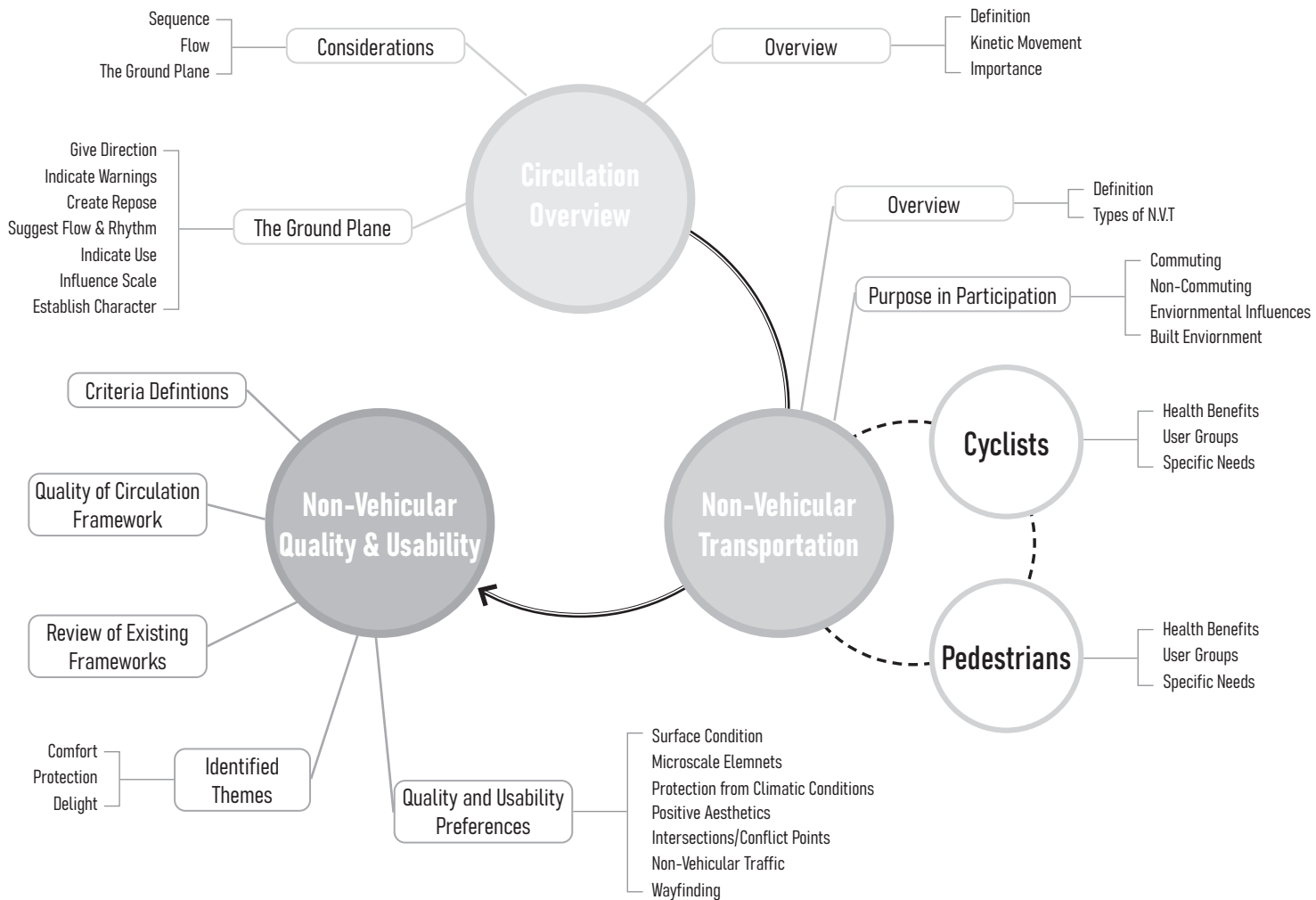


Figure 2.2: Project Literature Map | By Author

Literature Map

The literature map on the adjacent page in Figure 2.2, illustrates the organizational approach utilized to categorize relevant information. A wide range of sources were reviewed to provide a solid conceptual foundation for the project. Findings drawn from each source are valuable, however the collective findings created connections between relevant topics and ultimately informed all aspects of this project. The outcome of this literview outlined twenty criteria needed to improve quality and usability which subsequently lead to the creation of the Quality of Circulation for Non-Vehicular User's Framework used throughout this report.



Figure 2.3: Streetscape | By Unsplash User: NAMUBI

Circulation Overview

Circulation refers to lines or patterns leading people to, through, over, under, or around a site by foot or other mobility means (Starke 2013). Circulation is a fundamental structure of landscape design as it establishes the site's rate, sequence, and visual unfolding (Starke et al. 2013, 213; Dee 2001, 81). Additionally, circulation systems define or separate spaces within parks and public spaces (Booth 1990, 170; Laurie 1986, 135).

Circulation is multi-faceted because of the way it can be manipulated to create an experience. Circulation involves kinetics, or movement, making it a non-static experience; therefore, consisting of specific design considerations and strategies than a static space (Dee 2001, 83). With the involvement of kinetics, the circulation experience is sensitive to constantly changing variables, such as views, sounds, scents, temperature, and brightness (Dee 2001; Starke 2013, 213). However, circulation does not have to be a line that's experience is determined by the landscape it cuts through; it can be an intentional composition. As mentioned earlier, circulation considerations like rate, order, type, and sequence are a matter of design control,

considering movement for either necessity or pleasure, enabling access and enjoyment of the landscape. (Dee 2001, 83; Starke 2013). Circulation is more than a system facilitating movement; pairing a designed experience can significantly enhance the user experience.

Understanding how circulation users move towards and what repels us can add to the overall layout and experience. For example, people tend to move in logical progression sequences, in lines of least resistance, towards which pleases, which is necessary [bathrooms], toward protection, avoiding exposure, confusion, and order (Starke 2013, 216). At the same time, people are repelled by obstacles, the unpleasant, the monotonous, the uninteresting, the ugly, danger, friction, the unsuitable, the undesirable, and the demanding (Starke 2013, 217). Additionally, people are directed or guided by an arrangement of natural or structural forms, implied patterns, suggested progression, signs, symbols, gates, curbs, and barriers (Starke 2013, 217).

Circulation Design Considerations

In the design of circulation, the following are primary considerations that can enhance the user experience.

Sequence

A sequence is a succession of perceptions having continuity (Starke 2013, 224). A sequence is vital to circulation because long stretches traveling through a similar landscape can be tedious. To prevent this, designing circulation patterns with variety and mystery can be organized to avoid monotony or create dramatic or symbolic effects (Dee 2001; Laurie 1986, 137). Additionally, an effective sequence may induce motion, give direction, create cadence, instill a mood, or reveal and explain an object or series of objects in space (Starke 2013, 221).

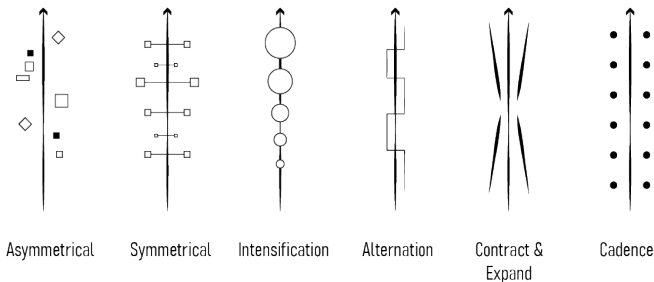


Figure 2.4: Example Sequence Patterns | Adapted by Author from Starke 2013

Flow

Flow begins with intellectual predictions and observations of the context and users to determine the expected flow between destinations (Laurie 1986, 135-136; Starke 2013, 216). A common strategy is to map predicted paths and connections, known as desired lines, to create a circulation network (Dee 2001; Lynch 1960, 96). Although, if the desired lines are not adhered to, the creation of shortcuts or “cowpaths” through the landscape will occur (Booth 1990, 173; Dee 2001; Laurie 1986). Additionally, flow is comprised of a subset of considerations like intended use, path width, and hierarchy. First, each path must have an identified use to determine the path width (Starke 2013, 216). Path width is unique as it can create

a dynamic experience influenced by the form, axial or meandering. Each form facilitates a different experience; axial has associations with order and control while meandering paths have associations with naturalness (Dee 2001, 91). Forms can also have varying widths to create a desired experience. Wider paths are associated with slower casual movement, while narrow encourages faster and more direct movement (Booth 1990, 173). With consideration of the use and width of each path in the system, hierarchies will develop. Hierarchy is essential, as different paths have different intensities and functional purposes (Dee 2001, 87). Overall, flow can facilitate a variety of experiences through control of a variety of manners.

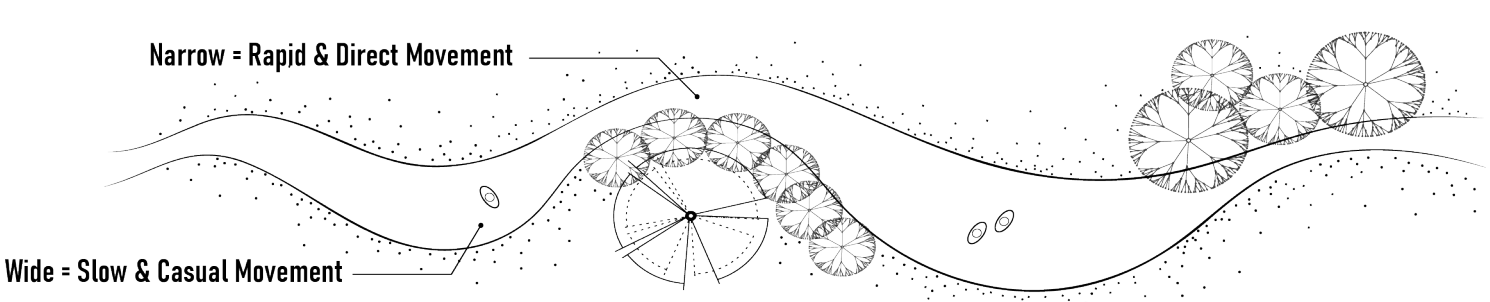


Figure 2.5: Example Flow Diagram | Adapted by Author from Starke 2013

Ground Plane

The product people see of a circulation system is the ground plane, which translates the identified desired lines into a form such as a sidewalk or trail. The ground plane in circulation refers to a linear path for travel or linkage to spaces that create a network (Dee 2001, 82). The ground plane consists of paving material, any hard natural or artificial surface material consciously placed in an outdoor space to establish a durable surface (Booth 1990, 169). Paving material can be gravel, brick, stone, concrete, asphalt, and wood decking. Pavement is essential to circulation systems as it is hard, relatively permanent, and non-changing, allowing it to accommodate the intense uses exposed to it over time (Booth 1990, 169-170).

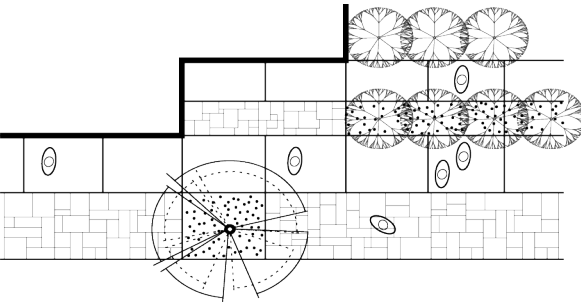


Figure 2.6: Ground Plane Diagram | Adapted by Author from Starke 2013

Ground Plane Design Considerations

The ground plane poses many design considerations because it is the seen product.

Indicate Use

Separation of uses and activities can be implied by altering color, texture, or material. As a rule of thumb, paving material can change in a design only if the activity varies, otherwise the paving material should remain constant (Booth 1990, 176-177; Laurie 1986, 140).

Give Direction and Direct Movement

The ground plane can give directions and indicate movement, specifically using paving blocks, texture, or arrangement as physical clues to lead the eye to a destination (Booth 1990, 172; Laurie 1986, 141; Weddle 1967, 73).



Figure 2.7: Prairie Trail | By Unsplash User: Jamie Dantas

Indicate Warnings

Differences in paving materials, texture, and color can indicate when warnings indicate danger or hazards (Laurie 1986, 140; Weddle 1967, 73). A common practice today is paving pedestrian crosswalks at intersections and identifying the space for pedestrians and vehicles (Weddle 1967, 73).

Create Repose

Opposite paving material adjacent to paved pathways cues a sense of repose and rest (Booth 1990, 175-176; Weddle 1967, 73). Paving material can suggest the rate of movement, asphalt and concrete suggest fast and unimpeded, whereas aggregate suggests slower, more casual strolling or standing around (Laurie 1986, 140-141).



Figure 2.8: A Women Standing at Crosswalk | By Unsplash User: SQ Lim

Suggest Flow and Rhythm

Pathways could be regulated to create an intended circulation experience. As mentioned earlier, form and width can vary to achieve an intended flow. The wider a path is, the more casual the walking rate can be; a user can slowly meander and stop taking in different scenes. In contrast, as path width narrows, one is forced to continue to move ahead with little opportunity to stop without getting entirely off the path (Booth 1990, 173-175). The design and layout of pavement can also influence the rhythm of moving along a linear path. Where a pedestrian places a foot and how far apart individual steps are two aspects of rhythm walking (Booth 1990, 173-175).

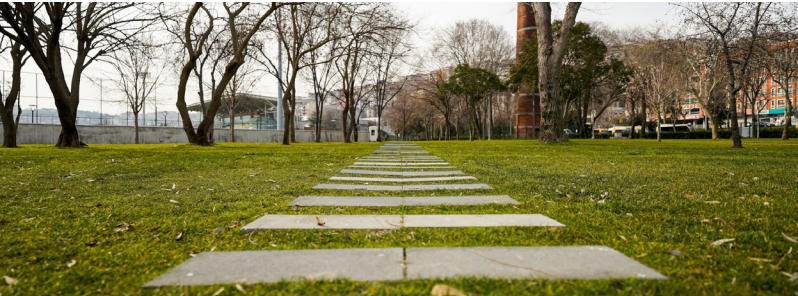


Figure 2.9: Pathway Rhythm | By Unsplash User: Selcuk Sarikoz

Influence Scale

Individual paving blocks' size and spacing affect a space's perceived scale. Larger, more expansive patterns give a sense of being ample in scale. In contrast, smaller, tighter patterns make a space feel diminished and intimate (Booth 1990, 178).

Establish Character

The paving material used in a design and its surface and edge details can significantly impact the feeling of the outdoor spaces. Different pavement materials and patterns can create and reinforce diverse spatial feelings such as refined, rugged, quiet, aggressive, urban, or rural. The material and pattern of paving material in a design should enhance the desired feeling (Booth 1990, 180-181; Lynch 1960, 96).



Figure 2.10: Beautiful Alley in Bucharest Park | By Unsplash User: Bogdan Dumitru



Figure 2.11: Non-Vehicular Users Collage | By Unsplash Users: Coen Van de Bro, Connell Shandler, and Marat Mazitov

Non-Vehicular Transportation

Non-Vehicular Transportation (N.V.T) refers to human movement, human-powered or low-speed electronic assist devices, including but not limited to bicycles, tricycles, wheelchairs, electric wheelchairs, scooters, skates, and skateboards (Zwald et al. 2018, 150; SCAG 2022, AASHTO 2021). The importance of N.V.T. stems from its environmental and physical benefits. N.V.T produces the least pollution and emissions of all transport forms, contributing to sustainability efforts (Kim et al. 2022, 2; Aziz et al. 2017, 1208; SCAG 2022; AASHTO 2021). N.V.T also increases adherence to physical activity recommendations because it can easily be incorporated into daily lifestyles, influencing participation (Kim and Hall 2022, 3; Bruijn et al. 2009, 189; Parker et al. 2013, 101-102).

The behaviors and attitudes of non-vehicular users are critical to acknowledge as these characteristics help create a quality circulation experience. By understanding these influences, interventions can transition circulation systems from vehicular-centric to non-vehicular-centric. In doing so, understanding the existing transportation system attributes, such as facilities, infrastructure, and safety, can identify

issues and opportunities for N.V.T. experience improvements (Aziz et al. 2017, 1208).

As referenced earlier, N.V.T is comprised of various types of transportation. The following table is a list of all types of non-vehicular transportation.

Human Movement	
Climbing	Skiing
Running	Swimming
Walking	
Human-Powered Vehicles	
Bike	Scooters
Rollerskating	Wheelchairs
Skateboards	
Small Electronic Assist Vehicles	
E-Bikes	E-Scooters
E-Skateboards	

Table 2.1: Modes of Non-Vehicular Transportation | By Author

Motivations for N.V.T

A short discussion is needed to precede the purposes of why people participate in non-vehicular travel. It is important to recognize that non-vehicular transportation is secondary to vehicular transportation across America. Data collected showed that across America, only 12.4% of the population regularly uses a bike, and 29.4% walk for any transportation purpose (Liu et al. 2021, 1130; Statista 2023). Additionally, Phil Blechman found that from a survey conducted in 2021, 33.28% of people would rather drive to a destination a quarter of a mile away, equivalent to a 5–10-minute walk (Blechman, P 2021). It's important to understand that these facts directly result from the built environment. The rapid expansion of our vehicular infrastructure has widened roads reducing the amount of dedicated and protected space for vulnerable transportation users like pedestrians and cyclists (NACTO 2014; Conway et al. 2021, 1; AASHTO, 2022). The resulting outcome shows that, especially along vehicular corridors, there have been increased fatalities and reduced feelings of comfort and safety, ultimately resulting in the reduced participation mentioned above (Schneider et al. 2018, 432; NACTO 2014; Abel et al. 2019, 31).

These facts are meant to lead to the realization that a significant reason for participation in non-vehicular travel stems from internal motivations. However, external motivations, from employers and city initiatives, are increasing to choose sustainable travel. Primary motivations of non-vehicular users are summarized into commuting or non-commuting (Liu et al. 2021, 1131; Kim et al. 2022, 3). Liu et al. describes N.V.T as a multipurpose behavior. For example, commuting has a utilitarian destination, “travel to/from work, to do errands, or to go from place to place”; by contrast, non-commuting is defined as travel without a destination, i.e., “travel just for fun, socialization, or exercise” (Liu et al. 2021, 1130). Additional motivations include fitness, cheap cost, socialization, sustainability, and time savings (McLaren, A. 2016; C.D.C. 2020; UNEG 2019). These motivations of participation were applied to both cyclist and pedestrian user groups and synthesized to inform the non-vehicular user groups for this study. However, there are nuances for both cyclists and pedestrians regarding purposes of participation and unique user groups.

Non-Vehicular User Groups

As shown in table 2.1, there are many modes of non-vehicular transportation; however, this project will primarily focus on cyclist and pedestrian user groups. The decision to only focus on cycling and pedestrian user groups was informed by the context of the Franklin Park circulation system and changes in infrastructural needs, making various listed user groups in table 2.1 negligible for this report. Additionally, it is recognized that non-vehicular users can vary in age; however, this report does not recognize it as there are no significant infrastructural changes that require a specific user group.



Figure 2.12: Overall Project Non-Vehicular Users | By Unsplash Users: (Top) Hannah Carr, and (Bottom) Francisco Gonzalez

Cycling

One of the most popular non-vehicular modes of transportation is cycling. Cycling is gaining popularity because many people recognize its many health benefits (Lubitow et al. 2016, 2638; Buehler et al. 2011, 410; Fitch et al. 2022, 434). Cycling is not one-dimensional; people participate for multiple reasons and have different riding styles. Thus, there are distinct cyclist user groups, which are defined for this report as:

Commuting

Rides that have a solid start and destination point. Typical destinations include work, school, public transit stops, grocery stores, and retail shops (Alta 2017).

Fitness

Cyclists will participate to meet their daily physical requirements or as a way to live an active lifestyle. Cyclists in this group participate in vigorous pursuits such as training for events or physical riding styles (Damant-Sirois et al. 2014, 14).

Leisure

Cyclists in this group do not ride for convenience or speed; instead, they ride for enjoyment. This group typically rides as a hobby or family activity. Riders typically use minimal effort to achieve relaxation (Damant-Sirois et al. 2014, 14).

Within each primary user groups is based on motivations for cycling, however, there are two primary types of cyclists within those user groups, being “dedicated” and “path-using”.

Dedicated

These cyclists are internally motivated causing them to ride frequently. The speed, predictability, and flexibility of bicycle trips motivate cyclists in this group to cycle. Typically, they do not mind the lack of dedicated infrastructure and sometimes prefer riding in traffic rather than dedicated lanes or paths. (Damant-Sirois et al. 2014, 14).

Path-Using

These cyclists ride as a secondary mode of transportation; they participate less frequently than dedicated riders. They seek safe cycling routes and explicitly look for a continuous bike route separated from vehicular traffic. (Damant-Sirois et al. 2014, 14).

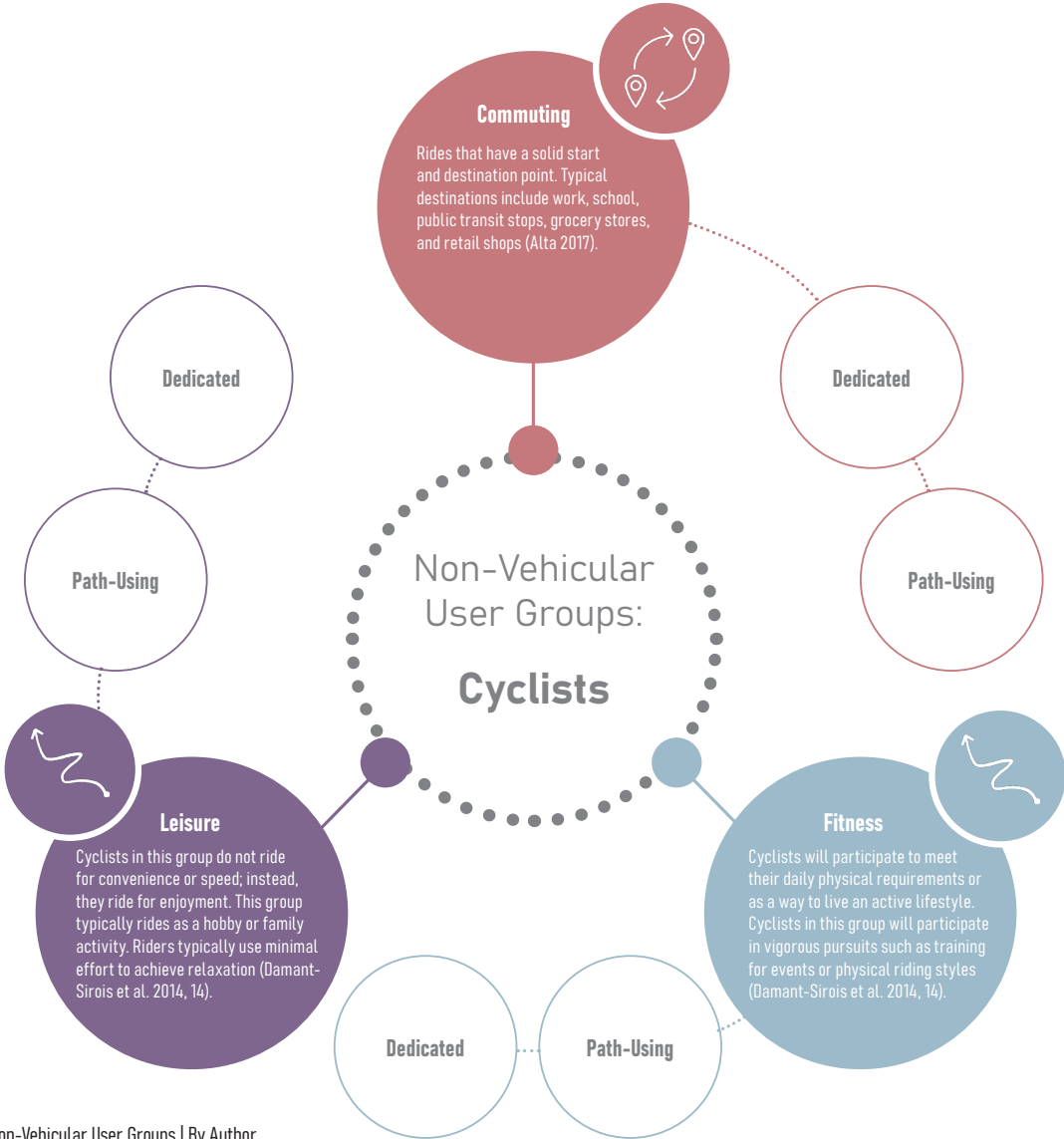


Figure 2.13: Cyclist Non-Vehicular User Groups | By Author

Walking

Walking is another primary non-vehicular mode of transportation. Walking reduces the risk of premature death and non-communicable diseases (N.C.D.s), such as obesity, type 2 diabetes, chronic heart disease, hypertension, cardiovascular diseases, and depression (Liu et al. 2021, 1129). Walking as a form of transportation can be primal, convenient, cheap, and sustainable. Walking has been credited for helping in mitigating transport congestion, reducing environmental pollutants, and improving social interaction (Liu et al. 2021, 1129). Walking is a multipurpose behavior, like cycling, as people have different motivations and styles, creating a need to define user groups. Below are the identified pedestrian user groups within this study.

Commuting

Walking is a way of transportation and has various destination points. Typical destinations are work, public transit stops, and schools (Liu et al. 2021, 1131).

Fitness

Walkers participate to meet their daily physical requirements or as a way to lose weight. People in this group participate in vigorous pursuits such as power walking or running (Presidents Council on Physical Fitness and Sports n.d).

Leisure

Walkers participate as a way to socialize or relax. Participants use moderate to little effort and have no real destination. Walkers in this group typically range from groups of 2+ participants or an individual (Balaban 2022, 246; President's Council on Physical Fitness and Sports n.d).

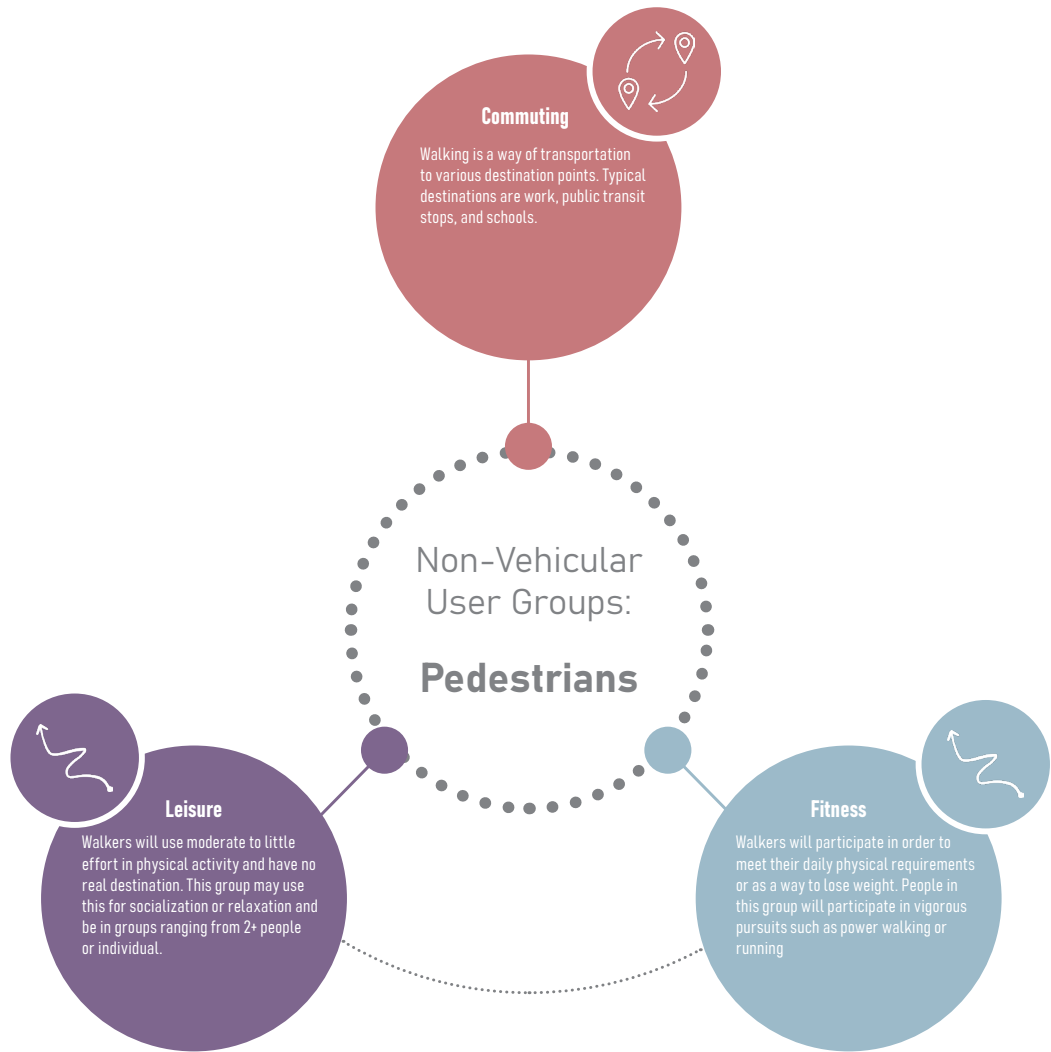


Figure 2.14: Pedestrian Non-Vehicular User Groups | By Author



Figure 2.15: Boston Common in Spring | By Unsplash User: Kelly Sikkema

Circulation Quality and Usability

Circulation systems are interlinked within the built environment and are something we unconsciously interact with daily. These systems can be treated and designed for function or experience, thereby affecting the time spent within them. However, the time spent can relate to the overall quality and usability of the circulation system. Quality and usability matter in circulation as they are the various physical features within circulation system, directly influencing people's perceptions. While the functions of circulation systems may vary, the physical features influencing quality and usability should still be considered. The following section discusses various criteria found in literature that influence the quality of a non-vehicular user's circulation experience.

Surface Condition

The cleanliness and condition of paving materials are important in the built environment. Rigolon et al. explains that pathways in and around parks, a good condition and lack of debris increases usability (Rigolon et al. 2018, 586).

Microscale Elements

Microscale elements refer to pedestrian-level characteristics like seating, trash cans, lighting, shade structures, water fountains, bathrooms, bike racks, and repair stations (Rigolon et al. 2018, 577; McCormack et al. 2010, 716; Wang et al. 2015, 54–55). Microscale elements were repeatedly referenced as necessary but small features that impede or promote non-vehicular use (Rigolon et al. 2018, 578).

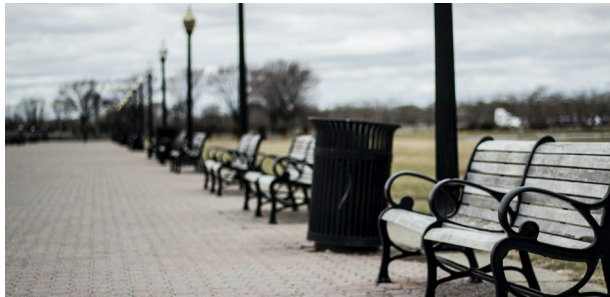


Figure 2.16: Park Microscale Elements | By Unsplash User: Gautam Krishnan

Protection from Climatic Conditions

Protection from climatic conditions is essential for a quality experience. Several studies found that non-vehicular activity was deterred by rain and very cold or hot weather due to a lack of protection (Pucher et al. 2011, 452; Buehler et al. 2011, 417; Cicchino et al. 2020, 11).

Positive Aesthetics

The circulation experience for non-vehicular users is strongly connected to visual interest and recreational activity (Humpel et al. 2004, 122). For example, adding features like water features, art, pleasing views, and trees can be seen as aesthetic features that improve the visual appearance of the walking environment (Rigolon et al. 2018, 586; WHO 2016, 15).



Figure 2.17: Cherry Blossoms along the Tidal Basin | By Unsplash User: Andy He

Intersections/Conflict Points

Intersections are common but critical and dangerous points at which multiple modes of transportation meet. Intersections should reduce conflict between vulnerable road users and vehicles by heightening the level of visibility, denoting a clear right-of-way, and facilitating eye contact and awareness of competing modes (NACTO 2014, 69). A safer intersection may include color, signage, medians, signal detection, and pavement markings while considering anticipated car, bike, and pedestrian movement (NACTO 2014, 69).

Non-Vehicular Traffic

Protection from other non-vehicular users is essential in increasing safety and comfort. Due to cyclists and pedestrians commonly sharing



Figure 2.18: Divided Pathway in Central Park | By Unsplash User: Chanan Greenblatt

paths, differences in speeds causes repeated conflict (Beitel et al. 2018, 712). Therefore interventions could include the application of textured pavement, separated lanes, raised intersections, signage, and pavement markings to indicate the presence of pedestrians and the requirement for cyclists to yield (Beitel et al. 2018, 722).

Wayfinding

Signage are an essential component of circulation because they direct people to their destination (Lukito et al. 2017, 74; Yesiltepe et al. 2021, 396; Kim et al. 2021, 16; Farr et al. 2012, 719). Wayfinding consists of signs and maps located at intersections that deliver directional, informational, and regulatory information to non-vehicular users.



Figure 2.19: Wayfinding Along a Trail | By Unsplash User: Conner Bowe



Figure 2.20: Girl Walking in Park | By Unsplash User: Jeffrey Grospe

Review of Existing Frameworks

To further determine the criteria needed to define the quality and usability of a circulation system, published analysis frameworks were studied. Selected analysis frameworks ranged from experiential analysis to a physical inventory of park, public spaces, and built environments. Although selected frameworks are applicable for analyzed spaces through different lenses, circulation criteria were a part of each. The following analysis frameworks were selected for review.

What Makes a Great Space? (2018) Project for Public Spaces

Project for Public Spaces uses a placemaking approach that rejuvenates public spaces to serve everyday needs. Through their evaluation of public spaces worldwide, they have defined four general qualities of a successful space: accessible, activated, comfortable, and sociable. The four general qualities of a successful public space spurred the development of the “What Makes a Great Place?” framework, also known as the Place Diagram, which is used as a tool for people in judging any space, good or bad.

Twelve Urban Quality Criteria (1970) Gehl Institute

The Twelve Urban Quality Criteria was developed by the Gehl Institute for researchers to understand how public spaces are experienced by their users. Their research found 12 urban qualities that define one’s experience and fit into three categories: protection, comfort, or enjoyment. The framework has developed into a worksheet to allow the observer to take the tool on a site visit and assign a positive, neutral, or negative value to each criterion.

Pedestrian Environmental Data Scan (2006) Kelly J. Clifton

The Pedestrian Environmental Data Scan (PEDS) was developed by Kelly J. Clifton from the University of Maryland and is an instrument used to measure environmental features related to vehicular and non-vehicular users in varied environments in the United States. PEDS is unique because it evaluates microscale and macroscale features to provide a holistic analysis.

Community Park Audit Tool (2012). Kaczynski, A. & Santis, W.

The Community Park Audit Tool (CAPT) was developed in 2010 by Andrew Kaczynski of Kansas State University and Sonja Wilhelm Stains of the University of Missouri to enable diverse community stakeholders to audit local parks for their potential to promote physical activity. The audit tool would evaluate the park in four different segments, working from outside to inside. A sequential approach allows for a holistic analysis, allowing for an evaluation of microscale and macroscale features.

Synthesis of Identified Themes

After reviewing the select analysis frameworks and literature on quality criteria, common themes appeared. A total of three overarching themes were discovered: comfort, protection, and delight. The themes defined key considerations and criteria that ultimately define what is needed for a quality circulation experience for non-vehicular users. By classifying the criteria into three

themes, analysis can be more easily structured and useful to an audience unfamiliar with the design of circulation. The identified themes were used to categorize the extracted criteria from literature and selected frameworks, all which manifest into the Quality of Circulation for Non-Vehicular Users Framework.

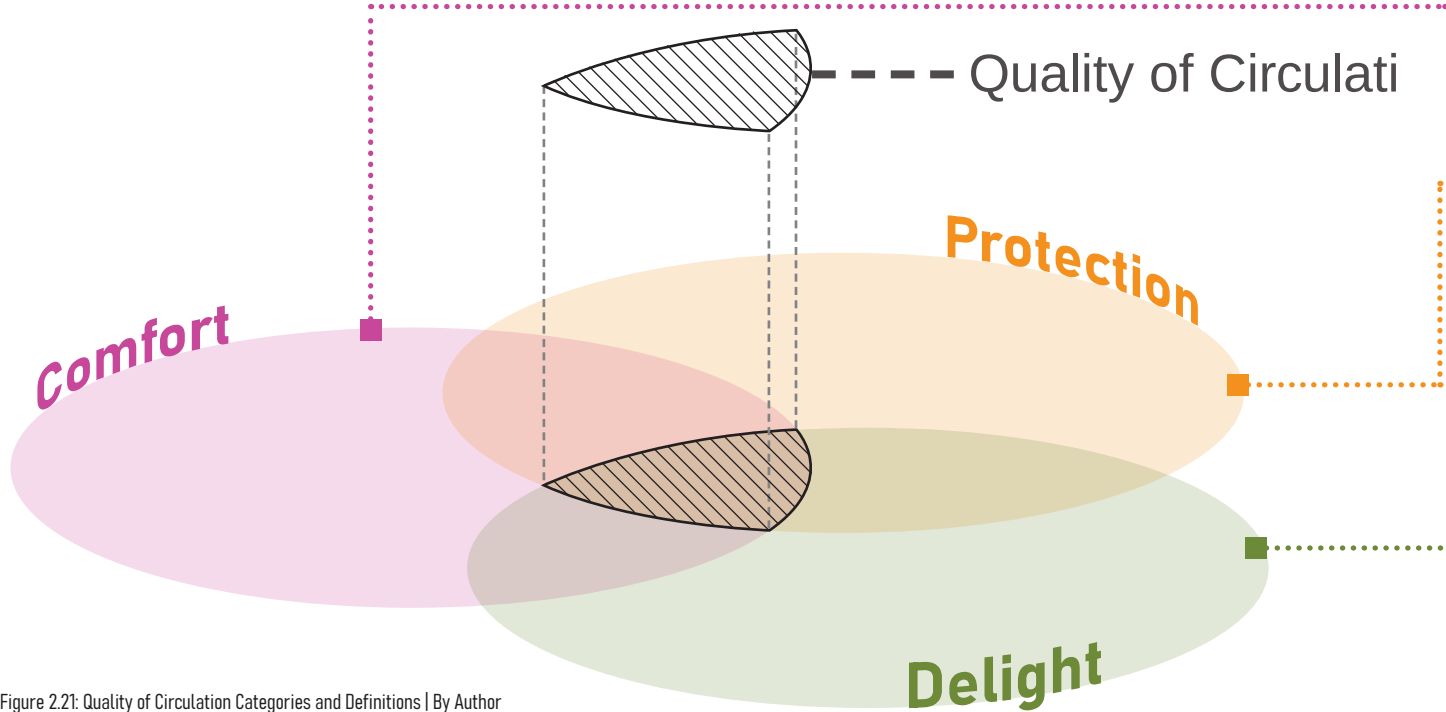


Figure 2.21: Quality of Circulation Categories and Definitions | By Author

CATEGORY DEFINITIONS

Comfort	Comfort is a crucial to encourage or retain a walker or cyclist. The concept of comfort can be directly related to the feeling created by the environments the user interacts with. Comfort can include ambient qualities such as the five senses: sight, smell, taste, touch, and sound. For circulation, a comfortable system is related to a functional, connected, accessible, navigable and provides availability to all essential infrastructures in order to create a state of physical and mental ease. Common essential infrastructures include lighting, seating, restrooms, water fountains, bike racks, and wayfinding. Protection or safety is one of the most substantial factors in encouraging or discouraging someone from bicycling or walking (Fitch et al.), making it a prioritized characteristic for circulation.
Protection	Safety is unique because it is qualified by a user's perception and varies from person to person. For this study, safety and protection will be defined by a series of qualities. However, the primary safety concern is the degree of conflict between other modes of transportation, primarily vehicular and secondarily other non-vehicular users. This characteristic also encompasses climatic conditions. Another critical component of one's safety is the degree of protection from various climate conditions such as rain, snow, sun, and wind. This component adds to the overall comfort level of circulation.
Delight	Delight is an additional characteristic atop protection and safety to create an aesthetically pleasing circulation system. Delight is less of a functional component but a decorative layer to create a pleasing circulation system. Creating something delightful can be achieved through various strategies such as planting, pavement design, art, views, or other elements to add visual interest. This characteristic will also encompass the immersive aspect of the circulation system to create an enjoyment of nature.

Synthesis of Framework Criteria

While reviewing selected analysis frameworks, it was recognized that while all of the criteria in each were pertinent, they presented little value unless further synthesized. The synthesis was accomplished by extracting identified criteria related to circulation between all four frameworks and literature and sorting them into the previously identified categories: comfort, protection, and delight. Each criterion from frameworks and literature is shown on the right and associated with pairing to a specific category. This simplification led to the creation of the Quality of Circulation for Non-Vehicular Users Framework.

EXTRACTED CRITERIA

What Make a Great Space Framework Project for Public Spaces (2018)	Continuity
	Connected
	Readable
	Walkable
	Accessible
	Welcoming
	Attractive
	Sittable
	Green
	Clean
	Safe
	Useful
	Convenient
Twelve Urban Quality Criteria Gehl Institute (1970)	Protection Against Traffic
	Options for Seeing
	Protection Against Others
	Options for Sitting
	Options for Leisure
	Enjoyment of Nature
	Unpleasant Sensory Experiences
	Positive Aesthetic Qualities
	Topography
	Materiality
Pedestrian Environmental Data Scan (PEDS) Kelly J. Clifton (2006)	Site Element Condition
	Maintenance
	Dimensionality
	Protection from Traffic
	Crosswalks
	Park Amenities
	Useable
	Accessible
	Signage
Community Park Audit Tool Andrew Kaczynski & Sonja W. Santis (2012)	Connectivity
	Safety Concerns
	Bike & Ped. Infrastructure
	Site Element Condition
	Microscale Elements
	Sightlines
	Aesthetic Features
	Surface Condition
	Microscale Elements
Literature Various Authors	Protection from Climatic Conditions
	Positive Aesthetics
	Intersections/Conflict Points
	Non-Vehicular Traffic
	Wayfinding

Figure 2.22: Criteria Extraction and Association Diagram | By Author

QUALITY OF CIRCULATION CATEGORIES

Comfort

Protection

Delight

QUALITY OF CIRCULATION CRITERIA

Lighting
Repose
Usability
Microscale Elements
Availability
Connectivity
Materiality
Path Width
Accessibility
Wayfinding
Vehicular Traffic
Non-Vehicular Traffic
Unpleasant Sensory
Conflict Points/Intersections
Edge Conditions
Surface Condition
Opportunities for Seeing
Opportunities to Enjoy Nature
Positive Aesthetics
Arrival Sequence

Quality of Circulation for Non-Vehicular Users Framework

After reviewing existing analysis frameworks, the collected criteria was placed into respective themes, previously defined. The criteria were collected from existing analysis frameworks and literature review. The criteria are the measurable variables important to consider when analyzing or designing quality and usability in a circulation system.

In the development of the Quality of Circulation for Non-Vehicular Users Framework, it was realized that it is applicable for to all modes of non-vehicular transportation as a whole. Initial applications of the framework analyzed Franklin Park’s circulation system through the lens of individual non-vehicular user groups, and findings yielded parallel results. Although, some criteria outlined require specific analysis, specifically between cyclist and pedestrian user groups.

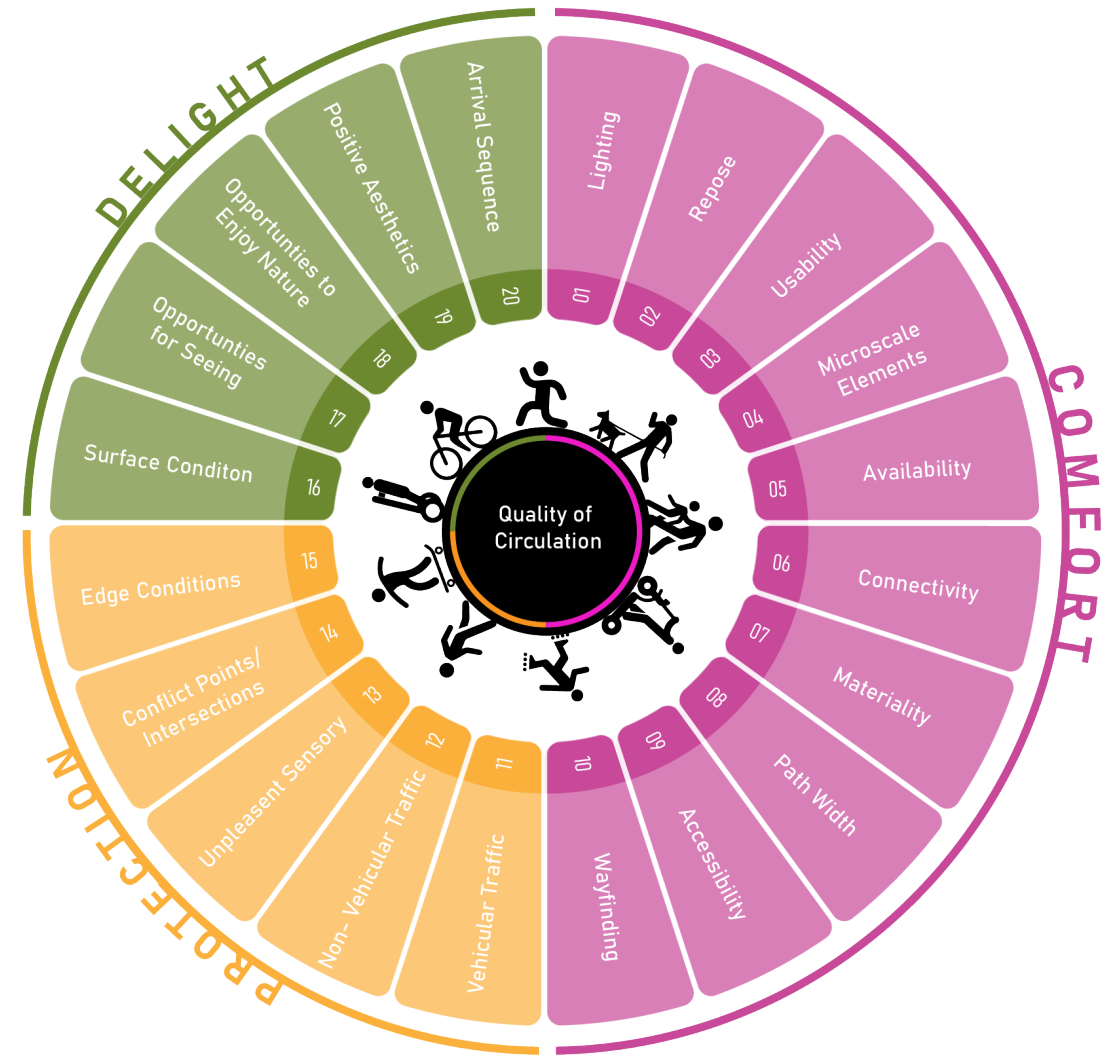


Figure 2.23: Quality of Circulation for Non-Vehicular Users Framework | By Author

Criteria Definitions



▪ **Lighting** – Refers to features alongside pathways that illuminate the circulation system during the evening and night hours. Can include pedestrian, street lamps, pathway lights, and service lighting



▪ **Repose** – Refers to areas that provide circulation users with areas to rest or linger along pathways. Common elements are tables, benches, or spaces adjacent to the circulation system.



▪ **Usability** – Looks at how the circulation system is being used in its current state. Understanding how users move internally to reach a destination, also how the system is used for special, more significant events.



▪ **Microscale Elements** – These are essential pedestrian-level features to increase overall comfort. It refers to features like bike racks, trash cans, bathrooms, and water fountains.



▪ **Availability** – Availability within the circulation system is concerned with non-vehicular infrastructure accessible to them. It also refers to the type of infrastructure there, like primary loops, trails, and bike lanes



▪ **Connectivity** – Connectivity refers to how connected the circulation system both physically and aesthetically. Is also concerned with connection points across the circulation system.



▪ **Path Width** – Refers to the width of all pathways and segments within the circulation system



▪ **Accessibility** – Refers to the ease with which the circulation system can be reached or entered by various modes of transportation users to reach a specific destination



▪ **Wayfinding** – An essential component of circulation systems that uses signage and mapping features to direct movement or provide direction leading the user to their desired destination



▪ **Materiality** – Refers to the paving material used in the circulation system



▪ **Vehicular Traffic** – Refers to the degree of protection between vehicular and non-vehicular users. It is concerned with any safety features in place to help protect vulnerable street users



▪ **Non-vehicular Traffic** – Refers to the degree of separation between other non-vehicular users, primarily cyclists and pedestrians. It is also concerned with the current or potential conflict points between non-vehicular users



▪ **Unpleasant Sensory** – This is concerned with protecting non-vehicular users from unpleasant sensations such as smell and noise and climatic conditions such as rain, snow, wind, or rain



▪ **Conflict Points** – Refers to intersections or unique conflict conditions within the circulation system. It concerns how other modes interact and the clarity of direction for all users



▪ **Edge Conditions** – Refers to the edge conditions of the circulation system and how it affects its access



▪ **Surface Condition** – Refers to the material and site furnishing condition throughout the circulation system and cleanliness; pathways are clear of debris or trash



▪ **Options for Seeing** – Refers to sightlines that the circulation system provides to allow aesthetically pleasing views to increase delight



▪ **Enjoyment of Nature** – Refers to what environments the circulation system interacts with and natural elements like topography



▪ **Positive Aesthetics** – Aesthetic character within the built environment is defined by the presence of beauty and pleasant scenery, calmness, exciting things to look at, or natural features



▪ **Arrival Sequence** – The arrival sequence in circulation refers to what the user would experience as they enter the circulation system and environment around them.



CHAPTER 03

Figure 3.1: Bike Lane | By Unsplash User: Sahin Sezer Dincer



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03 METHODOLOGY

This chapter describes the overall research design and specific methods used to answer the project's research question including precedent studies, site analysis, and projective design.

Precedent Studies

A precedent study was used to identify example design features that demonstrate various criteria within the Quality of Circulation Framework. Precedent projects were selected and analyzed using the framework to reveal which criteria were present in a project and how they manifested into a physical design. The findings of the precedent studies were intended to provide a deeper understanding of the definition of each of the criteria and also to help inspire the project’s projective design of Franklin Park’s circulation system.

Procedure

Precedents were selected based on their goal of prioritizing non-vehicular users and exemplifying various criteria within themes of comfort, protection, and delight. Each precedent was analyzed from a series of collected images overlayed with the framework symbols of the Quality of Circulation Framework, highlighting exemplified criteria. Exemplified criteria were then highlighted on the Quality of Circulation Framework and paired with descriptions of how the criteria were applied.

Selection Criteria

Precedents were selected using the following criteria:

- Projects must be fully built and implemented
- Projects are not limited to a geographical region to show various strategies across circulation systems
- Must exemplify various criteria from either comfort, protection, or delight identified within the Quality of Circulation for Non-Vehicular Users’ framework
- Must have a circulation system that prioritizes non-vehicular users
- Design strategy must be replicable in other contexts

Findings Organization

Each precedent includes the following basic information:

- Name
- Location
- Size
- Designer
- Description

The circulation system of each precedent was be evaluated, and collect the following information:

- Images of the selected precedent
- Key takeaways
- Analyze the project through the Quality of Circulation for Non-Vehicular User’s Framework by highlighting exemplified characteristics and writing a description

Selected Precedent Studies

The following circulation systems of seven projects were analyzed:

- The University of Chicago 58th Street
- The 606 Trail
- Bourke Street
- Olympic Sculpture Park
- Manhattan Waterfront Greenway
- Buffalo Bayou Park
- Flower Riviera Coastal Bike Path

Precedent Studies Map



Figure 3.2: Precedent Studies World Location Map | By Author

-  **University of Chicago
58th Street**
Chicago, Illinois
-  **The 606 Trail**
Chicago, Illinois
-  **Bourke Street**
Sydney, Australia
-  **Olympic Sculpture Park**
Seattle, Washington
-  **Hudson River Greenway**
New York City, New York
-  **Buffalo Bayou Park**
Houston, Texas
-  **Flower Riviera Costal
Bike Path**
San Lorenzo Al Mare, Italy

Site Analysis

Site analysis was the primary method used in this study to inform design decisions made in the projective design. In this study, site analysis occurred in two steps. In this report, site analysis was completed during a visit to the park site, which field notes and photographs of the circulation system were documented. The second step, utilized the Quality of Circulation Framework and data from the onsite observations, and aerial images. The outcome was a comprehensive list of opportunities and constraints for each criterion outlined within comfort, protection, delight. Third step, utilized the opportunities and constraints identified previously and informed a user group analysis for each user group defined in chapter 2. User group findings informed the redesign of the Franklin Park circulation system, seeking to improve quality and usability for the non-vehicular users groups through targeted design solutions.



Figure 3.3: Path Along Lake | By Unsplash User: Tobi Waiheng

01. Site Visit

A site visit was conducted to collect on-site data and field notes. The site visit in this study was conducted in late September 2022 over one full day at the park. Before arriving at Franklin Park, a strategic itinerary and route was planned to allow for efficient data collection over the short time allotted on-site. Once arrived on-site, begin following the planned route taking photographs, notes, and sketching to collect existing elements and the overall experience of a one-time non-vehicular user. Data documented at Franklin Park consisted of the following:

- Primary circulation systems
- Circuit Drive, Circuit Loop, and Playstead Loop
- Internal Barriers
- Microscale Elements (lighting, benches, fountains, etc.)
- Interior and external entrances
- Existing Infrastructure (bike lanes and sidewalks)
- Environmental characteristics
- Edge conditions

02. Framework Application

The second step of site analysis was the application of the Quality of Circulation framework. As discussed earlier, the purpose of the developed framework was to use it as an analysis tool for circulation systems. The twenty criteria within the framework were analyzed through a series of questions specific to each. To answer each criterion, a series of maps and diagrams will be produced paired with field data collected during the site visit. After the graphics production, each was synthesized into a series of findings and opportunities identified for each characteristic, ultimately informing design suggestions for the projective design.

03. Non-Vehicular User Groups Analysis

User group defined in chapter 2 were utilized to gauge the current experience of the Franklin Park circulation system. This was the last step of the site analysis method and were used to create a set of targeted design recommendations to ultimately improve the quality and usability for the defined user groups.

Projective Design

The project's research question is ultimately addressed through a projective design of Franklin Park's circulation system. The projective design is a manifestation of findings from the primary methods and an adaptation of various recommendations from the Franklin Park Action Plan. The purpose of the projective design was to provide recommendations for improving the quality of circulation for non-vehicular user groups. Design strategies and recommendations presented in the projective design were used to determine conclusions of how the quality of circulation could be improved for the non-vehicular user groups defined in this report.



Figure 3.4: Path with Trees | By Unsplash User: Gabrielle Audu



CHAPTER 04

Figure 4.1: Running in Central Park | By Unsplash User: Chanan Greenblatt



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04

PRECEDENT STUDIES

Each of the following projects was selected for its focus on prioritizing non-vehicular circulation. The precedent projects were analyzed by applying the Quality of Circulation Framework to reveal which criteria were addressed in the project’s design, and how. Each project is discussed in terms of how it addresses criteria in the primary themes of comfort, protection, and delight.

University of Chicago 58th Street

- **Designer:** Site Design Group LLC.
- **Location:** Chicago, Illinois
- **Size:** 1.10 Acres
- **Overview:** The project is within the heart of the University of Chicago campus on line with the main circulation corridor of the university. 58th street was once a continual pedestrian corridor, however, with the hospital moving in, it was turned into a two-way street with parallel parking disrupting pedestrian flows across campus. The goal was to reunite the pedestrian spine through the removal of vehicular traffic. The concept was to create a new gateway to the university and redesigning the pedestrian spine through intricate details like materiality to create a pleasing and connection experience.
- **Takeaways:** This project powerfully illustrates various characteristics of the Quality of Circulation Framework specifically in relation to comfort. The overall conversion from a vehicular roadway to pedestrian corridor has helped reconnect the disjointed circulation spine. Outfitting the corridor with microscale features and adjacent spaces can allow users to comfortable use the space.

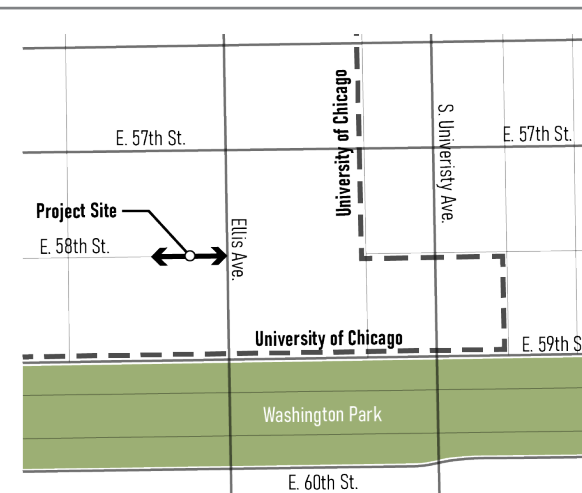


Figure 4.2: University of Chicago 58th St. Location Map | By Author



Figure 4.3: University of Chicago 58th St. | Image Credit: Site Design Group, Ltd.

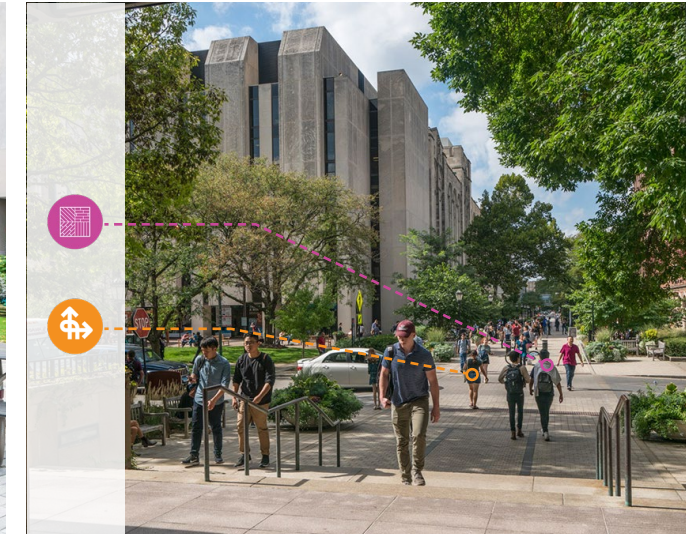


Figure 4.4: University of Chicago 58th St. | Image Credit: Site Design Group, Ltd.



Figure 4.5: University of Chicago 58th St. | Image Credit: Site Design Group, Ltd.

University of Chicago 58th Street

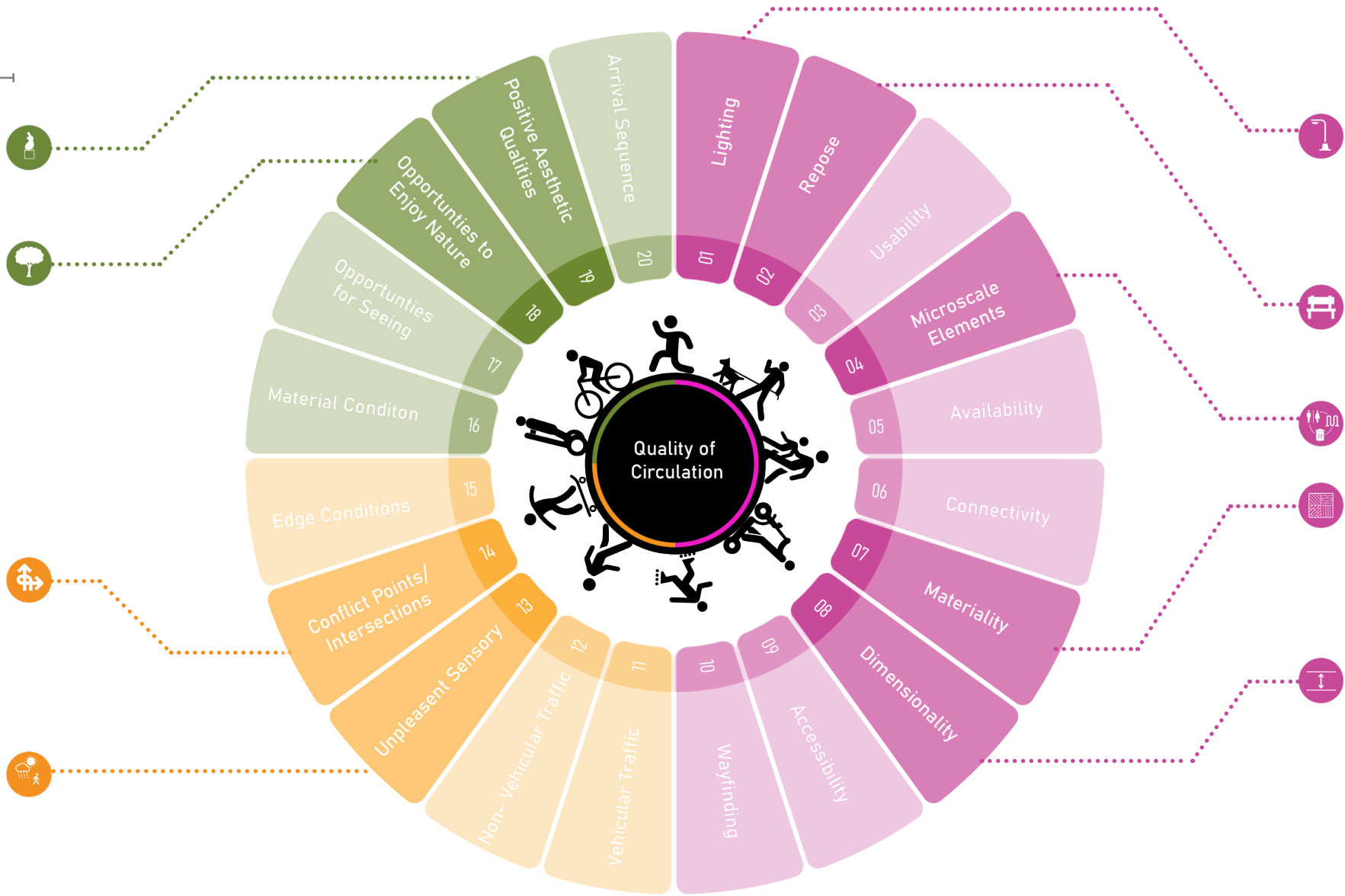
Positive Aesthetics - Instead of creating a sea of pavement, it breaks it up through a paving design within the corridor

Enjoyment of Nature - The new pedestrian corridor is filled with dense planting of lush trees and shrubs for a native planting aesthetic

Intersections - The circulation system is paired with traffic calming techniques like speed tables to slow traffic and create an easier connection across vehicular corridors and bollards to protect pedestrians and prevent vehicles from entering

Unpleasant Conditions - The use of trees along the corridor acts as a soft overhead barrier from climatic conditions and are used along the pathway and in adjacent spaces

Figure 4.6: University of Chicago 58th St. Analyzed Criteria | By Author



Lighting - Many lighting fixtures are present along the corridor that fit the aesthetic and provide adequate service during night hours as they are roughly 40' apart on both sides of the corridor

Repose - Given the context of being on a campus, there are many opportunities for repose along the pathway or in spaces created adjacent to it.

Microscale Elements - many microscale features are available to non-vehicular users

Materiality - There is a change of material within the corridor that distinguishes type of use mainly between pedestrian and vehicular. Concrete is used for vehicular pathways and brick is used for pedestrian

Dimensionality - Instead of blocking the street off for only pedestrians, the pathway was reconfigured and scaled appropriately to accommodate the pedestrian traffic and create areas adjacent to it

The 606 Trail

- **Designer:** Michael Van Valkenbur Associates Inc.
- **Location:** Chicago, Illinois
- **Size:** 2.7 Miles
- **Overview:** The 606 is similar to The Highline in New York City, as it's an elevated rail line that ran from east to west which was abandoned in the early 1990s. In 2002 the line was saved by the Rails-to-Trails Conservancy and local organizations to transform the line into a non-vehicular connection for residents of the underserved communities it bisected. The 606 turns what had been a dilapidated and imposing barrier to circulation into a transportation artery, while providing green open space within a 10-minute walk of 80,000 households.
- **Takeaways:** This project illustrates how abandoned infrastructure can be transformed into a comfortable circulation system. Use of microscale features, dimensionality, materiality, and space for repose combine to form a pleasing circulation experience. Also, path width does not have to use all available space, providing only what is needed creates opportunities to introduce elements of comfort and delight.

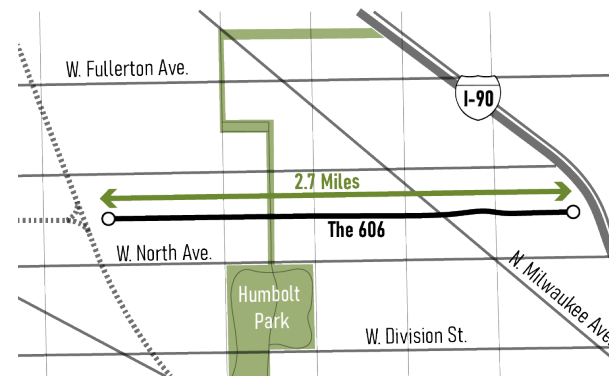


Figure 4.7: The 606 Trail Location Map | By Author



Figure 4.8: The 606 Trail | Image Credit: Scott Shigley



Figure 4.9: The 606 at Night | Image Credit: The Trust for Public Land

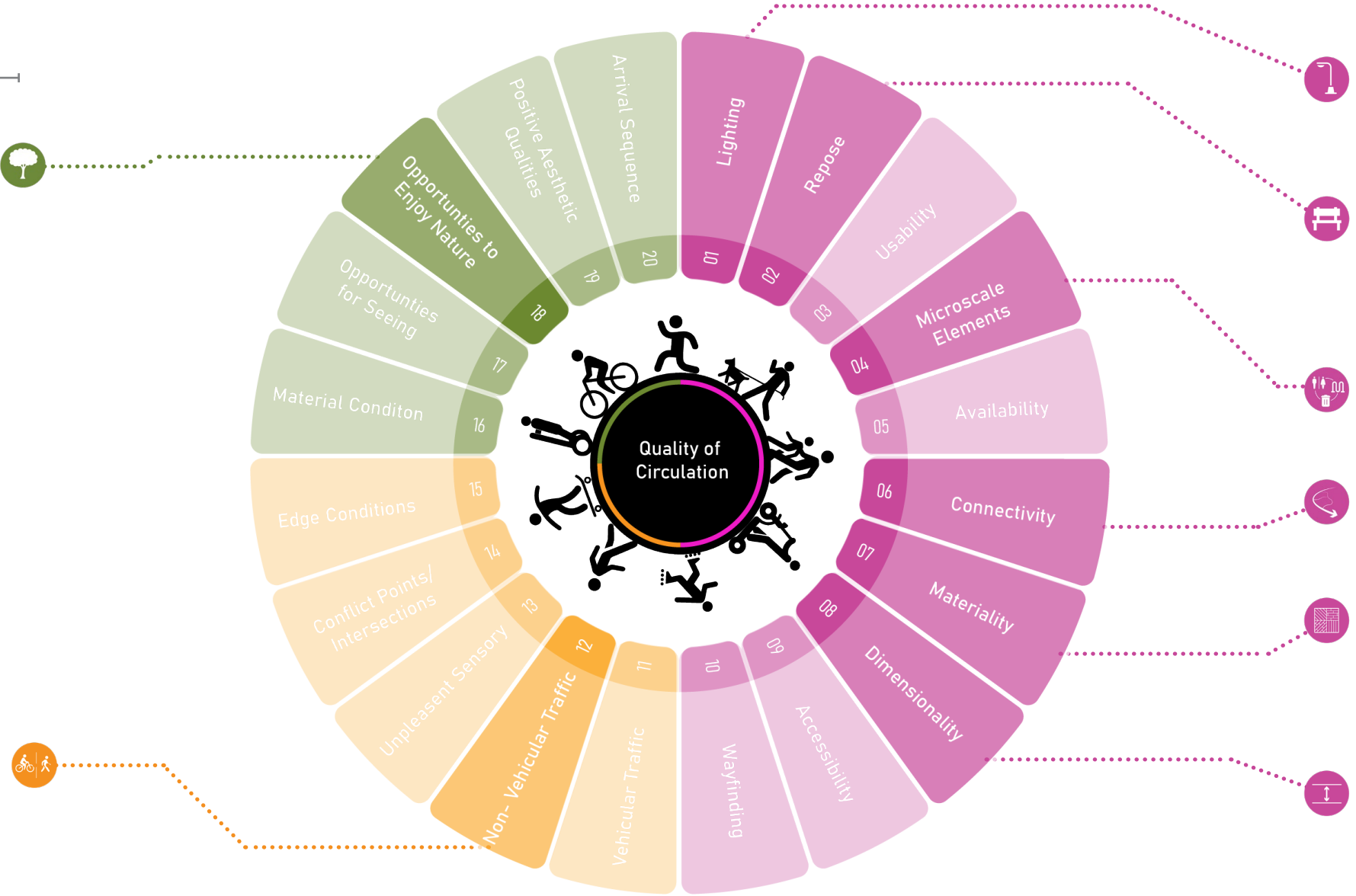


Figure 4.10: The 606 Aerial Photo | Image Credit: Alex MacLean

The 606 Trail

Enjoyment of Nature - The goal of the 606 was to take an industrial structure and transform it into a park-like experience through dense planting and rolling topography to introduce a pleasant and unique experience from its urban context

Non-Vehicular Traffic - The pathway is treated like a highway in a sense that there is a dividing line to differentiate between directions and speed



Lighting - Lighting features have a strong presence making the pathway well-lit at night. The features are designed to be an architectural piece rather than just for service

Repose - The design of pathway ungulate to create spaces next to the pathway for users to pull-off. Also, many small parks are adjacent to the 606 that allow for easy access. Various seating types are available to all users

Microscale Elements - The 606 is outfitted with many microscale features throughout as well as maintaining a modern aesthetic

Connectivity - The 606 is a complete continuous pathway throughout its 3-mile length will no interruptions

Materiality - The 606 uses a change in material to identify varying modes of transportation. Along the pathway, there is concrete for faster moving traffic like bikes, flanked by a blue rubberized material for slower moving traffic like walkers

Dimensionality - While the rail line itself is 30'+, the circulation route is scaled appropriately to provide enough room for non-vehicular users traveling in opposite directions

Figure 4.11: The 606 Trail Analyzed Criteria | By Author

Bourke Street

- **Designer:** Group GSA
- **Location:** Sydney, Australia
- **Size:** 2 Miles
- **Overview:** Bourke Street is the City of Sydney's first bidirectional separated cycle track aiming to increase the quality and scope of the cities cycle network. The scope consists of roughly two miles of streetscape interventions to provide safety and amenities for cyclists and pedestrians while reducing the dangers of vehicular traffic. The street is now a 'greener' environment with street tree planting, street verge planting, stormwater quality improvements through the introduction of rain gardens. The two-way separated cycleway delivers improved safety, comfort, and amenity for people on bicycles as well as improved amenity in the streetscape for all pedestrians.
- **Takeaways:** Bourke Street demonstrates how a street can be reconfigured to reduce the total volume and flow of vehicular traffic and replace that with non-vehicular infrastructure like a cycle track. Additionally, it illustrated that it can create space for delight elements like planting and comfort elements like benches and bikes to increase the quality for non-vehicular users.

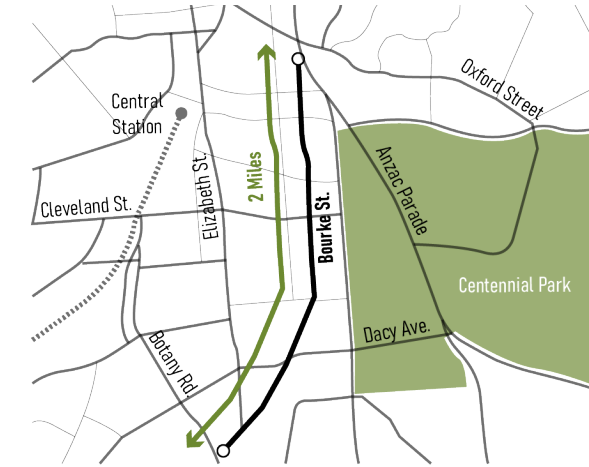


Figure 4.12: Bourke Street Location Map | By Author



Figure 4.13: Bourke Street Cycle Track | Image Credit: Google Earth



Figure 4.14: Bourke Street Raised Intersections | Image Credit: Google Earth

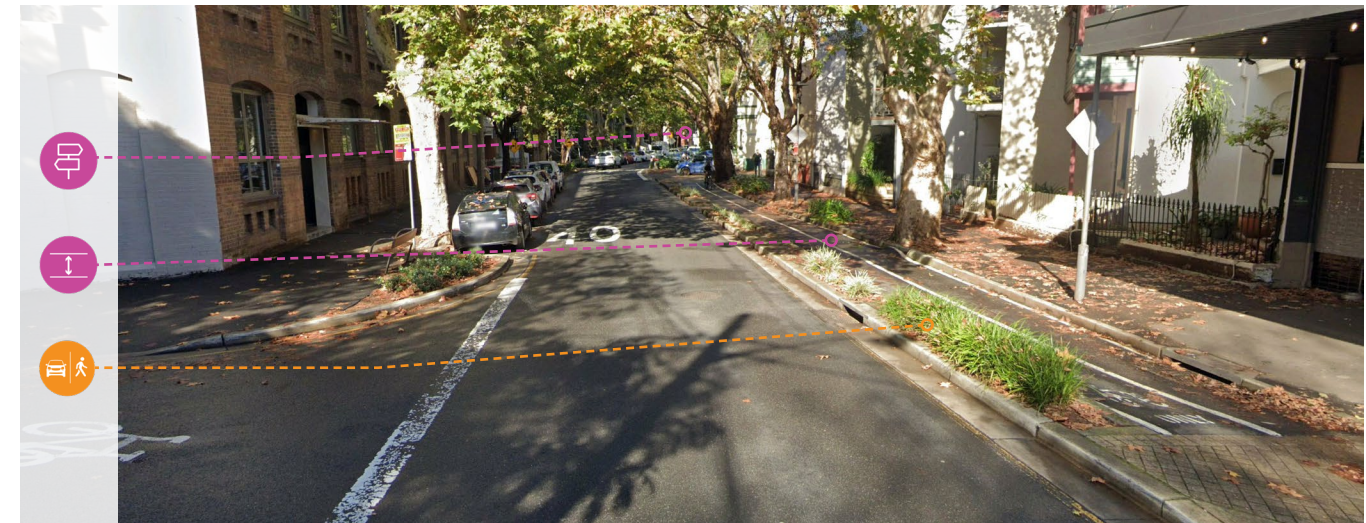


Figure 4.15: Bourke Street Streetscape | Image Credit: Google Earth

Bourke Street

Enjoyment of Nature - Bourke street is unique in that it provides a constant enjoyment of natural elements through extensive planting along the corridor. The street is lined with trees and planted buffers to soften urban context

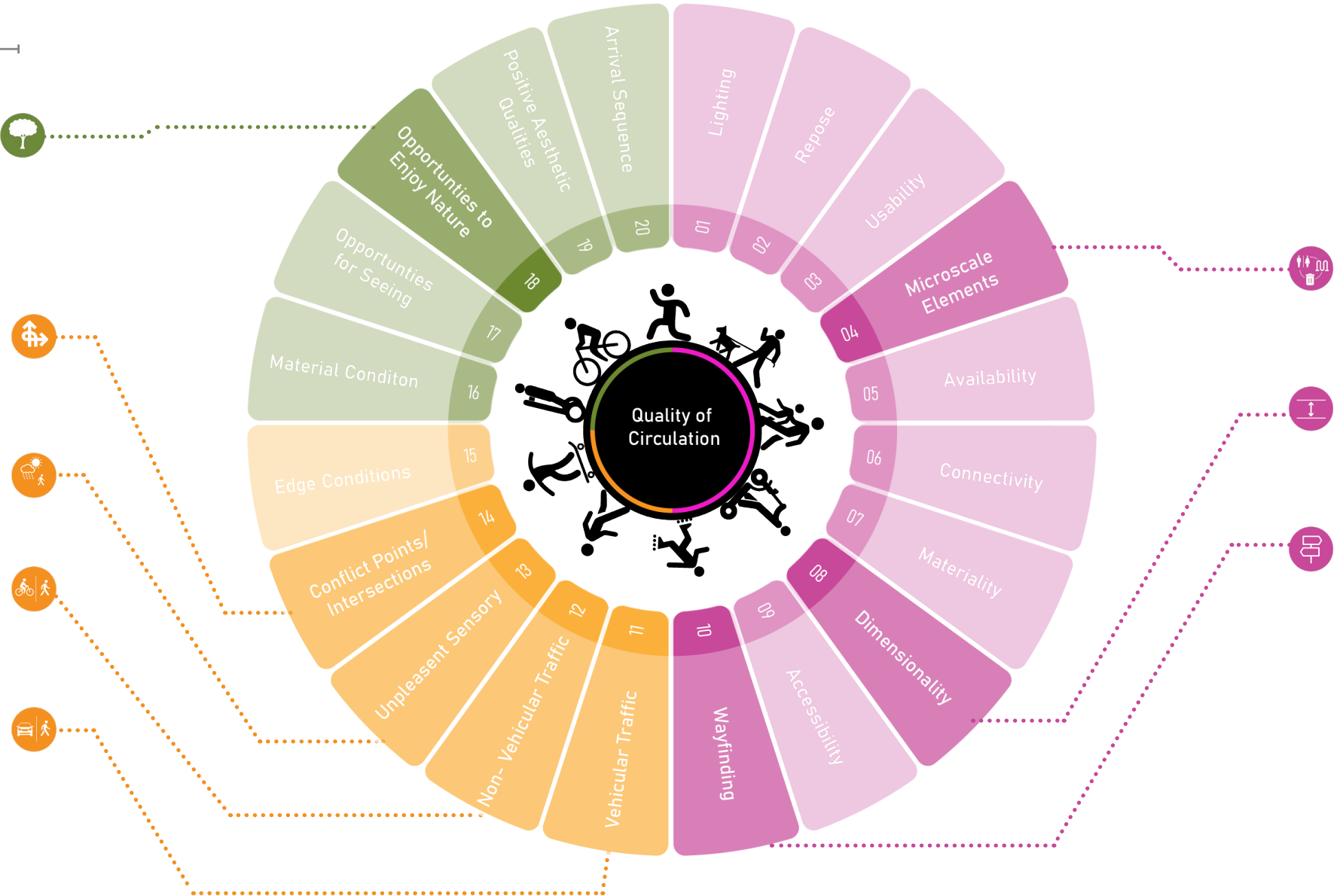
Intersections - All pedestrian intersections or crosswalks in Bourke Streets entirety are paired with traffic calming methods like bump-outs and speed tables to reduce speed

Unpleasant Conditions - The new street has provided space for tree planting which covers a majority of the street from climatic conditions

Non-Vehicular Traffic - In the reconfiguration, a two way cycle track was added due to high cycling numbers in order to separate bikes and pedestrians

Vehicular Traffic - Bourke street was reconfigured in two different ways, a singular lane dual direction and one way to make room to add planted buffers and curbs to separate different modes of transportation

Figure 4.16: Bourke Street Analyzed Criteria | By Author



Microscale Elements - Over two miles, there are multiple features like bike racks, repair stations, and trash receptacles aiming to make the circulation system comfortable

Dimensionality - The reconfiguration of the street reduces dimensions for appropriate usage like decreasing vehicular lanes and widening non-vehicular spaces

Wayfinding - The wayfinding system is directed toward cyclists and provides directional signage throughout its length

Olympic Sculpture Park

- **Designer:** Weiss/Manfredi
- **Location:** Seattle, Washington
- **Size:** 12 Acres
- **Overview:** Olympic Sculpture Park is a continuous constructed landscape to reconnect the urban core of Seattle to its waterfront featuring art. The park is a part of a art museum but uses the landscape as a place to display art to bring the park itself into the fabric of the city. The selected pieces are used to ground the project within the urban context while also giving it a sense of place. The park is also unique in the way that primary circulation is designed. A continuous Z-shaped path is used to traverse the 40 foot drop from the city to beach while maintaining striking views.
- **Takeaways:** Olympic Sculpture Park demonstrates strong qualities of delight and how they are incorporated into a circulation system. Art and sculptures are placed adjacent to the circulation system for easy viewing and able to interact with. Planting aesthetic also enhances delight of softening the feeling of the urban environment into a continuous enjoyment of natural features.



Figure 4.17: Olympic Sculpture Park Location Map | By Author



Figure 4.18: Riverfront Area for Repose | Image Credit: Weiss/Manfredi



Figure 4.19: Riverfront Trail | Image Credit: Weiss/Manfredi

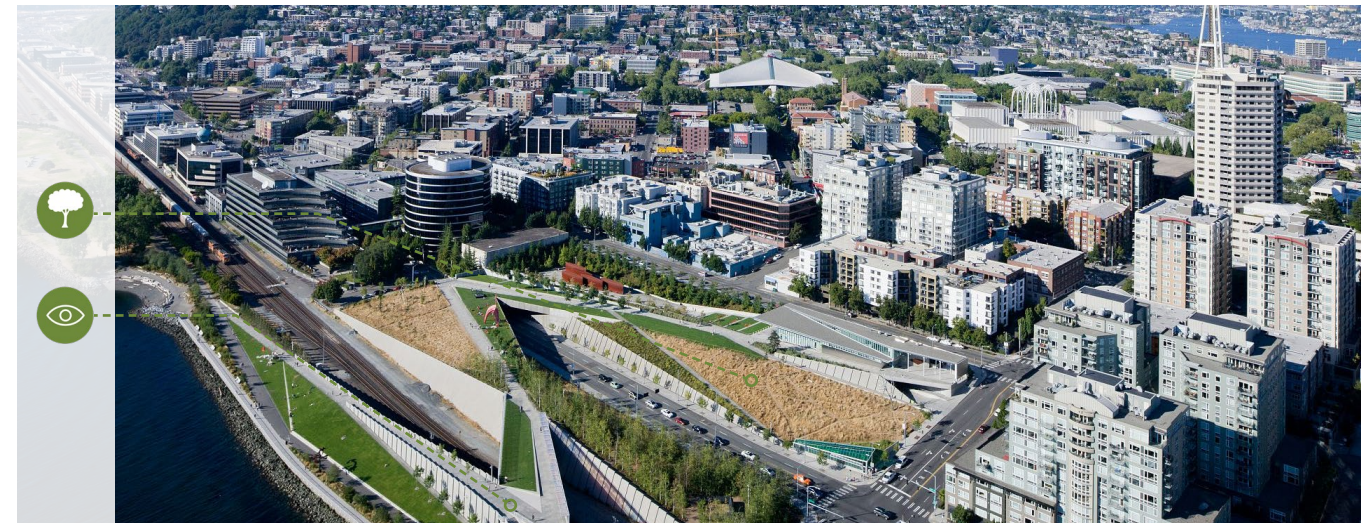


Figure 4.20: Aerial View of Olympic Sculpture Park | Image Credit: Weiss/Manfredi

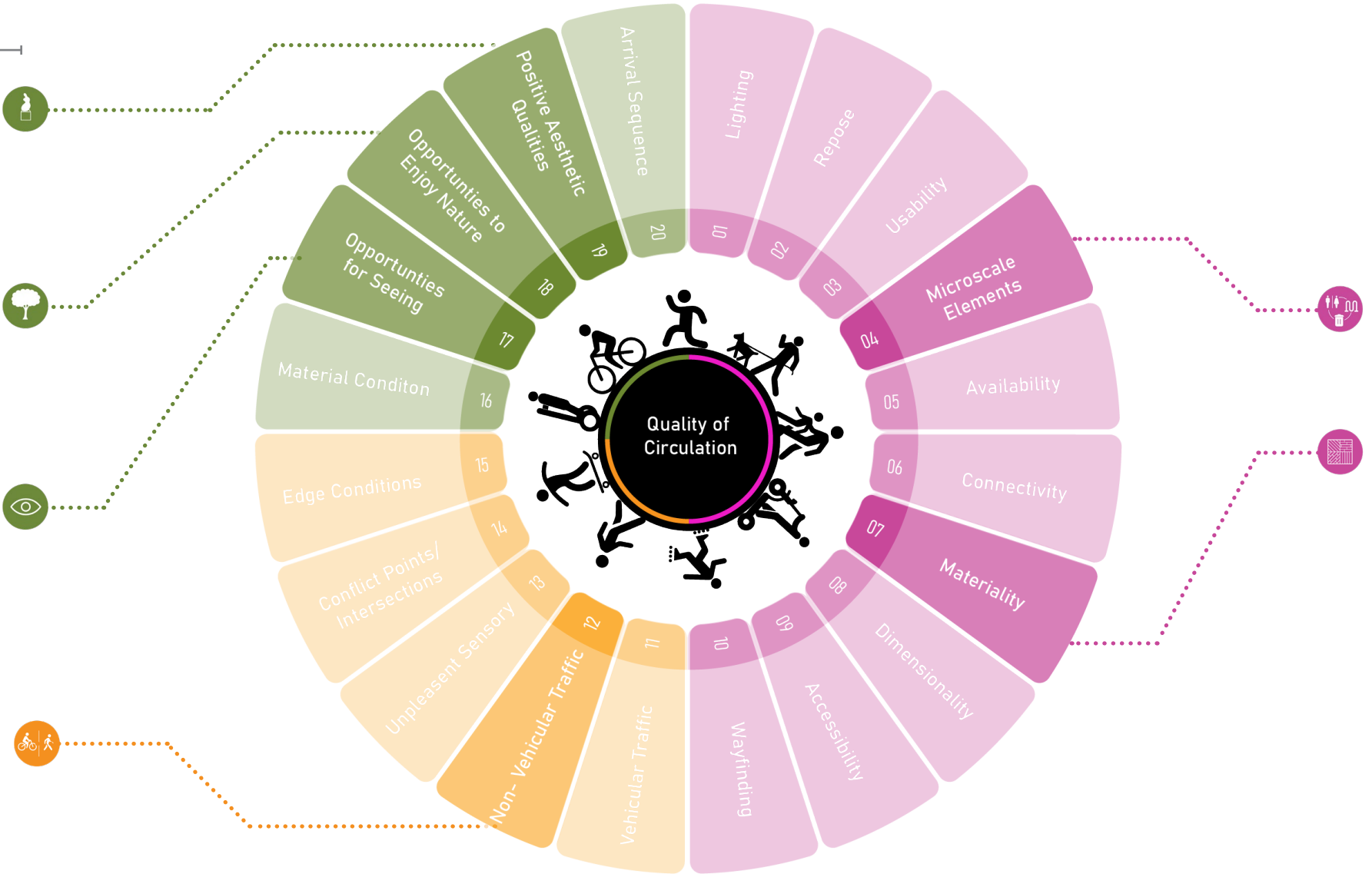
Olympic Sculpture Park

Positive Aesthetics - Art is the primary aesthetic feature that is incorporated into the circulation system within the park. The art is sculptures that are adjacent to pathways for users to either look at or interact with. Water features are also used at entrances to the park.

Enjoyment of Nature - The park incorporates a planting aesthetic of various ecoregions within the northwest for users to interact with. Microscale elements like seating utilize the natural features like logs and stones playing with the natural aesthetic

Opportunities for Seeing - The circulation system does provide sightlines into the surrounding area and capitalizing on them through unobstructed views or paring them with areas of repose.

Non-vehicular Traffic - The primary pathways along the water is divided into two separated pathways for each mode, cycling and pedestrians. These pathways are divided by planted buffers of varying widths



Microscale Elements - Throughout the circulation system there are various microscale features available to pedestrians and cyclists like bike racks, and trash receptacles

Materiality - The circulation system transitions between paving types from concrete to gravel. Reasoning behind this decision is to influence the use as concrete is used for faster and direct movement whereas gravel is used when a meandering experience is desired

Figure 4.21: Olympic Sculpture Park Analyzed Criteria | By Author

Hudson River Greenway

- **Designer:** MNLA
- **Location:** New York City, New York
- **Size:** 32 Miles
- **Overview:** The Manhattan Waterfront Greenway consists of three greenways: the Hudson River, East River, and Harlem River greenways which make up a roughly a 32 mile trail around the island of Manhattan. The bikeway is separated from a six-lane highway through planted buffers and is, according to the Hudson River Park Trust, the most heavily used bikeway in the United States. A defining feature of the greenway is the 32-mile trail system that runs the entirety of the system.
- **Takeaways:** This project powerfully illustrates the importance of protection between different modes of transportation. The project protects non-vehicular users from vehicular traffic and provides dedicated space for pedestrians and cyclists to reduce conflict between all. It was accomplished through various planting buffers that served a multi-functional purpose of providing a barrier and creating an enjoyment of nature within an urban context.



Figure 4.22: Hudson River Greenway Location Map | By Author



Figure 4.23: Area for Repose Along Greenway | Image Credit: Google Earth



Figure 4.24: Aerial of Hudson River Greenway and Adjacent Street | Image Credit: Google Earth

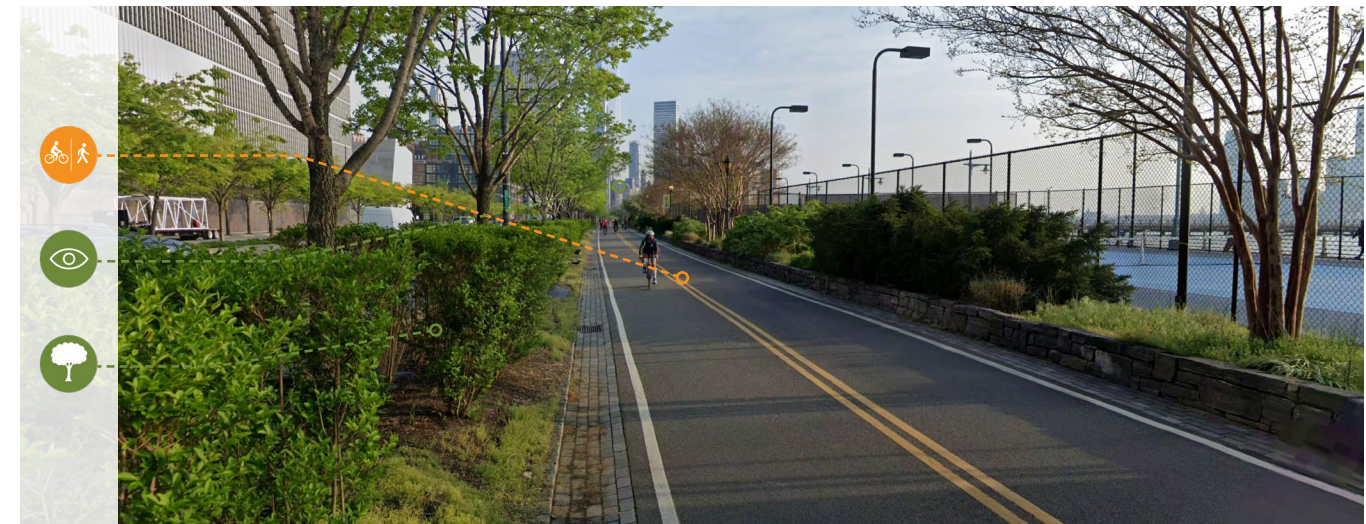
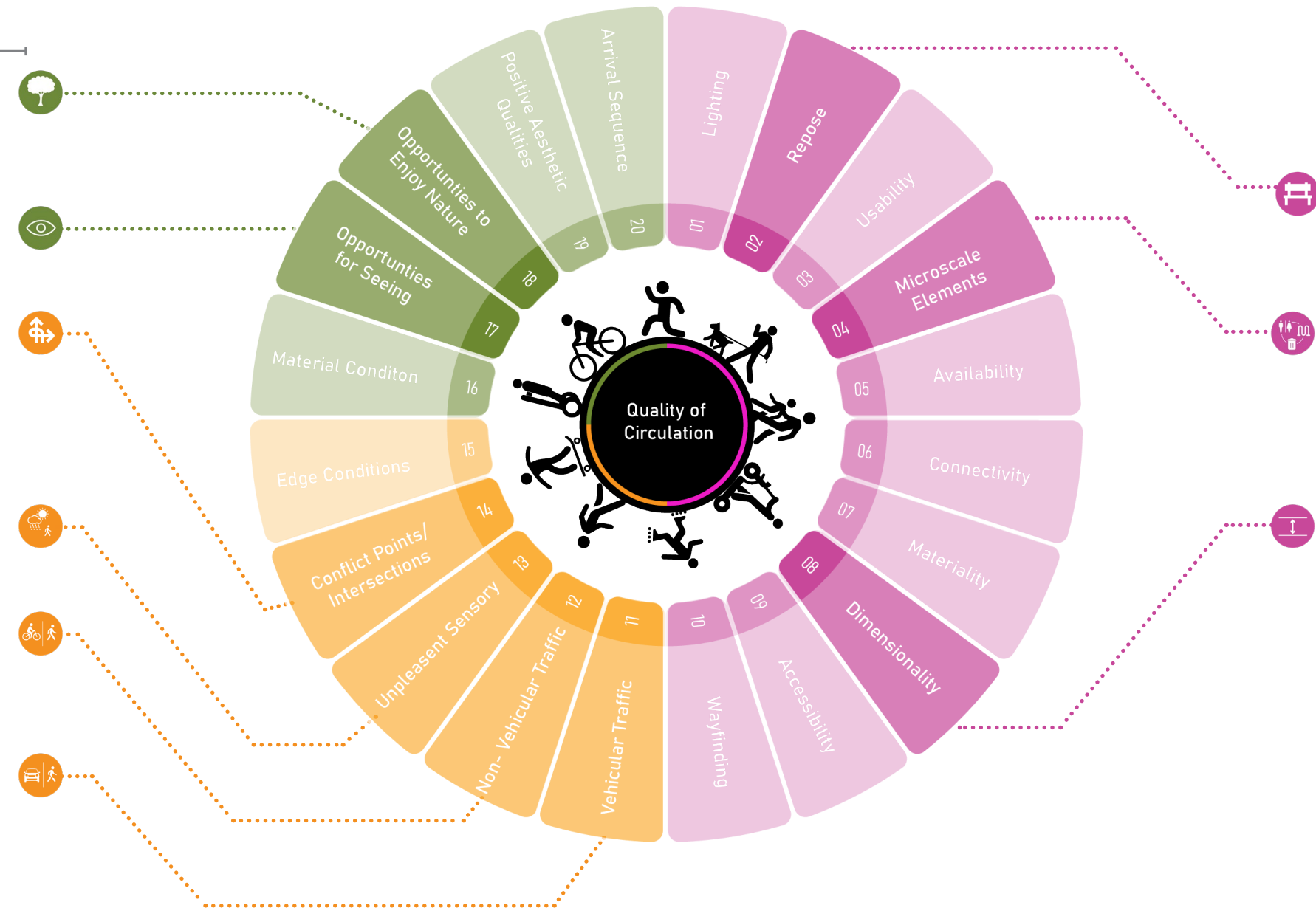


Figure 4.25: Hudson River Greenway | Image Credit: Google Earth

Hudson River Greenway

- Enjoyment of Nature** - Provides a constant enjoyment of natural features like a native planting aesthetic along both sides of the greenway
- Opportunities for Seeing** - Areas of repose are paired with identified viewpoints for users to pull off and enjoy
- Intersections** - Due to the greenway being adjacent to a 6 lane highway, there are large stretches non-vehicular users are exposed. The greenway provides well-marked intersections and refuge islands to reduce the time exposed to both vehicular and cycling traffic
- Unpleasant Conditions** - The greenway is continually lined with tree planting to help protect from unpleasant climatic conditions
- Non-Vehicular Traffic** - There is a unique separation between cycling and pedestrian traffic are constantly buffered by a curb or planted buffer of varying widths.
- Vehicular Traffic** - The greenway throughout its entire length is separated by a 8' raised planted buffer filled with trees and native planting.

Figure 4.26: Hudson River Greenway Analyzed Criteria | By Author



- Repose** - The greenway has continuous variety of spaces adjacent to the greenway for both cyclists and pedestrians to pull off and rest or linger at a view
- Microscale Elements** - Over 32 miles, microscale elements are plentiful catering to both cyclists and pedestrians. Cyclists have many opportunities to access bike racks and repair station, whereas pedestrians have access to seating and waste receptacles
- Dimensionality** - Provides adequate space for all non-vehicular users. Has a 7' two way lane cycle track for direct movement and larger pedestrian paths for a more meandering route

Buffalo Bayou Park

- **Designer:** SWA Group
- **Location:** Houston, Texas
- **Size:** 2.3 Miles
- **Overview:** Buffalo Bayou is one of the major rivers that runs through the heart of Houston known for its exponential flooding during rain-events. As restoration events were needed, a realization of turning the floodway manifested into the most iconic climate resilient designs as it withstood Hurricane Harvey. The linear park is 2.3 miles long with an extensive circulation system designed to provide aesthetic beauty, accessibility, and connection to surrounding neighborhoods.
- **Takeaways:** The Buffalo Bayou Park powerfully demonstrates many characteristics of comfort, safety, and delight within a circulation system. The overall takeaway is connectivity in which the park created connections across the park even with the presence of a physical barrier. The circulation system introduced a loop system that broke off the primary loop, creating a variety of experiences and lengths for non-vehicular users to enjoy. With the system being outfitted with the other characteristics makes it a strong example of what quality is in circulation.



Figure 4.27: Buffalo Bayou Location Map | By Author



Figure 4.28: Art Incorporated Along Internal Pathways | Image Credit: Google Earth



Figure 4.29: Buffalo Bayou Riverfront Trail | Image Credit: Google Earth

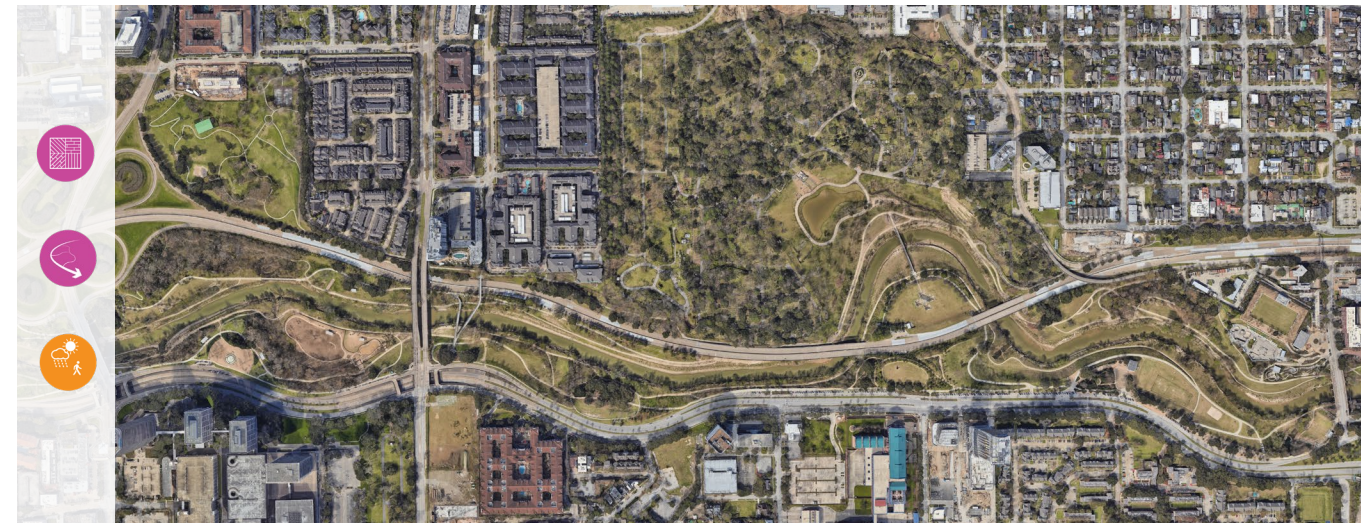


Figure 4.30: Buffalo Bayou Plan Rendering | Image Credit: Google Earth

Buffalo Bayou Park

Positive Aesthetics - Many aesthetic features accompany the circulation system like public art, sculptures, and water features. These are placed along the or in spaces adjacent of the circulation system which users can easily access

Enjoyment of Nature - While a major part of the aesthetic comes from environmental function, it helps circulation system be immersed within the natural environment and Buffalo Bayou. The design of circulation also is designed intentionally to provide a unique experience for a user giving them a choice of ascending or descending closer to the bayou or city

Opportunities for Seeing - The circulation system capitalizes on two sets of views, natural and man-made. Identified views were paired with active or passive spaces.

Unpleasant Conditions - A lot of protection from unpleasant climatic conditions comes from canopy cover but the pavilions also accompany the circulation system to provide a physical barrier. These are placed either next to or in adjacent spaces of the circulation system

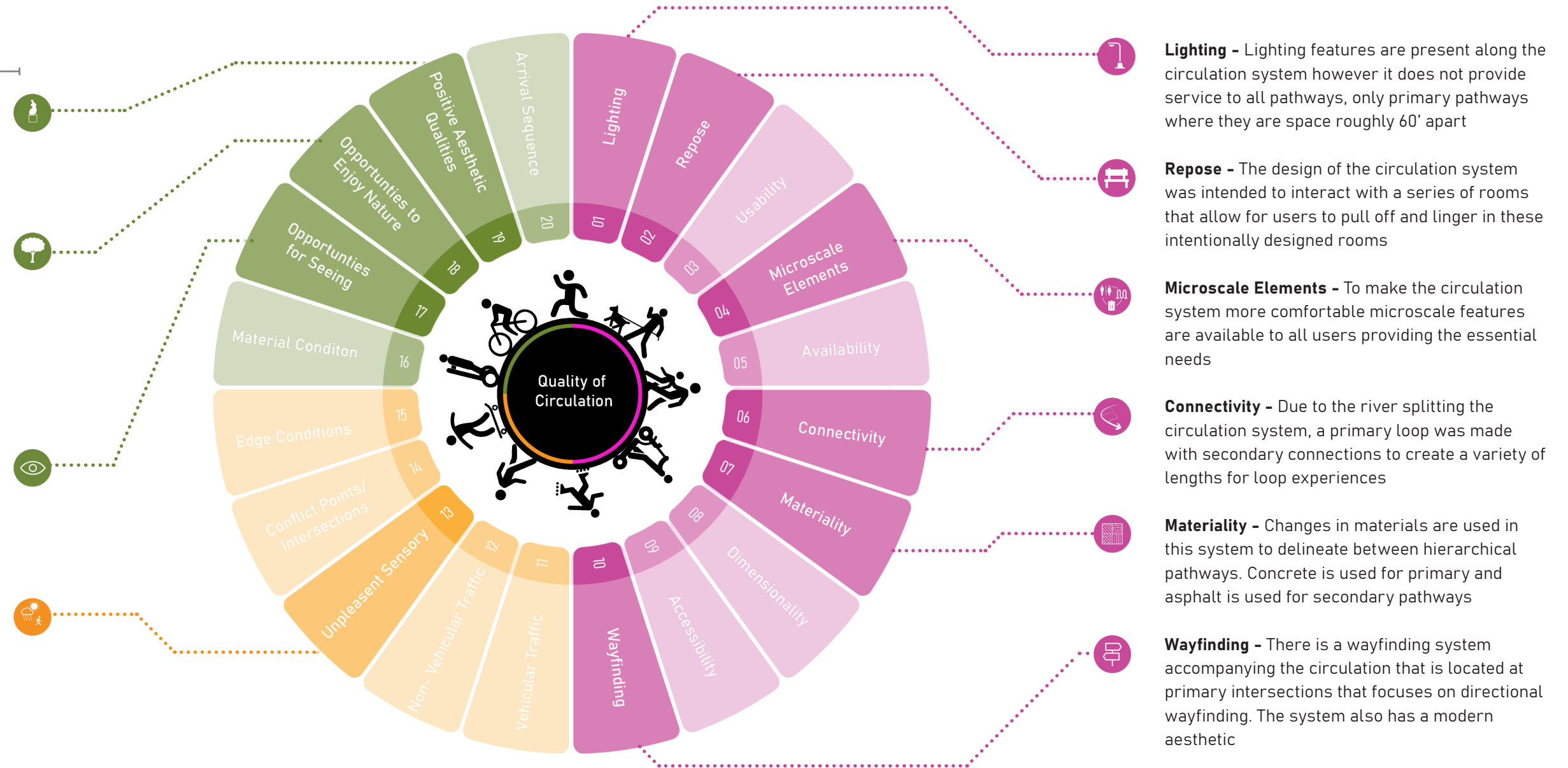


Figure 4.31: Buffalo Bayou Park Analyzed Criteria | By Author

Flower Riviera Costal Bicycle Path

- **Designer:** LAND Italia
- **Location:** San Lorenzo Al Mare, Italy
- **Size:** 15 Miles
- **Overview:** This precedent was on old rail line that was used in the late 1800s to mid-1900s that ran along the Ligurian coast in northwestern Italy. Over time, the rail line became a barrier to the coastline, the main attraction, which inhibited the growth of cities and public spaces. In response, a new rail line was constructed leaving this one ripe for opportunities of landscape rehabilitation and creation of a collective system of paths and green space. The project aimed to redevelop the former tracks into an essential green infrastructure which included cycling and pedestrian paths, paired with plaza-like spaces to allow for enjoyment for the user and tourists.
- **Takeaways:** This project illustrates the need for comfort elements due to its length. Over the 15 miles, the circulation system is outfitted with many opportunities for repose and essential infrastructures to allow a non-vehicular user feel comfortable. Also, pairing areas of repose with views helps create delight from a relatively passive space.



Figure 4.32: Flower Riviera Coastal Bike Path Location Map | By Author



Figure 4.33: Area of Repose Along Pathway Overlooking the Ocean | Image Credit: Google Earth



Figure 4.34: Area of Repose outfitted with Microscale Elements | Image Credit: Google Earth



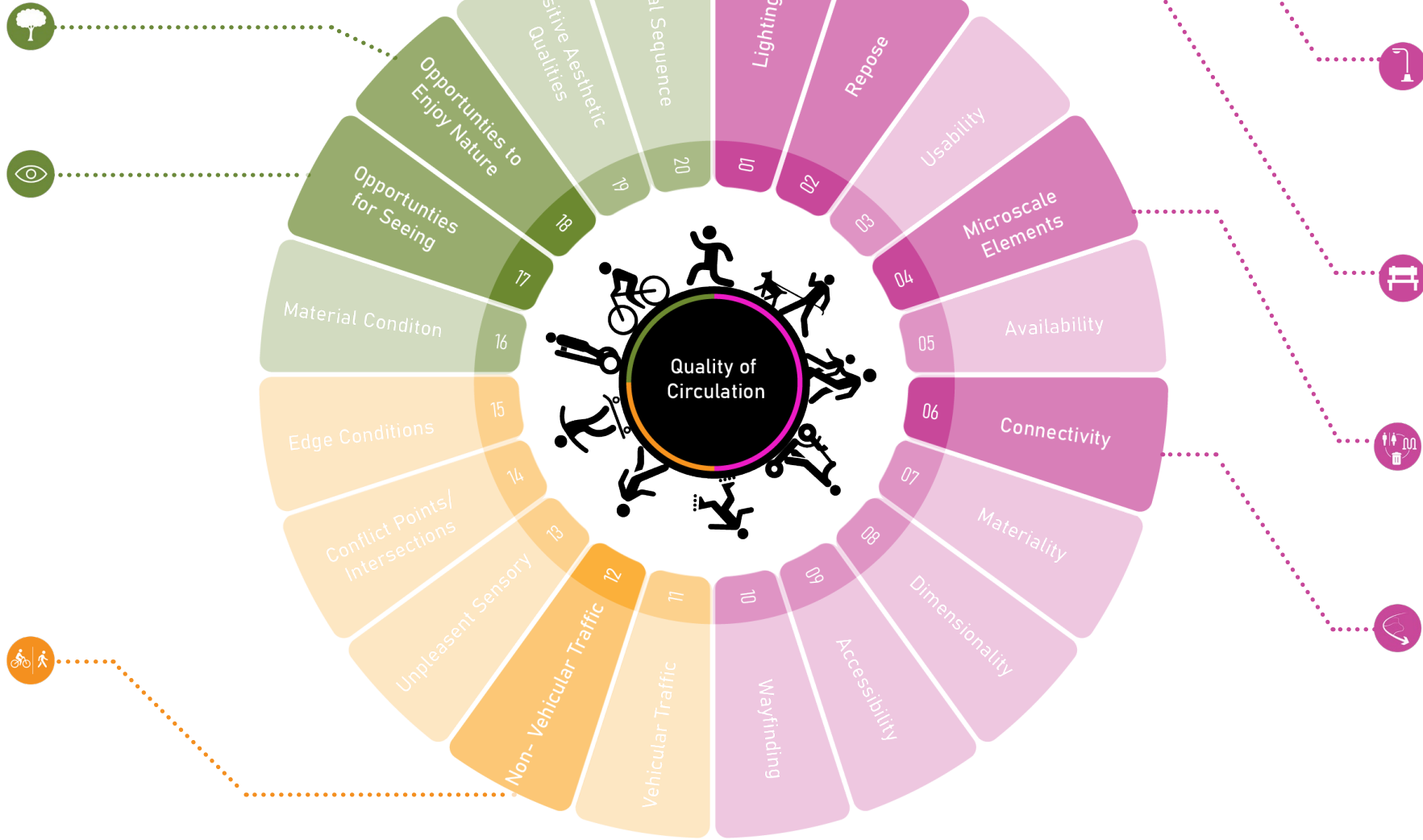
Figure 4.35: Flower Riviera Coastal Bike Path | Image Credit: Google Earth

Flower Riviera Costal Bicycle Path

Enjoyment of Nature - The entire stretch of the system is flanked with dense planting on one or both sides to allow for a complete immersion within nature

Options for Seeing - The circulation system capitalizes on view to the ocean and creates pull-off spaces for people to enjoy the identified views.

Non-Vehicular Traffic - Different non-vehicular modes are separated in this circulation system by marked lanes for cyclists and pedestrians. Some segments provide separate pathways for protection



Lighting - This circulation uses two different types of lighting features, pedestrian and pathway lighting. Pedestrian lights are tall fixtures that light primary pathway and pathway lights are smaller fixtures that light the secondary pathway. They both have a cohesive aesthetic

Repose - There are many pull-off spaces along the primary pathways that are paired with viewpoints and seating elements to rest and enjoy

Microscale Elements - Over 15 miles in length, microscale elements are essential to make a user feel comfortable in order for it to be used. The pathway provides many features like trash cans, bike racks, and water fountains throughout.

Connectivity - The bike path is a continuous system over 15 miles that goes uninterrupted for the majority of its length

Figure 4.36: Flower Riviera Coastal Bike Path Analyzed Criteria | By Author

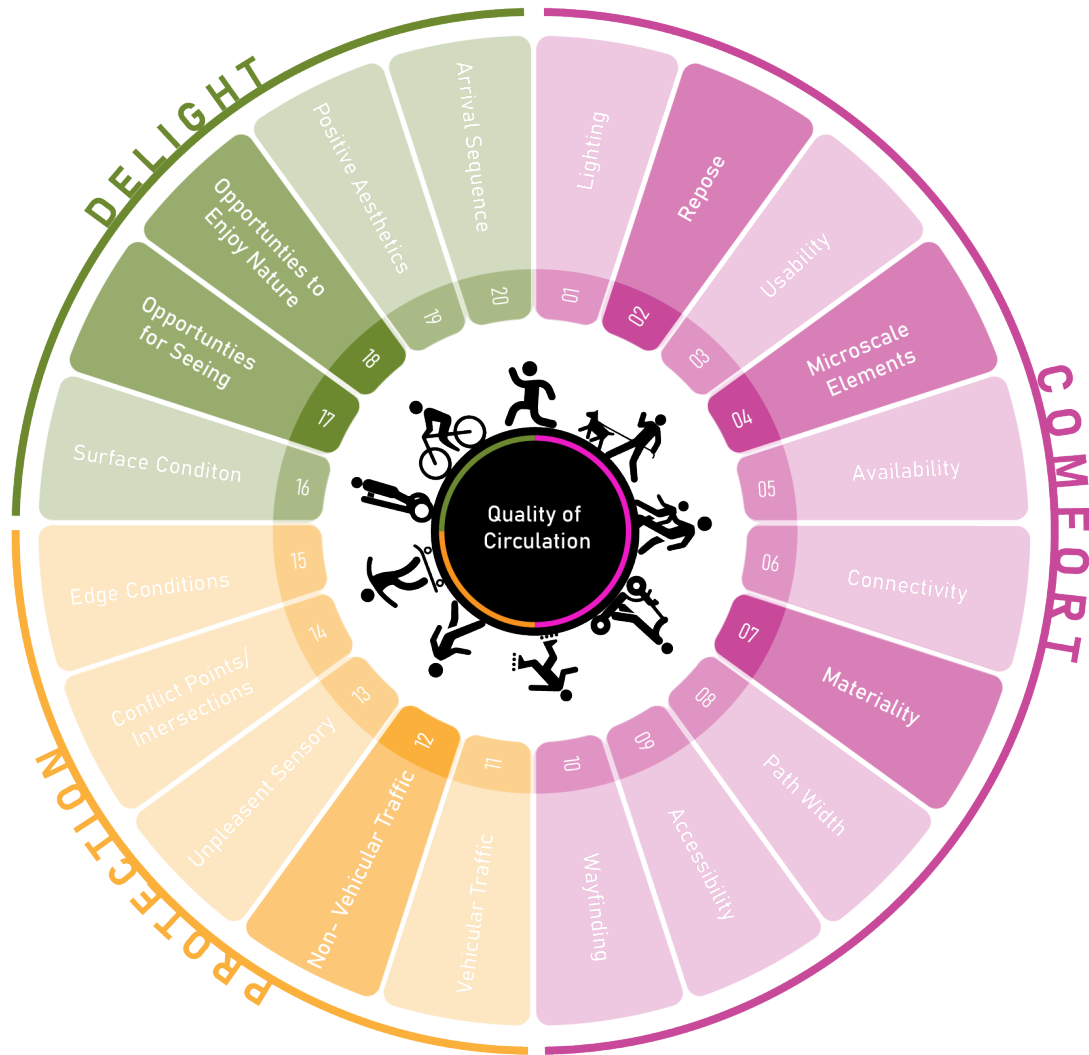


Figure 4.37: Precedent Studies Analysis Diagram | By Author

Precedent Studies Summary

The projects all that had a primary goal of prioritizing non-vehicular transportation. The findings from each precedent revealed various strategies for multiple criteria identified within the Quality of Circulation Framework. Analysis revealed on how the criteria were implemented through design. While all examples from each precedent were significant, the outlined criteria below were found to be the most relevant and impactful when designing for quality and usability.

Microscale Elements

All circulation systems provided the basic needs to non-vehicular users, like bike racks, trash receptacles, water fountains, and restroom facilities. These elements were notably available throughout the entirety of the system.

Repose

Circulation systems analyzed varied in length, however; each system provided many opportunities for repose throughout the entire system.

Materiality

In many circulation systems, paving materials changed for various reasons like aesthetics, delineate change in use, or identify areas of repose.

Non-Vehicular Traffic

Many circulation systems provide divided lanes between non-vehicular modes, specifically cyclists and pedestrians, or to delineate direction. This aimed to reduce the amount of conflict and increase the feeling of protection.

Enjoyment of Nature

All circulation systems were in different contexts, however; each provided an opportunity to enjoy nature with natural planting aesthetics.

Opportunities for Seeing

Many circulation systems capitalize on views adjacent to the system, both natural and sculptural. Notably, viewpoints were paired with areas of repose in many of the selected projects.



CHAPTER 05

Figure 5.1: Person Walking | By Unsplash User: Arek Adeoye



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05 SITE ANALYSIS

The Quality of Circulation Framework was used as a tool for the site analysis of Franklin Park to determine opportunities for design improvements to the park’s circulation system. This chapter includes the findings of applying the framework.



Figure 5.2: Aerial View of Downtown Boston | By Unsplash User: Osman Rana

Site Analysis – Contextual

Contextual and internal analysis preceded the framework application to gain a basic understanding of the external or internal influences around and spatial organization within the Franklin Park circulation system. The following contextual information was gathered and displayed through the following diagrams:

- Neighborhoods
- Land Use and Character
- Public Transportation
- Boston Bikeshare Stations
- Private Areas
- Internal Programming
- Topography
- Vegetation

Neighborhoods

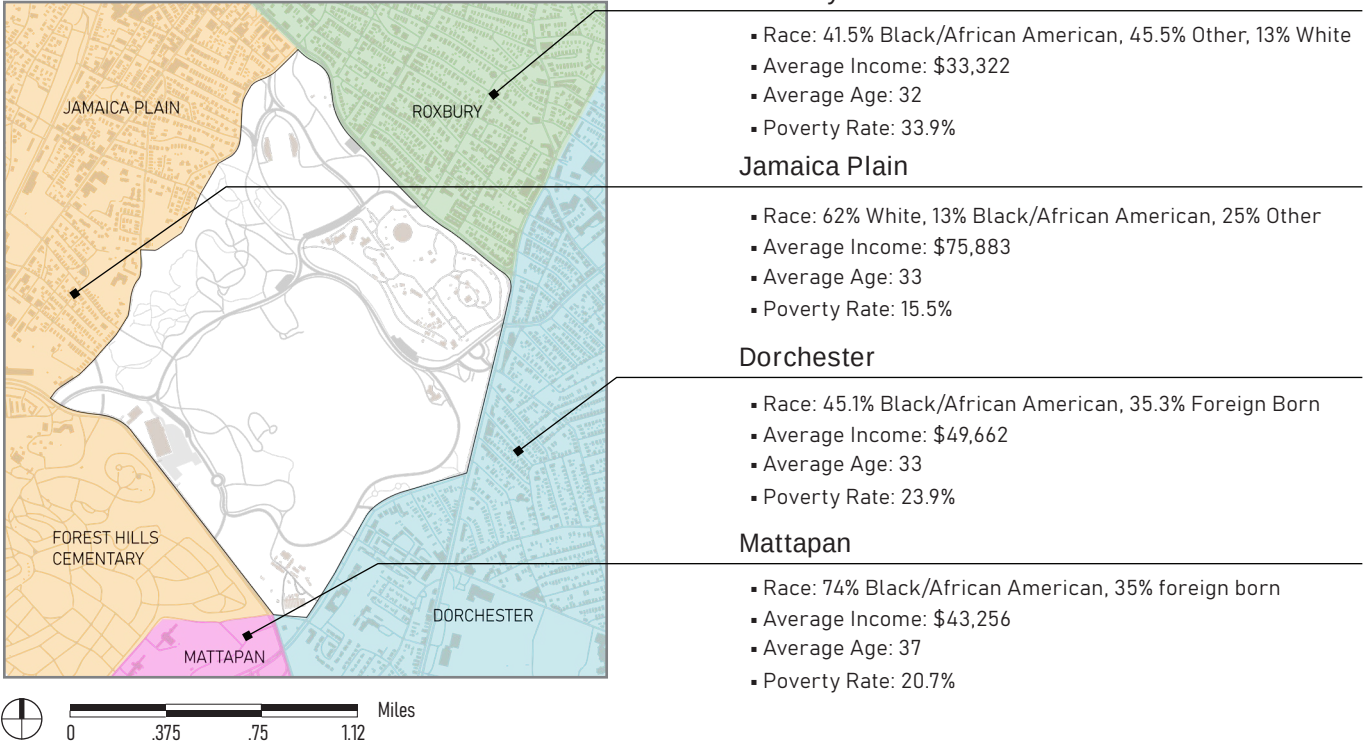


Figure 5.3: Franklin Park Neighborhoods | By Author; Data Sourced from Franklin Park Action Plan 2022

Four neighborhoods surround Franklin Park; Roxbury, Jamaica Plain, Dorchester, and Mattapan, each with unique demographics. The north, east, and south have higher Black/African American populations and poverty rates. In contrast, higher white populations and household

incomes are seen in the west. It is essential to note this demographic information of the surrounding neighborhoods as 77% of Franklin Park users are from the surrounding area (Boston Parks & Recreation Department 2022).

Land Use and Character

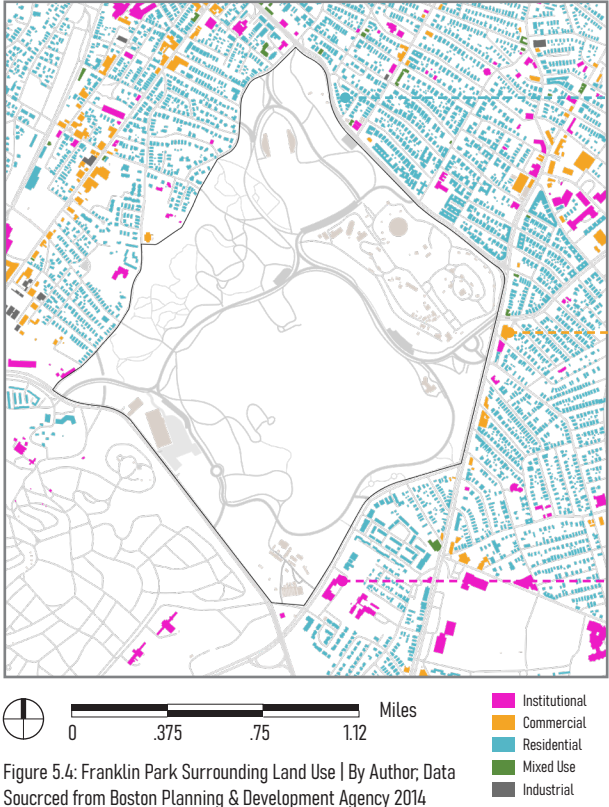


Figure 5.4: Franklin Park Surrounding Land Use | By Author; Data Sourced from Boston Planning & Development Agency 2014

Franklin Park is surrounded by four neighborhoods, showing that the primary land use type is residential. However, the residential comprises multiple housing types such as single, two, and three-family homes, apartments, condominiums, and mixed-use residential.



Figure 5.4.1: Residential along Seaver St. | By Author

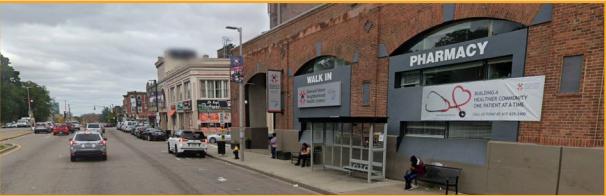


Figure 5.4.2: Commercial along Blue Hills Ave. | By Author

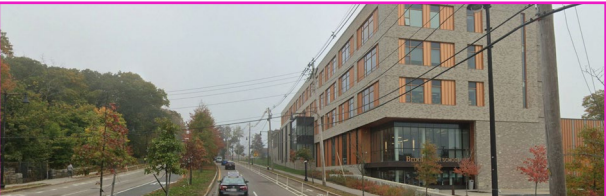


Figure 5.4.3: Institution - Brooke High School | By Author

Mixed within the residential land uses, scattered commercial buildings and institutions such as schools, churches, and other organizations exist. However, along park edges, the common land type is residential along all edges except Blue Hills Ave. with commercial mixed in.

Public Transportation

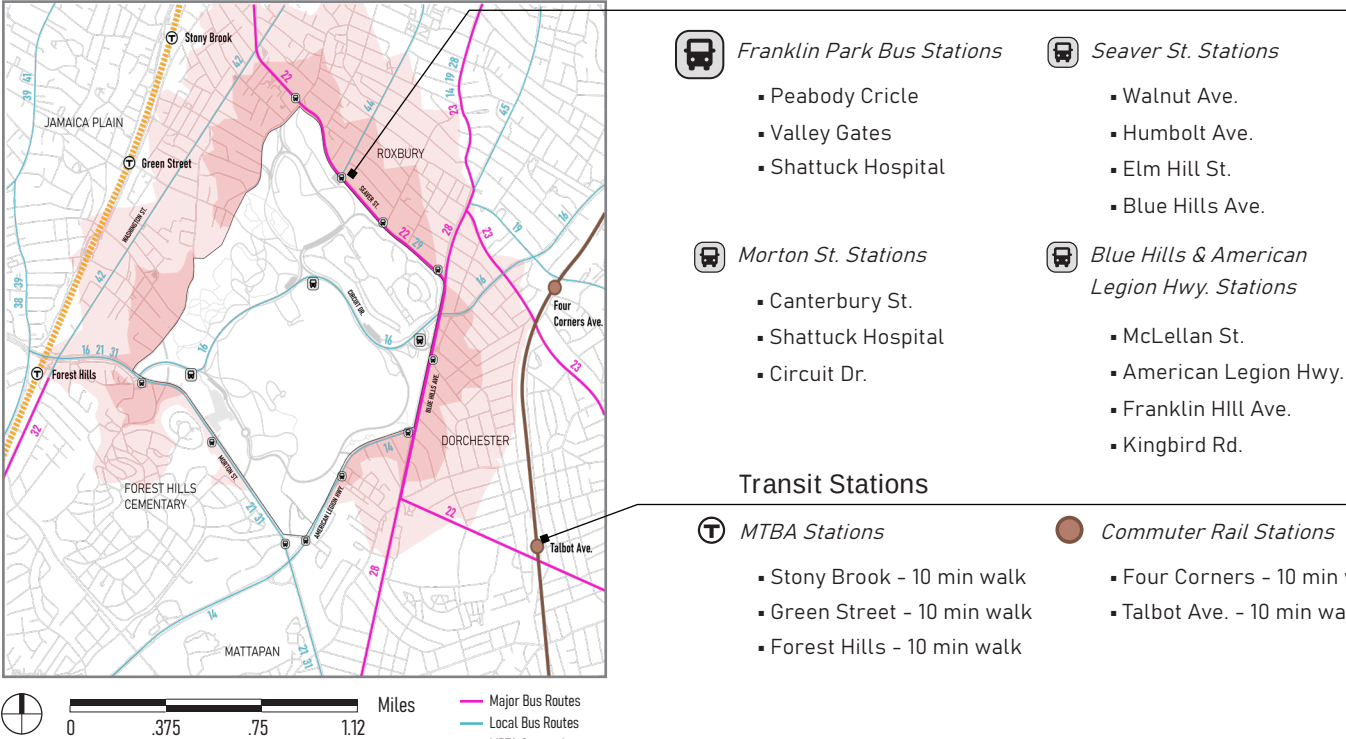


Figure 5.5: Public Transportation Access | By Author; Data Sourced from Franklin Park Action Plan 2022

As seen on the diagram, Franklin Park is very accessible when traveling on public transportation. The two public infrastructures that service the park are various bus lines and two transit lines. If traveling by bus, there are many bus stops along the park's edges on four of

the five edges. However, line 16 travels on Circuit Drive and offers three bus stops within the park boundary. If traveling by train or "T" on the orange line, three stations are within a 10-minute walk of the park; the same goes for the commuter rail.

Boston Bikeshare Stations



Figure 5.6: Franklin Park Boston Blue Bike Stations | By Author; Data Sourced from BLUEBikes 2021

The city of Boston offers a bikeshare program known as Blue Bikes Boston. The bikeshare program is a city-wide initiative that operates across ten municipalities within the metro. At Franklin Park, four stations are accessible to park users. However, this service is not free.

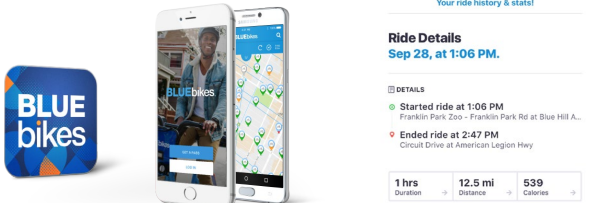


Figure 5.6.1: Boston Blue Bike App | From BLUEBikes

Figure 5.6.2: Personal Ride data | By Author



Figure 5.6.3: Boston Blue Bikes Station along American Legion Hwy. | By Author

Multiple passes or hourly rates are available at an affordable price for commuting or leisure riding. Pictured above is one of the stations along American Legion Highway where the Blue Bikes are docked with a pay station to unlock and begin using.

Private Areas

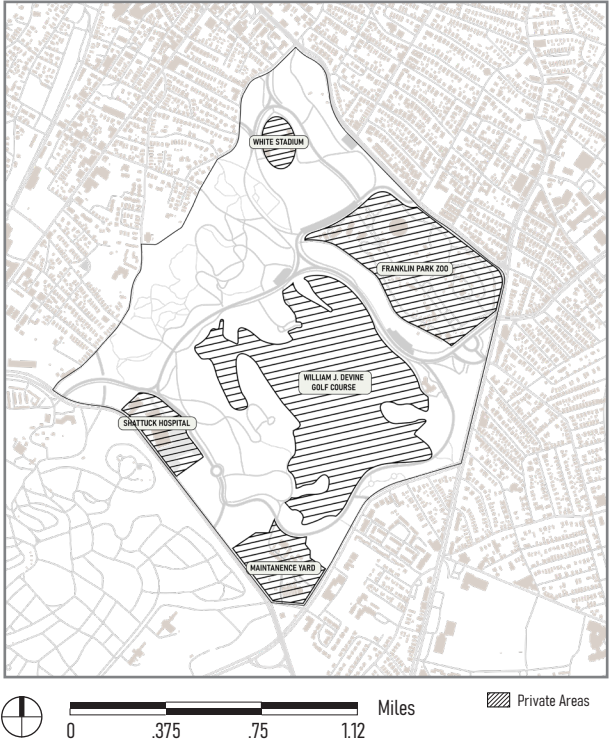


Figure 5.7: Internal Private Areas | By Author, Data Sourced from Franklin Park Action Plan 2022

While Franklin Park is a public park, multiple private entities operate there, taking up park acreage. A total of five areas are private or are only open for specific periods. The private areas are White Stadium, Franklin Park Zoo, William J. Devine Golf Course, Shattuck Hospital, and the



Figure 5.7.1: White Stadium | By Author



Figure 5.7.3: Golf Course | By Author



Figure 5.7.5: Maintenance Yard | By Author



Figure 5.7.2: Franklin Park Zoo | By Author



Figure 5.7.4: Shattuck Hospital | By Author

Maintenance Yard. Therefore, the mentioned areas will not be within the scope of the park circulation system. It is important to note, with these being private spaces, multiple barriers have been put in place, like fences, walls, and gates, which fragmented the intended unobstructed views.

Internal Programming

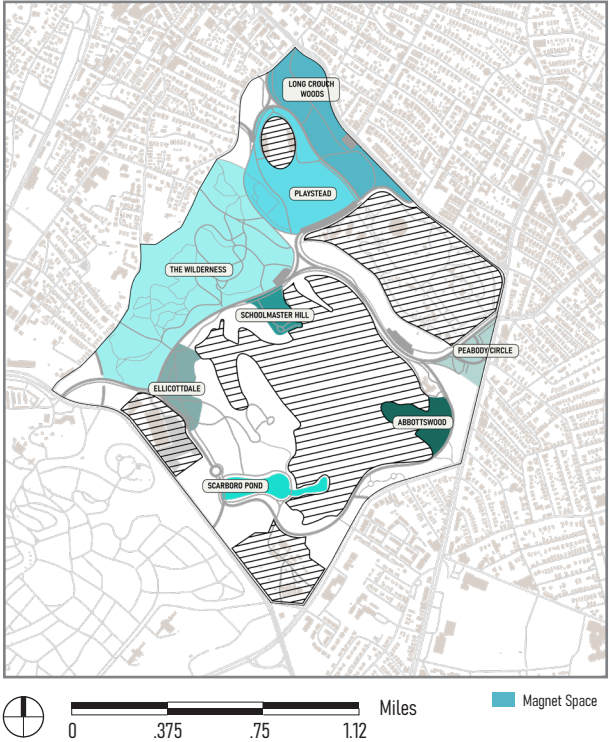


Figure 5.8: Internal Programming | By Author, Data Sourced from Franklin Park Action Plan 2022

Private areas fragment the park, however, multiple magnet programs remain. The west contains the Long Crouch Woods, Playstead, Schoolmaster Hill, Ellicottdale, and the Wilderness. These are active spaces have sports courts and many walking trails for passive



Figure 5.8.1: Long Crouch Woods | By Author



Figure 5.8.3: The Wilderness | By Author



Figure 5.8.5: Ellicottdale | By Author



Figure 5.8.7: Abbottswood | By Author



Figure 5.8.2: The Playstead | By Author



Figure 5.8.4: Schoolmaster Hill | By Author



Figure 5.8.6: Scarborough Pond | By Author



Figure 5.8.8: Peabody Circle | By Author

enjoyment. The east contains Scarboro Pond, Circuit Loop, and Peabody Circle. These serve as circulation spaces, influencing the way users experience the park. Circuit Loop takes users around the golf course offering the stunning views and Peabody Circle is the main entry to the park.

Topography

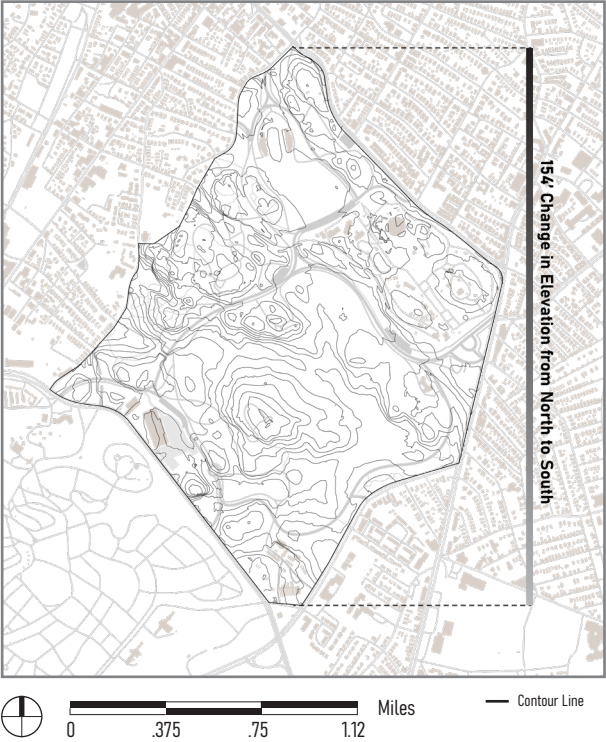


Figure 5.9: Topography Map | By Author; Data Sourced from Franklin Park Action Plan 2022

A part of Franklin Park’s identity comes from its unique topography. The park intersects a drumlin field, a knobby hill created by glacial sediment deposited 570 million years ago (Boston Parks & Recreation Department 2022). Olmsted structured the park’s design around this unique topography



Figure 5.9.1: Steep Puddingstone Cliffs | By Payne, C.



Figure 5.9.2: Rolling Hills of the Golf Course | By Author



Figure 5.9.3: Winding Path along Topography | By Author

allowing users to see and interact with these iconic features of the park to this day. Across the park is a 154’ drop, with the north being the highest and dropping moving southward.

Vegetation

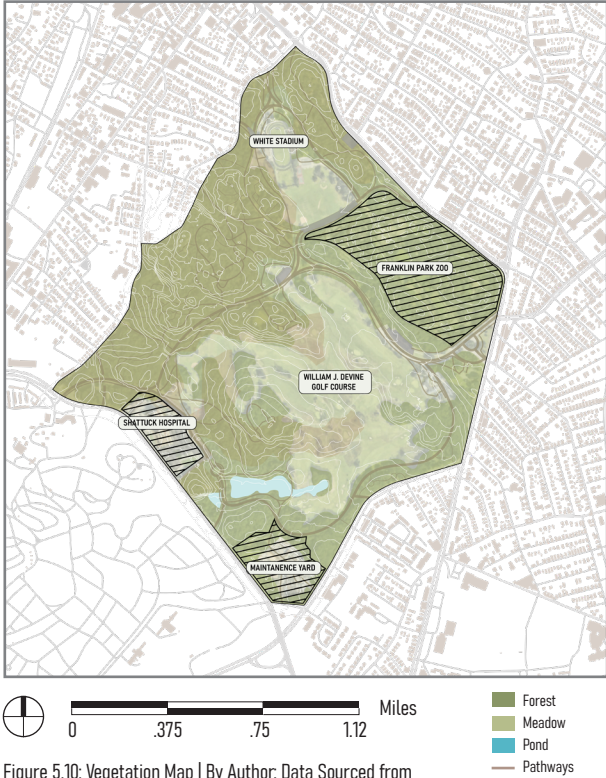


Figure 5.10: Vegetation Map | By Author; Data Sourced from Franklin Park Action Plan 2022

Franklin Park offers various types of vegetation types throughout the park. While many individual plant species are present, there are only three main vegetation types. Franklin Park has a significant presence of mature trees that comprises a majority of the park surrounding the

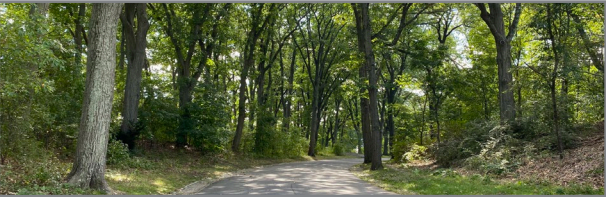


Figure 5.10.1: Mature Canopy | By Author



Figure 5.10.2: Meadow Planting | By Author



Figure 5.10.3: Manicured Lawn | By Author

golf course, Ellicottdale, and Playstead. In these spaces, the primary vegetation type is turn grass enabling active programs like sporting events. Lastly, meadows are intermixed along the edges of the meadow to create a buffer between itself and the woodlands.

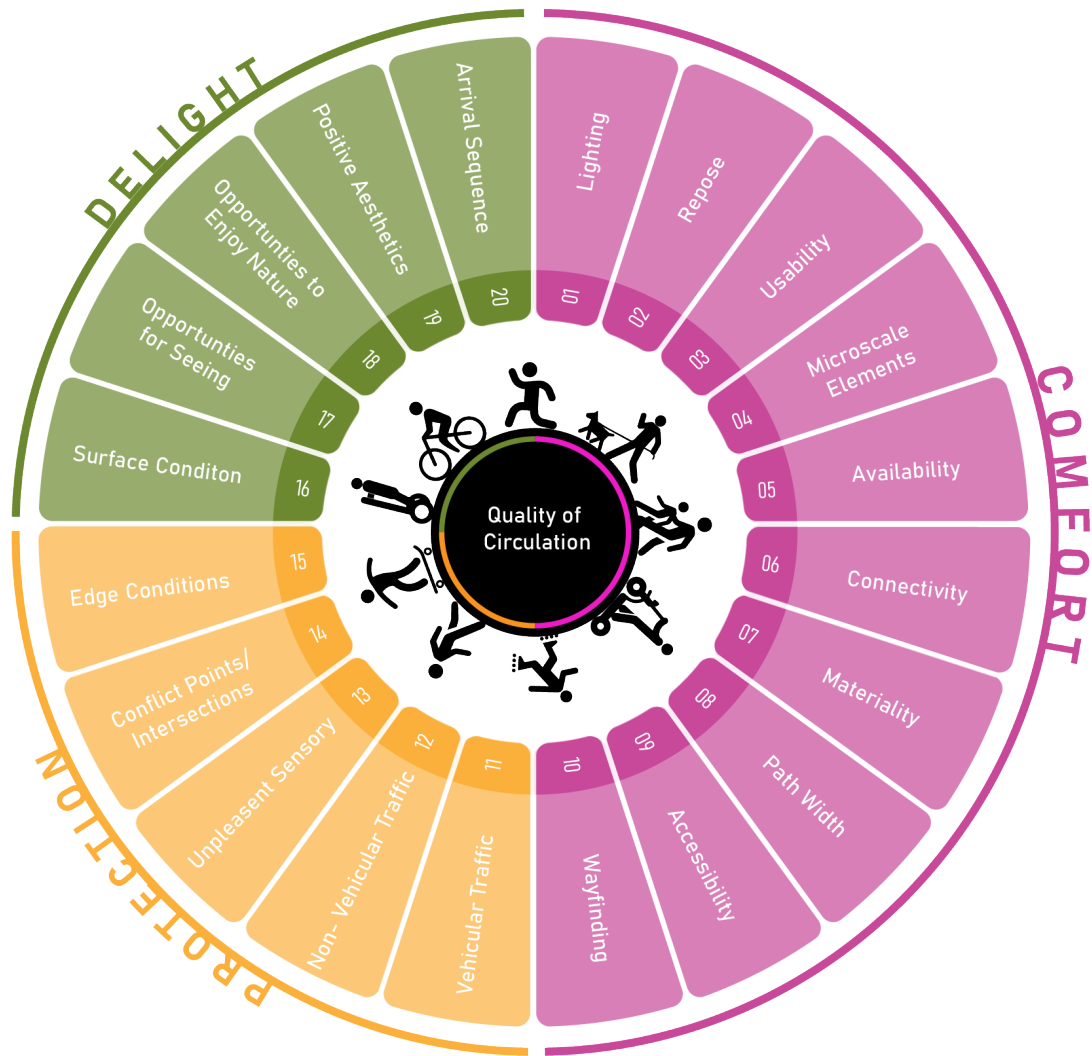


Figure 5.11: Quality of Circulation for Non-Vehicular Users Framework | By Author

Site Analysis - Framework Application

The documentation of fundamental contextual and internal features allowed for a better understanding of design moves and strategies used within the current circulation system of Franklin Park. Following the contextual analysis was the application of the Quality of Circulation for Non-Vehicular Users framework. The framework was used to determine how the circulation system could be improved for the non-vehicular user groups. Therefore, each criterion identified within the framework was used to analyze the circulation system and provide a set of findings and opportunities that informed the projective design. The following criterion were analyzed within each respective category; comfort, protection, and delight.

Comfort

- Lighting
- Repose
- Usability
- Microscale Elements
- Availability

- Connectivity
- Materiality
- Path Width
- Accessibility
- Wayfinding

Protection

- Vehicular Traffic
- Non-Vehicular Traffic
- Unpleasant Sensory
- Conflict Points/Intersections
- Edge Conditions

Delight

- Surface Condition
- Opportunities for Seeing
- Opportunities to Enjoy Nature
- Positive Aesthetics
- Arrival Sequence

Lighting

- Are there lighting features along pathways and corridors? Do they provide adequate lighting during evening and night hours to create a safe environment? Are they adequately distanced? What types of lighting features service the circulation system?

Findings:

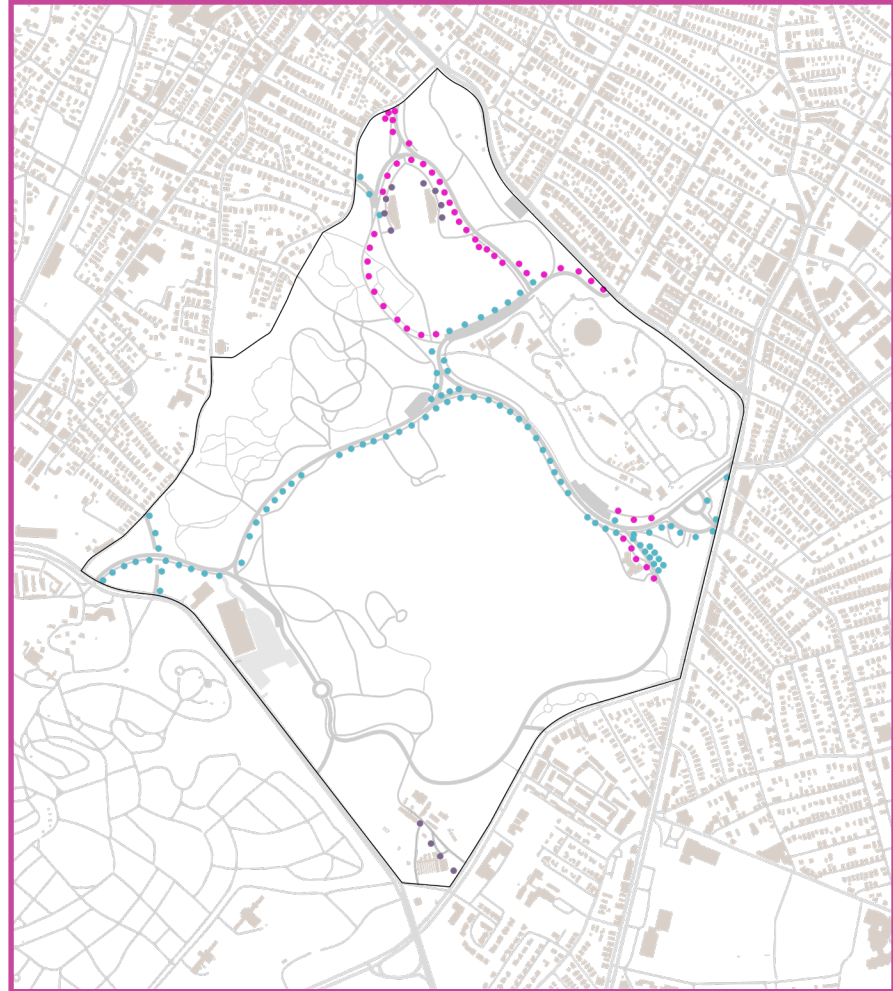
- There is a lack of lighting service along pathways in major programming areas such as the wilderness, ellicottdale and circuit loop
- Lighting along circuit drive is inconsistent at times creating large stretches of darkness
- There is no cohesive aesthetic between lighting fixtures
- 40% of survey respondents listed more lighting fixtures indicating there could be a feeling of unsafe environment at night

Opportunities:

- Provide better electrical service like lighting to major programming areas such as the Wilderness, Circuit Loop and Ellicottdale. By providing service to these areas can enable use of these areas during the evening and night hours
- Implement a lighting system that creates a cohesive aesthetic across all service types

Note: finding from the Franklin Park Action Plan

COMFORT



- Pedestrian Lighting
- Vehicular Lighting
- Service Lighting

Figure 5.12: Existing Lighting Fixtures | By Author



Figure 5.12.1: Existing Pedestrian Lighting | By Author

- The majority of the pedestrian lighting in the circulation system only services the Playstead Loop and other small portions. The pedestrian lighting does not have an architectural aesthetic; it is attached to electrical poles adjacent to the path.



Figure 5.12.2: Existing Vehicular Lighting | By Author

- The most common lighting fixture is vehicular lighting, as it services all vehicular corridors across the circulation system. The fixture itself is intentionally designed to match the historical aesthetic of Franklin Park.



Figure 5.12.3: Existing Service Lighting | By Author

- Service lighting is the least common as it is only used in or around private areas such as White Stadium and the Maintenance Yard. These fixtures do not fit into the surrounding context and typically stick out.

 Repose

→ *Where are seating elements located along the circulation system? Are there spaces adjacent to pathways that allow a user to pull off and rest or linger? Are elements for repose adequately spaced throughout the circulation system?*

Findings:

- There are few spaces adjacent to the circulation system that allowed users to pull off and rest
- Seating elements were inconsistently distributed throughout the circulation system whereas they are clustered in areas around magnet programs
- In Circuit Loop, the longest stretch without seating is over a mile long and would take the average person about 20 minutes of continuous walking
- There is an inconsistent aesthetic in seating types as it varies across the circulation system

Opportunities:

- Provide benches along primary pathways throughout the circulation system to make comfortable resting places for users
- Create a cohesive aesthetic of seating opportunities along the circulation system
- Implement “pull off” spaces adjacent to primary pathways and benches to allow for users to linger or rest. These spaces should be strategically placed for significant view points or distance.

COMFORT

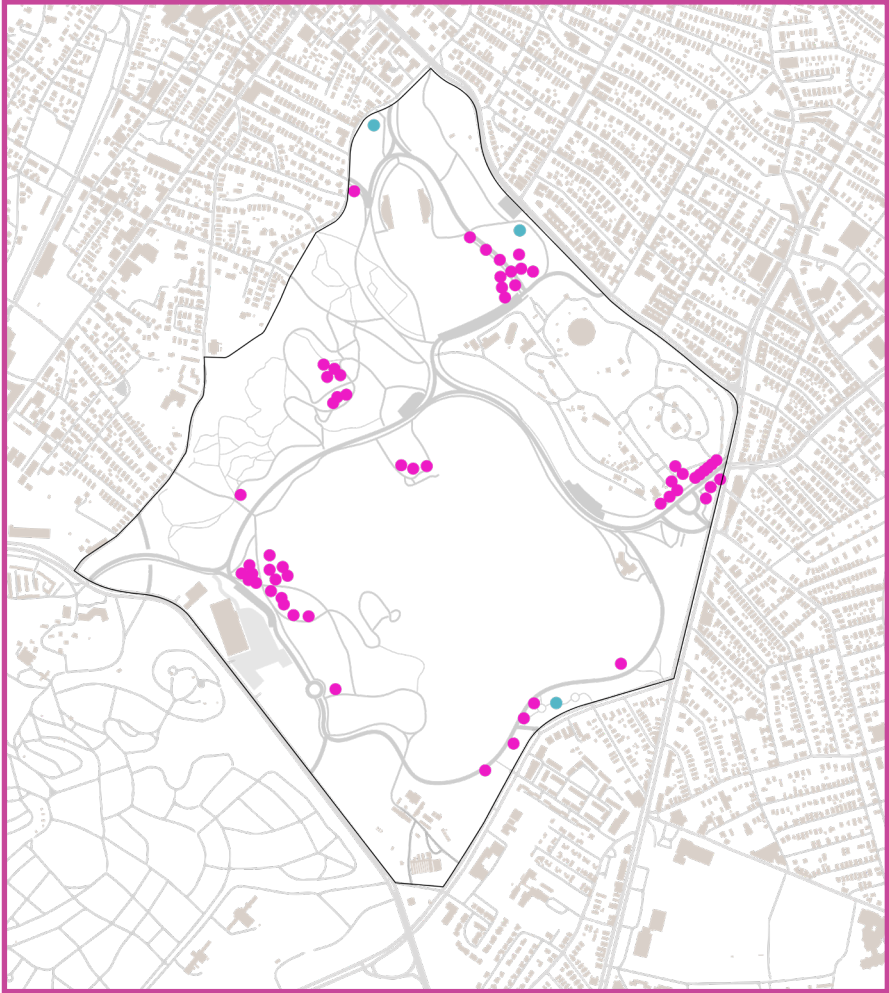


Figure 5.13: Existing Opportunities for Repose | By Author

Adjacent Spaces **Seating Opportunities**



Figure 5.13.1: Existing Seating Options | All Images By Author



Figure 5.13.2: Existing Playgrounds | All Images By Author

→ Seating available along the circulation system varies. There are two different styles benches and picnic tables. However, there is no cohesive aesthetic across seating types. Opportunities for seating are mostly accessible from the pathways as they have additional paving connected to the pathway.

→ Along the circulation system within the park, there are few secondary spaces for circulation users to pull off to linger or rest. The only areas available are various playgrounds placed around the park.

Usability

→ How is the current circulation system being used? What special programs use the circulation system? When non-vehicular users use the system, where do they go?

Findings:

- Due to the size of the park, patterns showed that park user's primarily used amenities that were in the proximity the entrance that they used
- The most commonly used spaces are in the southern portion of the park noting that Circuit Loop is used the most in the circulation system
- To the north, the Playstead is another commonly used space noting that the Playstead Loop will be used heavily like Circuit Loop
- The Wilderness is the least used space decreasing the importance of that part of the circulation system
- Most entrances to the park dump users onto the primary loops then can break off into magnet spaces
- There are various special events that use the circulation system, which cross country being the most frequent and city annual events

Opportunities:

- Established continuous loops could improve the usability for larger events like cross country and the Turkey Trot 5K

Note: finding from the Franklin Park Action Plan

COMFORT

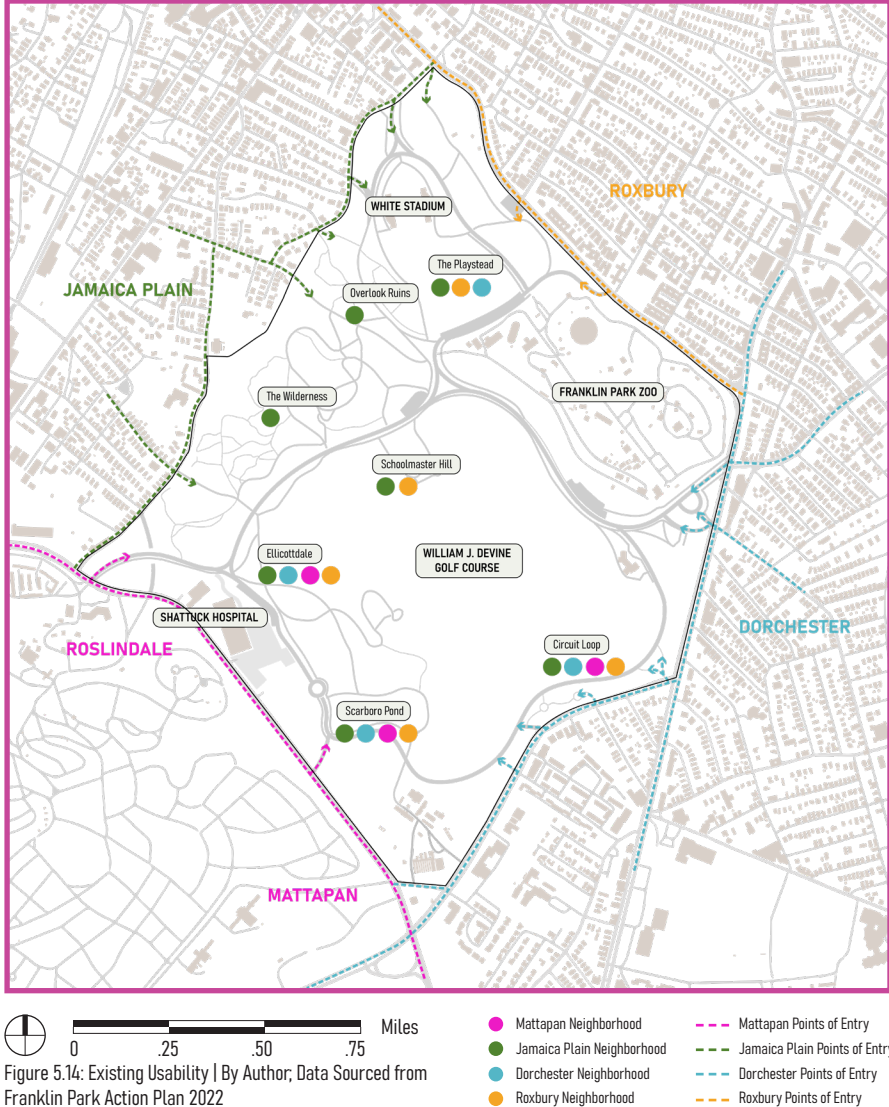


Figure 5.14: Existing Usability | By Author; Data Sourced from Franklin Park Action Plan 2022

Cross Country Turkey Trot Kite & Bike Festival



Figure 5.14.1: Kite & Bike Festival | By Franklin Park Coalition



Figure 5.14.2: Turkey Trot | By Franklin Park Coalition



Figure 5.14.3: Cross Country | By Unsplash User: Leah Hetteberg

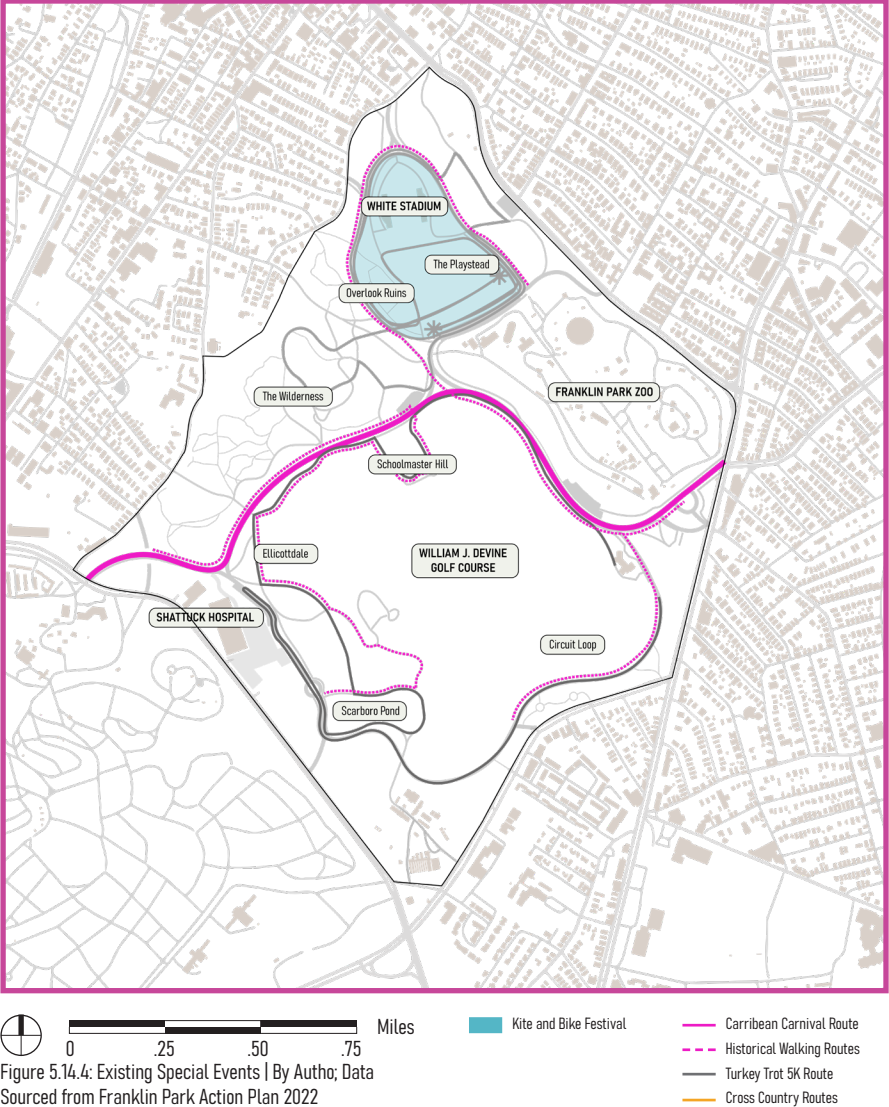


Figure 5.14.4: Existing Special Events | By Autho; Data Sourced from Franklin Park Action Plan 2022

 Mircoscale Elements

→ *Are the necessities adjacent to the circulation system such as bathrooms facilities, trash cans, drinking fountains, and bike racks? Is there an adequate amount of these necessities based on everyday usage? Are they easily accessible?*

Findings:

- There is a primary lacking of public restrooms throughout the entire site, the only available one is within the clubhouse and it is believed to be regulated for only golfers
- There is a lack of bike comfort elements such as bike racks or bike repair stations along the circulation system
- The amount of trash facilities is unessecary and placed randomly either by itself or next to seating

Opportunities:

- Locate necessities like restrooms, water fountains, and trash cans along paths primarily within magnet destinations to increase park use and visitation
- Hence biking is a popular way people arrive to the park, providing bike racks and repair stations along the circulation system is necessary

COMFORT

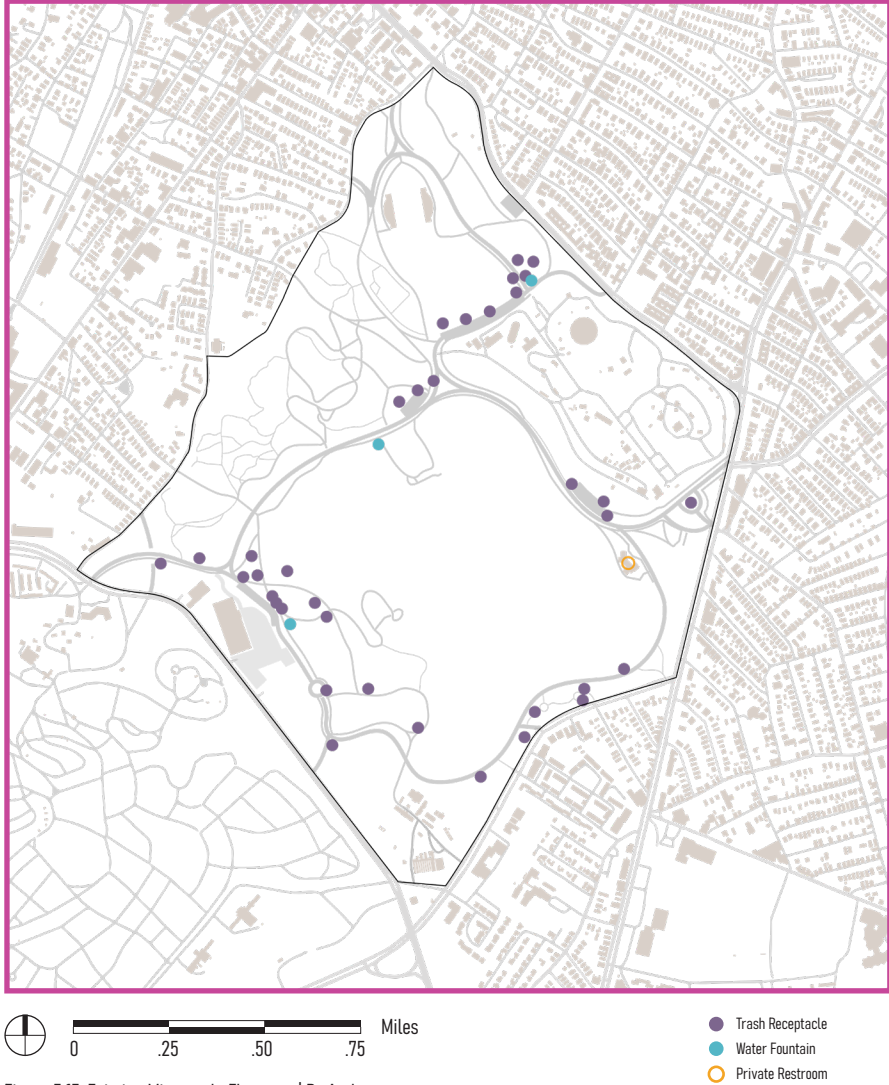


Figure 5.15: Existing Microscale Elements | By Author



Figure 5.15.1: Country Club Restroom | By Author



Figure 5.15.2: Existing Trash Can | By Author



Figure 5.15.3: Existing Water Fountain | By Author

- A singular restroom is available to circulation users which is located within the clubhouse of the William J. Devine Golf Course. This restroom, as referenced earlier, is believed to be reserved for only golfers, making the case for there is no public restrooms for park users.
- A plethora of trash cans are scattered across the park and along the circulation system. While many facilities are good, they do not seem intentionally placed, scatterd rather. Trash facilities are not anything special, they are metal bins open to the air releasing unplesant smells to users passing by.
- A total of three water fountains are placed around the circulation system. These water fountains are all functional based from on-site testing. The placement of the facilites makes them less acessible as they are off primary paths in shaded areas making them hard to find.

Availability

→ *What infrastructure is available to both vehicular and non-vehicular users? Is the circulation system overly complicated or too simplistic? Are there any redundancies within the system?*

Findings:

- For pedestrian infrastructure, there are redundant pathways adjacent to larger pathways, particularly in the playstead loop
- The wilderness circulation system in confusing with a plethora of pathways with no clear direction or primary loop
- For bike infrastructure, the only available within the circulation system is on Circuit Drive and there needs to be more dedicated infrastructure for them as biking is one of the primary ways people enter the park

Opportunities:

- Simplify the circulation system to reduce the amount of redundant pathways and create primary loops within the larger and mini magnets
- Expand bike infrastructure into other parts of the circulation system such as the primary loops

COMFORT

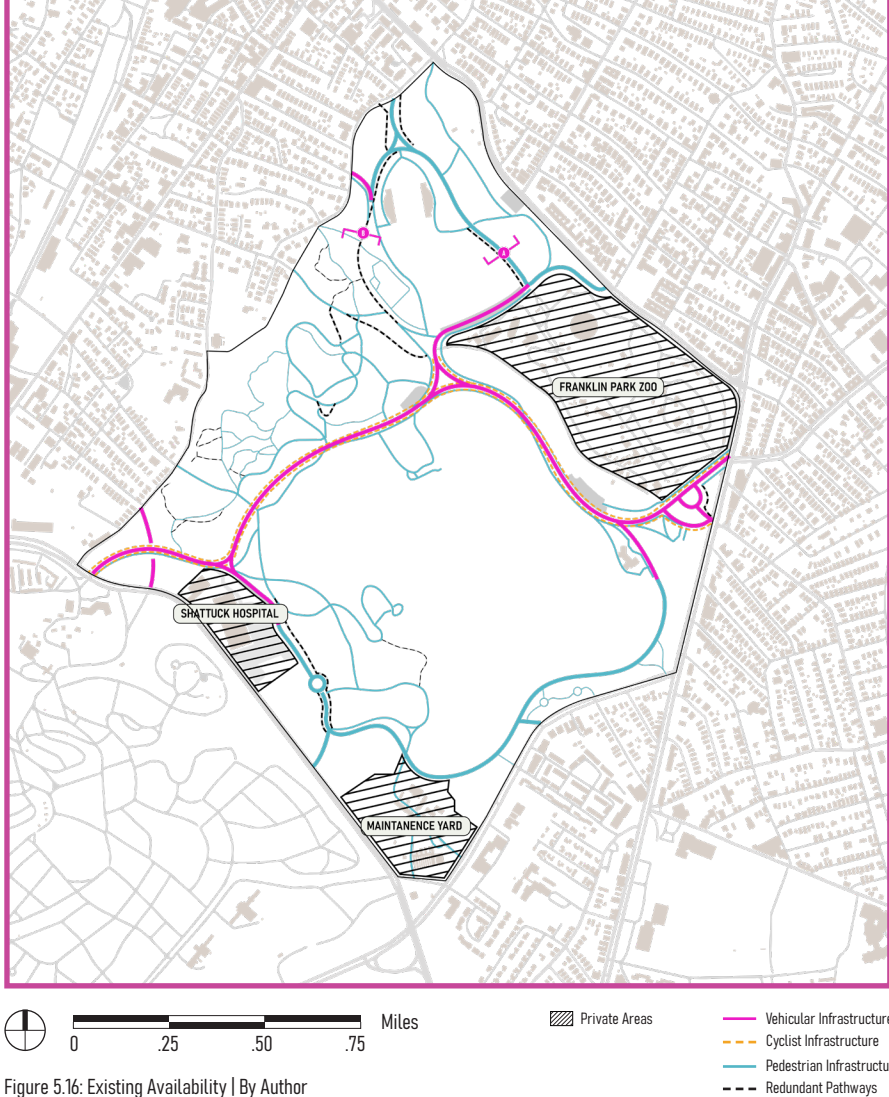


Figure 5.16: Existing Availability | By Author

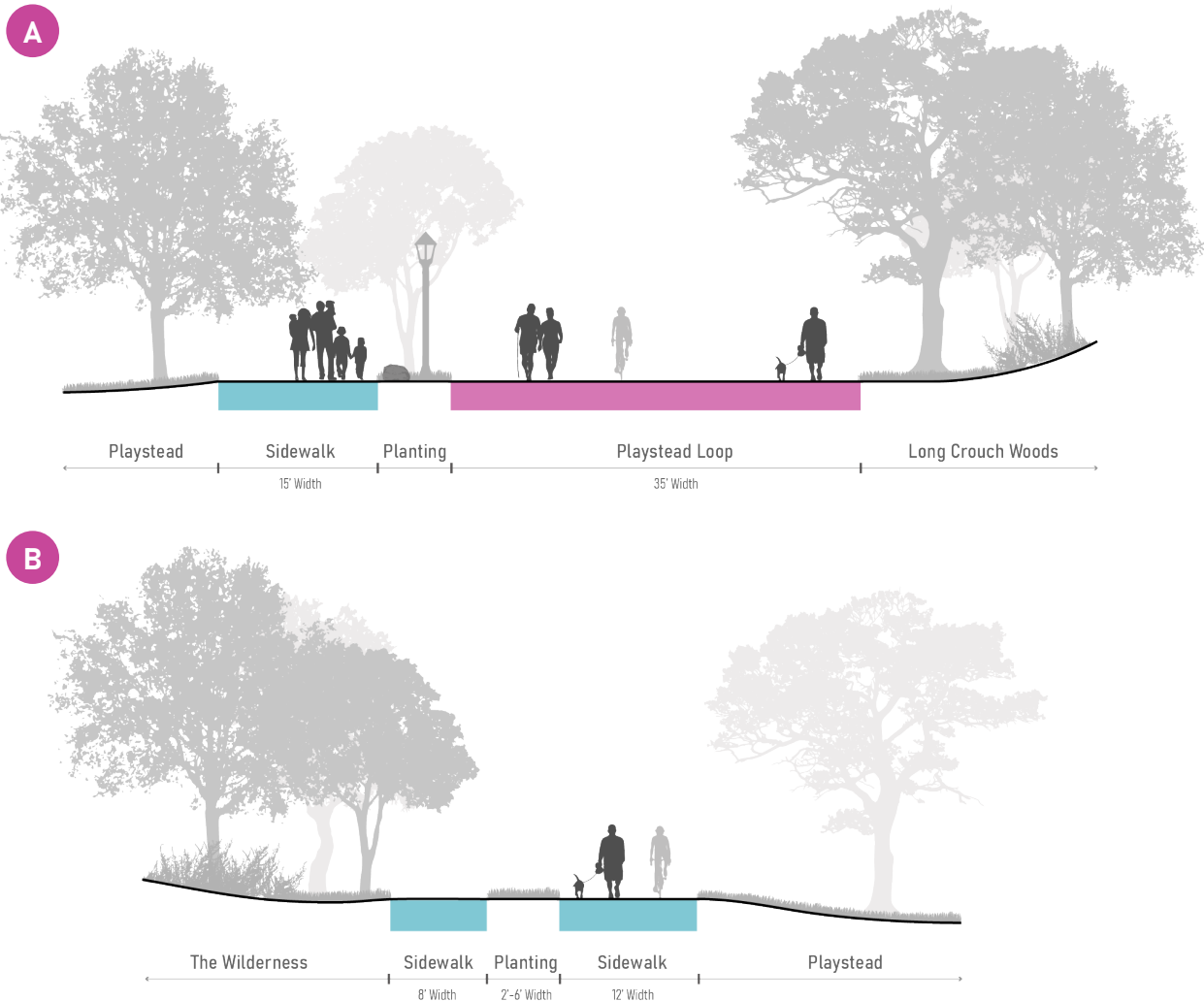


Figure 5.16.1: Redundant Pathway Sections | By Author

Connectivity

→ Are there contextual connections that may effect the internal circulation of the park? Does the primary circulation system allow for connections to internal programs? At vehicular thresholds, are there adequate crossings for non-vehicular users?

Findings:

- Circuit Drive is a major vehicular connection that fragments the park into two separate parts with lack of connections across circuit drive
- Circuit and Playstead loop are bisected by circuit drive and other vehicular connections causing the loops to be physically and aesthetically disconnected
- The circulation system does provides easy access to magnet programs

Opportunities:

- Reconfigure vehicular circulation through the park and restore continuous multi-modal loops throughout the park
- Improving pedestrian connections across and along the road will enhance the users circulation and safety
- To further connect the primary circulation to magnet destinations, link them through the creation of secondary walking loops around the smaller magnets.

Note: finding from the Franklin Park Action Plan

COMFORT

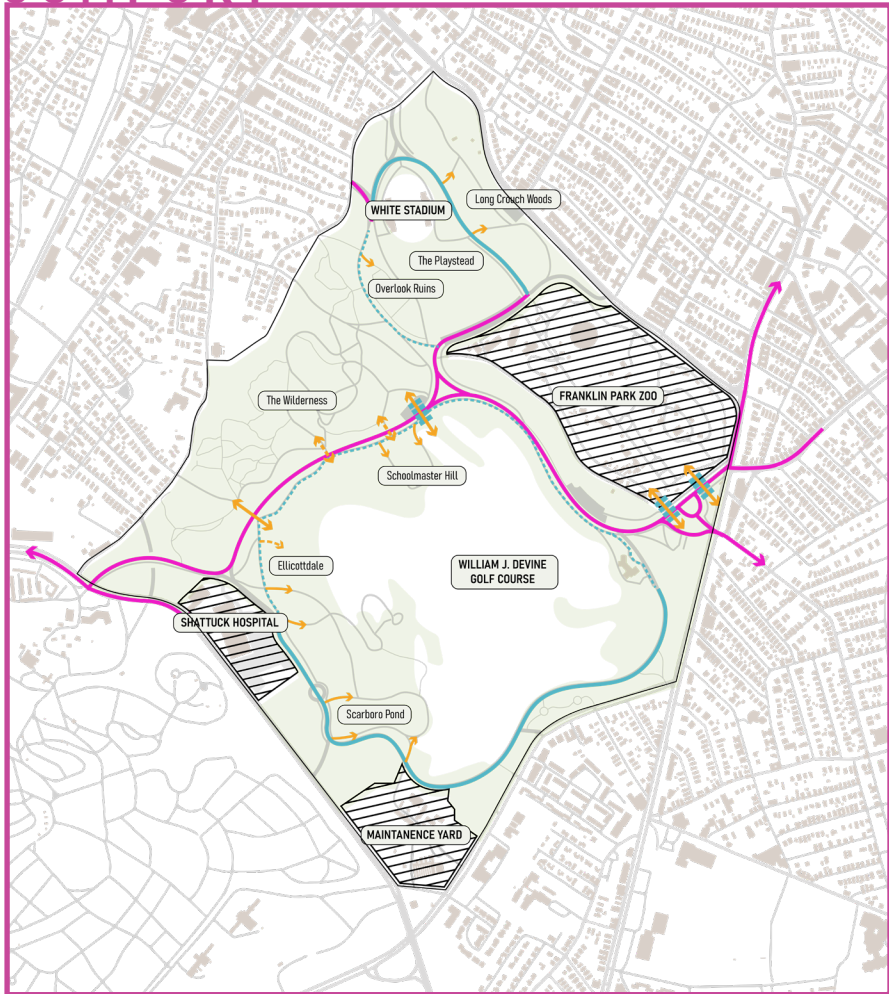


Figure x.xx: Existing Connectivity | By Author

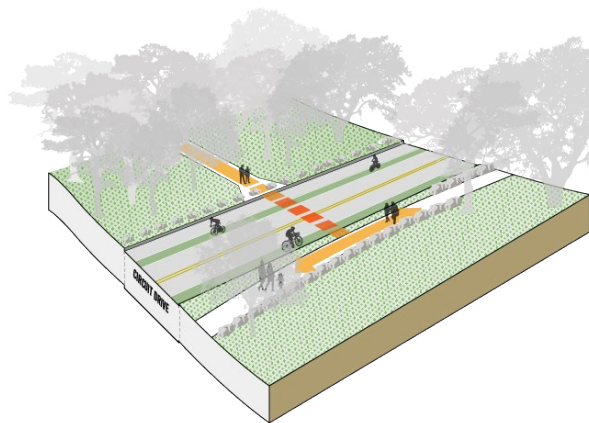


Figure 5.17.1: Existing Connection Typologies - No Crosswalk | By Author

- Above is the identified typology derived from the current street crossings along Circuit Drive within the park's circulation system. In this typology, there is a lack of cross street recognition meaning on side identifies a street crossing with curb ramp where the other is blocked with stone bollards and no curb ramp or on street stripping denoting a pedestrian crossing.

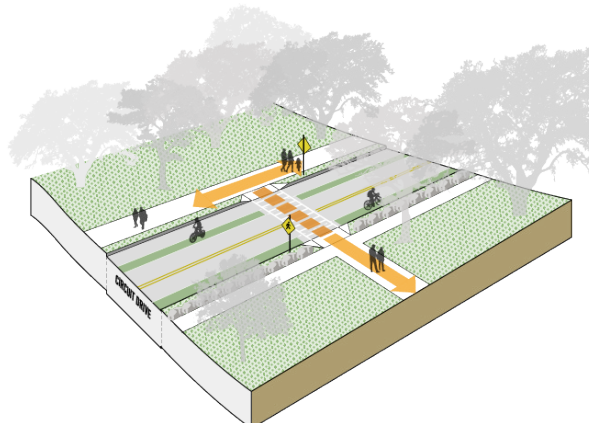


Figure 5.17.2: Existing Connection Typologies - Crosswalk | By Author

- Above is the secondary typology identified within the park's circulation system. This crossing is better than the previous with sidewalk connections, on-street stripping, and warning signs. However, it could still be improved with a reconfiguration of Circuit Drive or pairing with traffic calming interventions.

Materiality

→ *What is the paving material selection across the circulation system? Does the paving material vary or stay cohesive throughout the circulation system? Is the material selection appropriate for the intended function?*

Findings:

- There is a lot of variety in paving materials used within the circulation system, especially within width types which can create a wayfinding confusion
- Although a variety of materials are used within the circulation system, each material is an appropriate choice for usage classification

Opportunities:

- The circulation system would benefit from material consistency to create clear connections

COMFORT

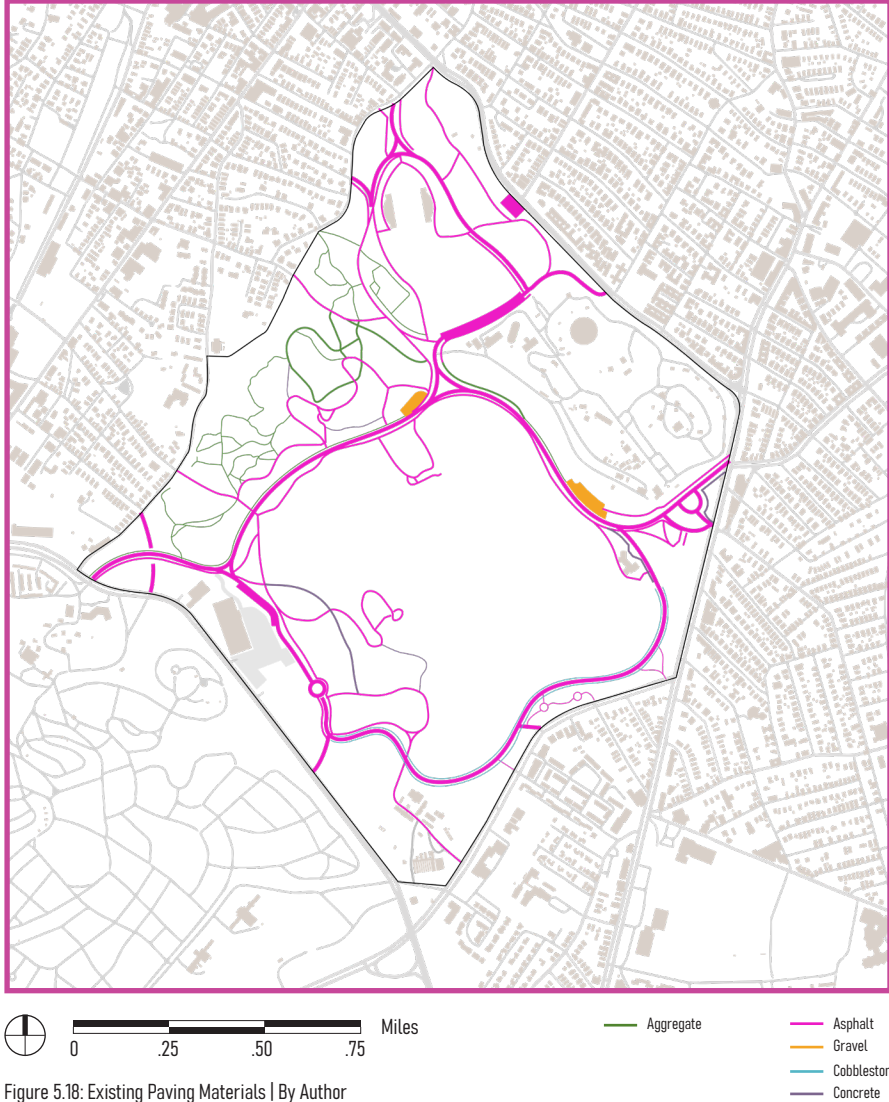
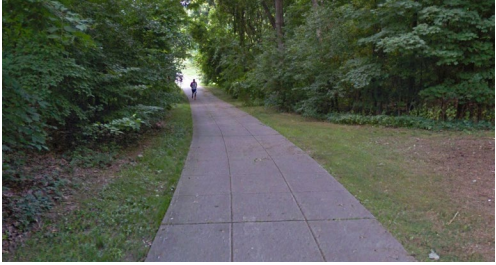


Figure 5.18: Existing Paving Materials | By Author



Asphalt and Cobblestone Accent

Asphalt is the primary material used in the circulation system. It is reserved for the larger multi-use paths and smaller primary pathways. Above, is Circuit Loop which is unique as it features cobblestone flanking each side.



Concrete

Concrete is the least common material used within the circulation system. Concrete has a unique patterning contrary of the asphalt. While this material is selectively used, it does not feel like it is used intentionally.



Gravel

Gravel is the secondary vehicular paving material used for vehicular circulation. The material is primarily used in additional parking lots for the zoo.



Unpaved - Aggregate

Aggregate is the commonly used material within the Wilderness. This paving material is mostly reserved for smaller pathways like trails in the Wilderness and foot paths adjacent to Circuit Drive.

Figure 5.18.1: Current Paving Materials | All images taken By Author

Path Width

→ *What is the paving material selection across the circulation system? Does the paving material vary or stay cohesive throughout the circulation system? Is the material selection appropriate for the intended function?*

Findings:

- Large vehicular-scale or multi-modal pathways lack definition between uses. The pavement is wide and generous and are often flanked by redundant paths furthering the confusing circulation
- The primary pedestrian pathways are dimensioned appropriately as they can accommodate larger groups of pedestrian traffic
- Secondary paths allowed for a pair to use the path
- The trails are the smallest paths used and are prevalent throughout the woodlands creating a wayfinding confusion. This type can accommodate small groups or individual users.
- With the introduction of circuit drive, it has pinches circuit loop users onto a shrunken path width obscuring the main circulation route

Opportunities:

- Reinstate a hierarchy to guide circulation and aiming to restore a cohesive park experience
- Look to rescale multi-modal loops to an appropriate scale to reduce the amount of unnecessary pavement, break up with planting

COMFORT

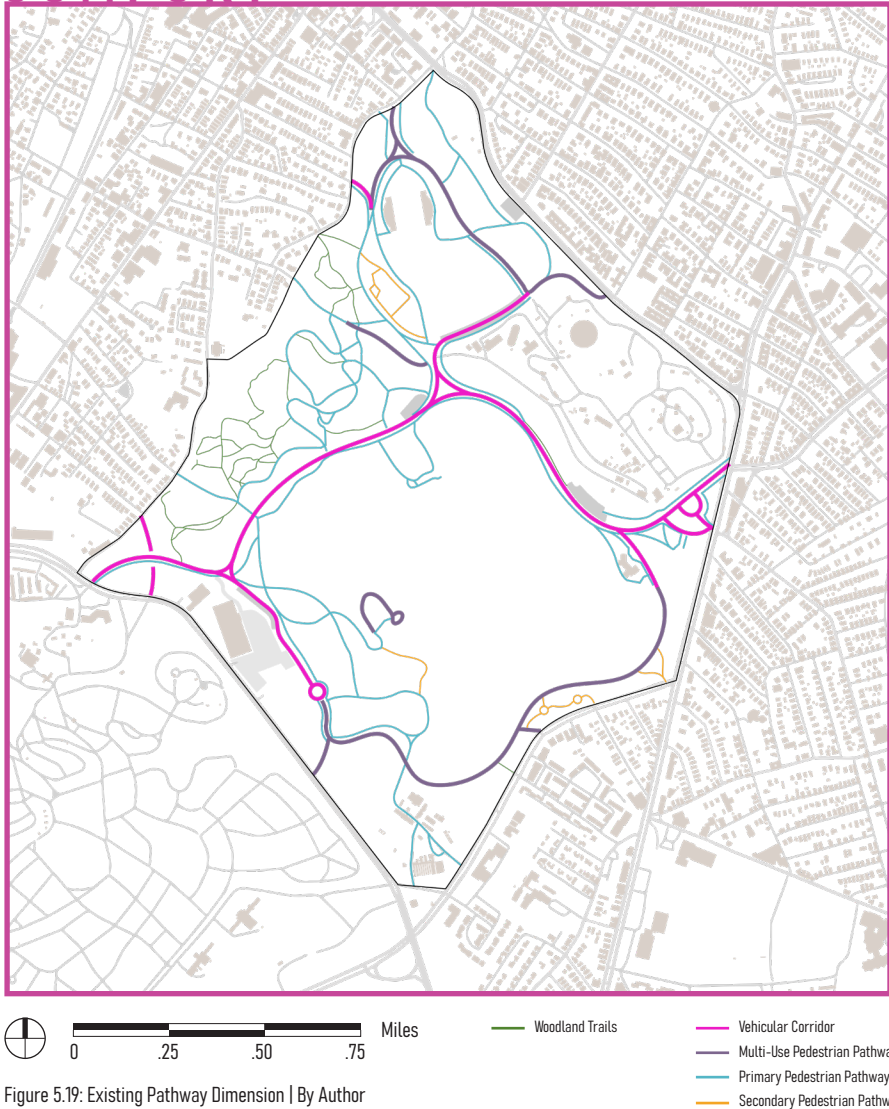


Figure 5.19.1: Existing Pathway Hierarchies | By Author

Vehicular Corridors/Multi-Use Pedestrian Paths

Large multi-use and shared pedestrian paths are widely paved pathways to provide enough space for multiple users. These are the primary pathways within the system which are both Playstead and Circuit Loops.

Primary Pedestrian Pathways

Below multi-use pathways are the primary pedestrian paths which break off the primary loops leading users into magnet spaces. These pathways can accommodate larger groups or singular walkers or joggers.

Secondary Pedestrian Pathways

Secondary pedestrian pathways are the least common which break off from primary pedestrian pathways. This classification can serve smaller groups or pairs of non-vehicular users.

Woodland Trails

Trails are prevalent in a singular area of the park being the Wilderness. These trails are typically gravel or unpaved that can accommodate a pair or singular walker.

 Accessibility

→ How is the current circulation system being accessed by various modes? Can the circulation system be easily accessed for use? Where are the entries? Are there barriers present like fences, gates, bollards, etc. within the interior park circulation?

Findings:

- Fences, walls, and gates define boundaries between use and ownership but they disrupt views and restrict access, which breaks down the larger continuous park experience
- Zoo fence is a necessary physical barrier but is a visually unattractive barrier but now interrupts views across the playstead to the golf course
- Public transportation allows for access to the site, there are three “T” stations and bus stops along Circuit Drive which bring visitors into the heart of the park
- Many park entries give the message of “stay out” rather than welcoming in due to perimeter walls, fencing, and dense vegetation

Opportunities:

- Minimize uninviting barriers, like fences, walls, and bollards, while keeping vehicles out of areas where they don't belong
- Rethink the character and aesthetic of necessary barriers aiming to improve connections to adjacent spaces
- Develop a consistent standard to pedestrian entrances aiming to maintain historic character, if needed, hide them within a soft edge

COMFORT

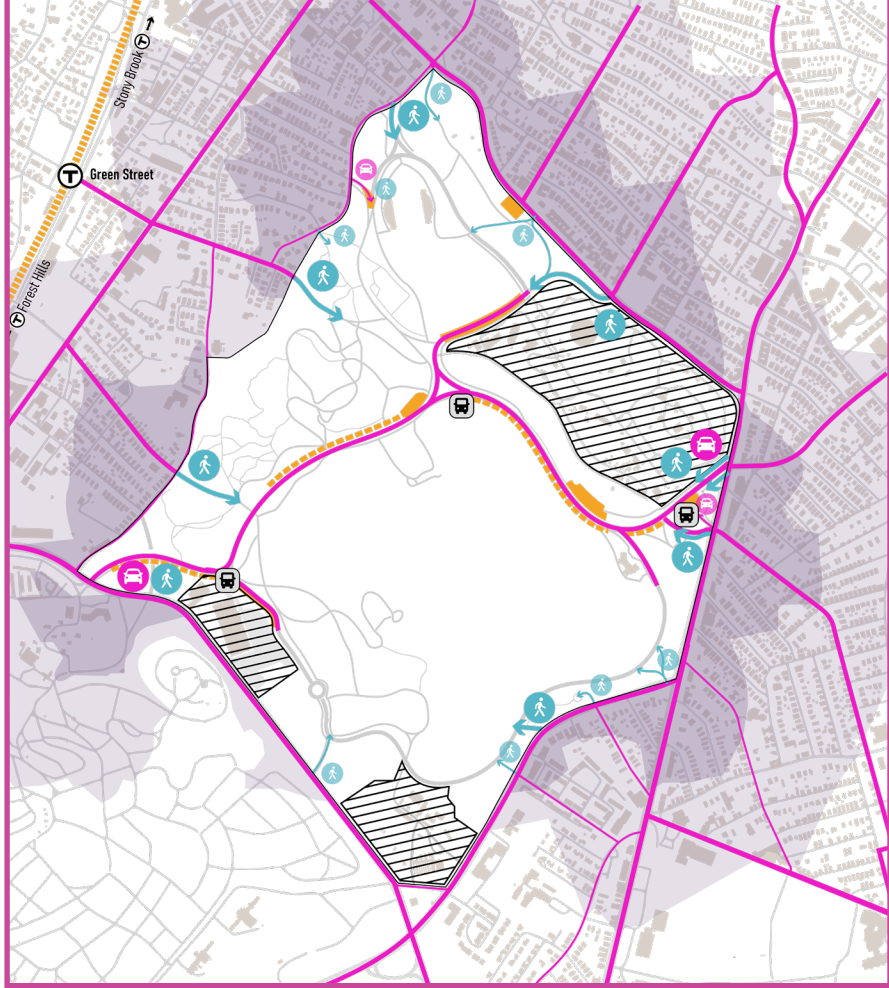


Figure 5.20: External Accessibility | By Author

Fences Puddingstone Bollards Security Gates



Figure 5.20.1: Stone Bollards and Security Gate | By Author



Figure 5.20.2: Puddingstone Bollards | By Author



Figure 5.20.3: Zoo Fence | By Author

COMFORT

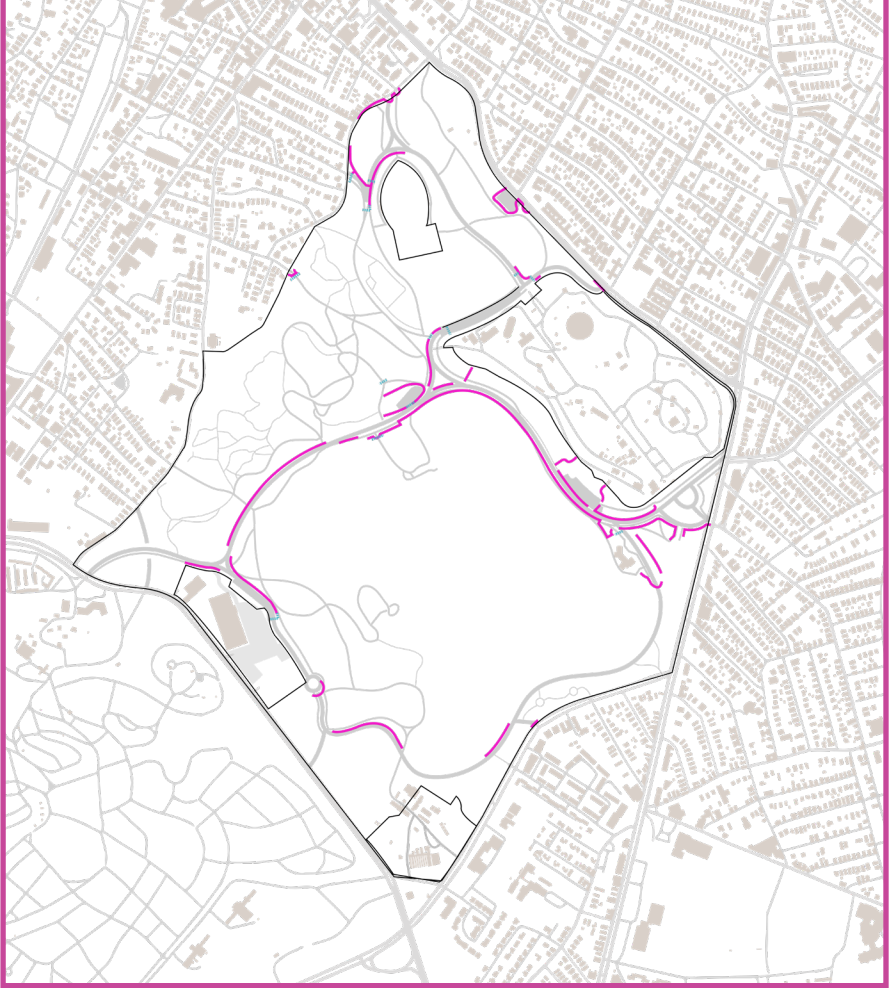


Figure 5.20.4: Existing Internal Barriers | By Author

Wayfinding

- *Where are wayfinding elements located along the circulation system? What are the signage types: directional, identification, or regulatory? Is there a cohesive aesthetic and hierarchy across the wayfinding strategy?*

Findings:

- *Park identity is unclear and mainly focused around the Franklin Park Zoo rather than the park itself*
- *Most of the signage used in the circulation is identification meaning that it denotes ones' arrival at a specific space*
- *Majority of the signage focuses on rules and regulations with little to help visitors with orientation or interpretation of historical features.*
- *There is a lack of critical wayfinding at primary entrances and intersections creating an unclear and confusing arrival*

Opportunities:

- *Improve signage to clarify wayfinding and communicate what the park has to offer, indicate routes to the park from public transit*
- *Add directional signage to the current wayfinding system*
- *Announce the park entrances with recognizable signage thats scaled appropriately for those arriving by car, foot, or bike*

Note: finding from the Franklin Park Action Plan

COMFORT

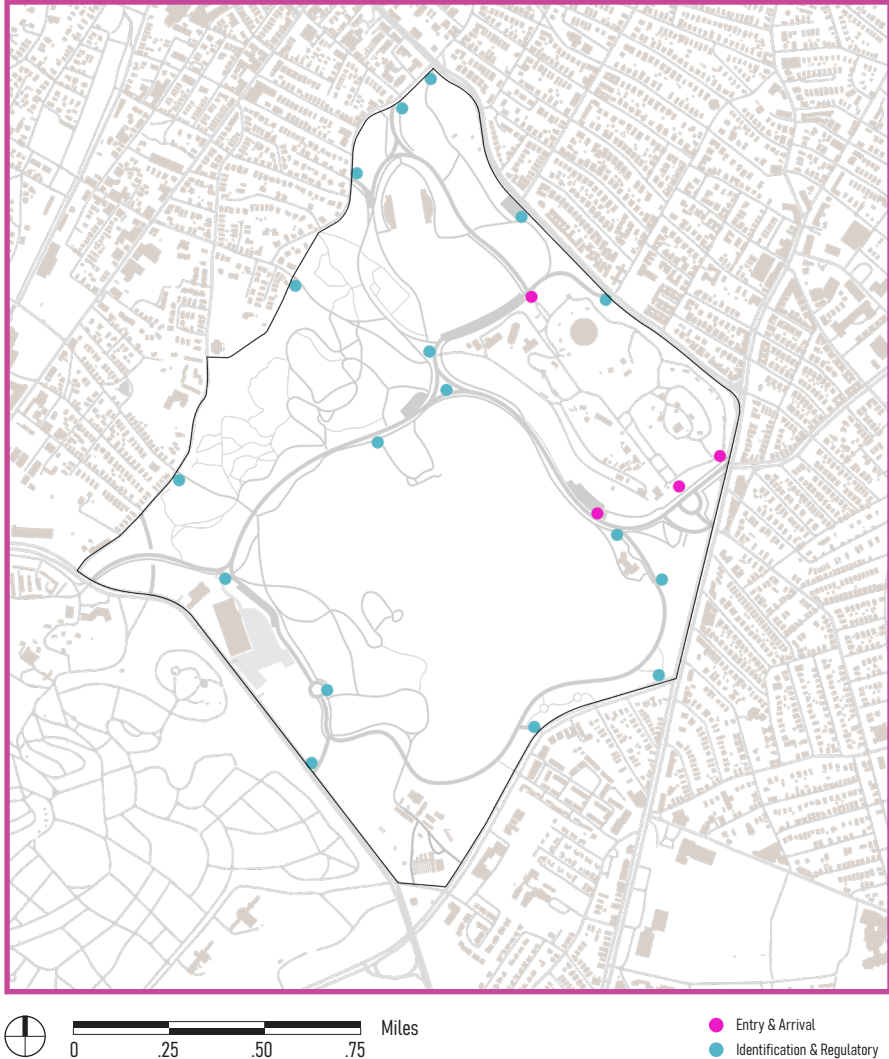


Figure 5.21: Existing Wayfinding | By Author



Figure 5.21.1: Zoo Signage | By Author

- The primary signage in the park in for the Franklin Park Zoo as previously mentioned. With zoo signage being the primary signage, it creates a lack in park identity and sense of arrival into the park. This signage is located on park edges and along primary circulation routes like Circuit Drive.



Figure 5.21.2: Internal Identification Signage | By Author

- Within the park, the secondary signage type is identification. These signs are placed at some of the entrances to park programs letting the user know they have arrived. While the sign denotes arrival, they do not convey any information besides regulatory information rather than historical.



Figure 5.21.3: Entry Signage | By Author

- Similar to the previous sign, these signs are used at pedestrian entrances to note the arrival at the park. However, this sign is the same style as interior park signage losing hierarchy within the wayfinding system.

Vehicular Traffic

→ *What is the degree which non-vehicular users are seperated from vehicular traffic? Can one feel safe within the park without feeling the danger of getting hit? For pedestrains, what is the degree of seperation? For cyclists, how are riders protected from vehicles?*

Findings:

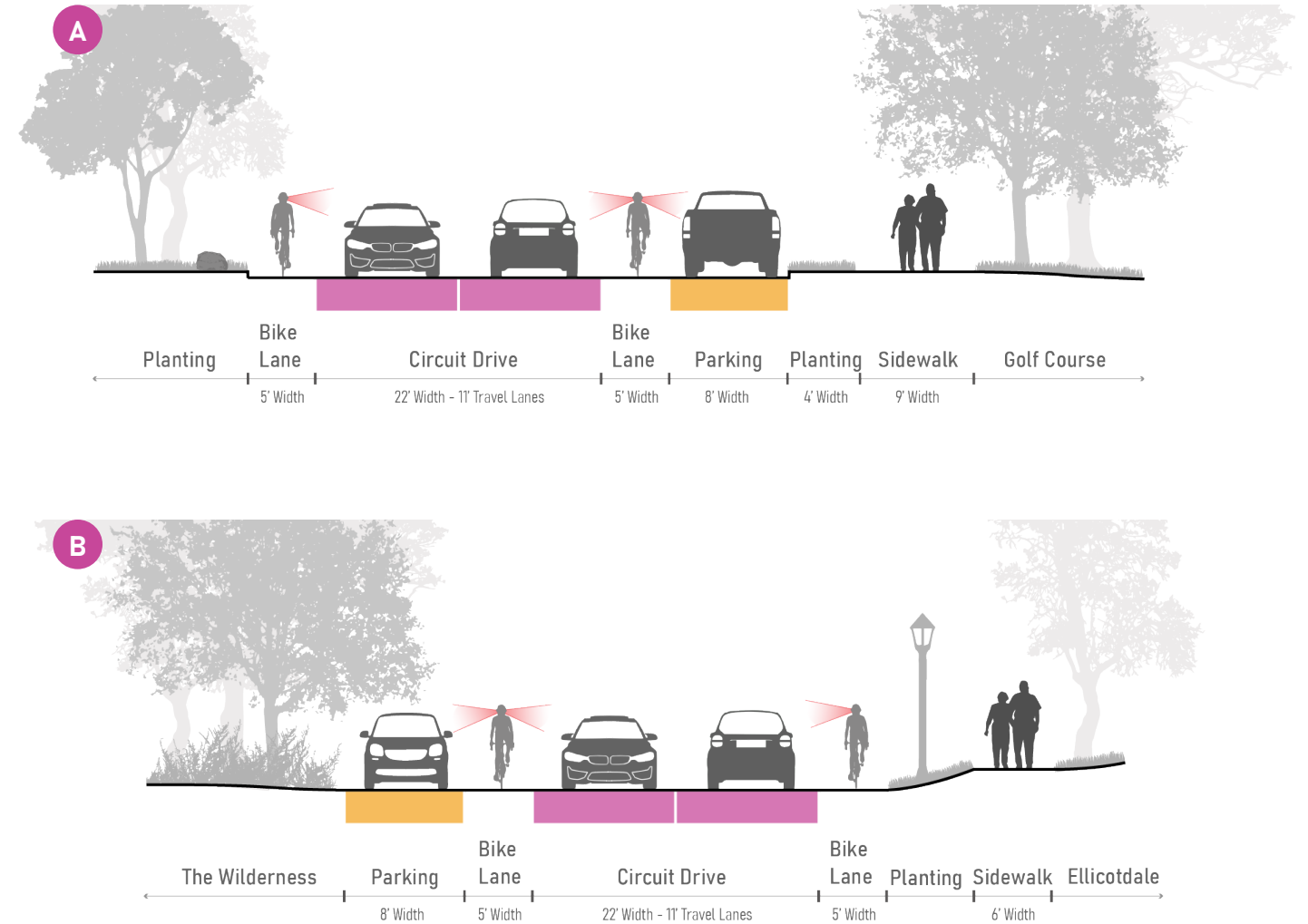
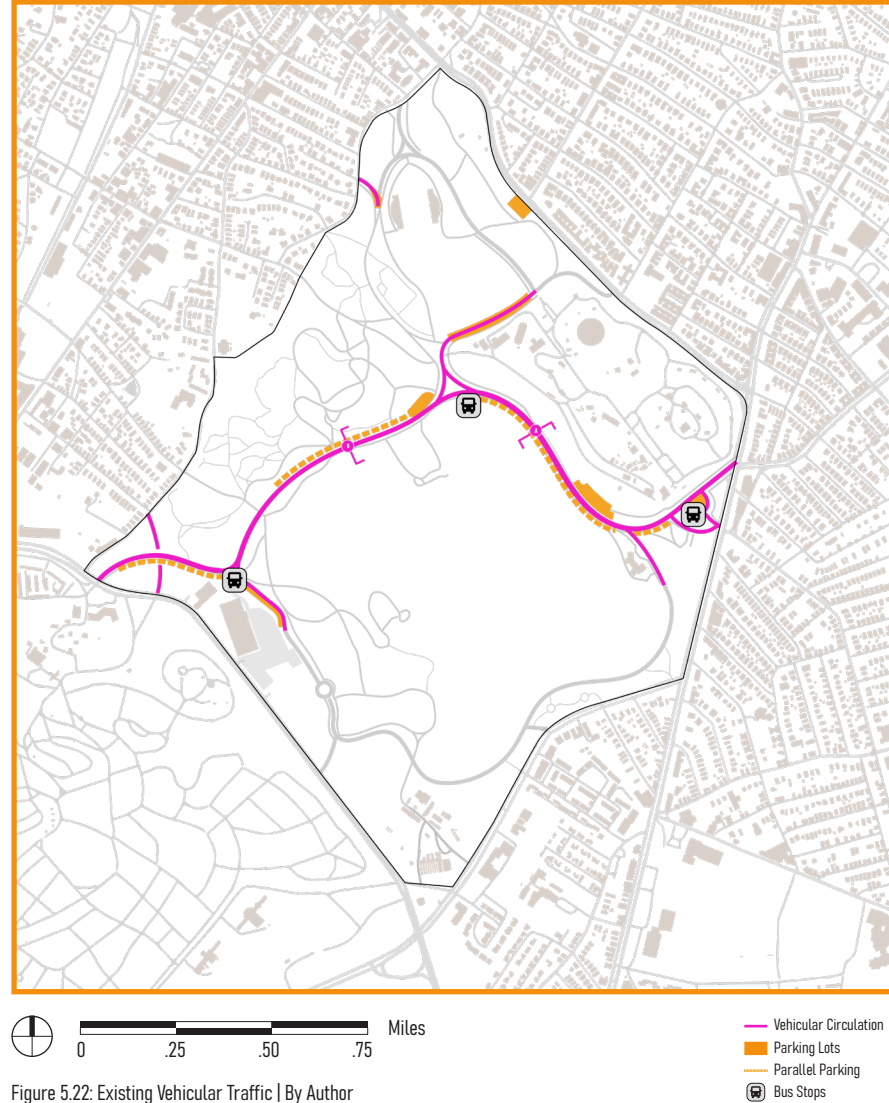
- Intermittent lane markings blur distinctions between cyclists and vehicular traffic
- With the bike lane used as the separation between moving and parked traffic creates an unsafe environment for the cyclist as there is high cross-over
- Crosswalks along circuit drive create a hazardous environment for pedestrians as there are limited measures to slow traffic as well as denote a crossing

Opportunities:

- Rethink the design and functionality of Circuit Drive to prioritize the pedestrian and promote larger park connections
- Improving pedestrian connections across and along the road to enhance the users circulation and safety
- Use traffic calming measures along vehicular pathways and designated crossings

Note: finding from the Franklin Park Action Plan

PROTECTION



Non-Vehicular Traffic

→ Is there dedicated space for different non-vehicular modes to reduce the amount of conflict? In the current circulation system, for each pathway, what is the potential for conflict between users?

Findings:

- Primary loops are very wide which decreases the amount of conflict between non-vehicular users but there is nothing regulating direction or speed which can create conflict
- With circuit drive taking over the primary loop, it has pinched non-vehicular circulation onto a narrower path creating a high-potential of conflict considering anticipated traffic along a primary pathway

Opportunities:

- Delineate between different non-vehicular modes to reduce conflict, add stripping denoted for cyclists and pedestrians.
- Reconfigure circuit drive to reduce vehicular infrastructure and widen Circuit Loop to remake it a continuous loop

PROTECTION

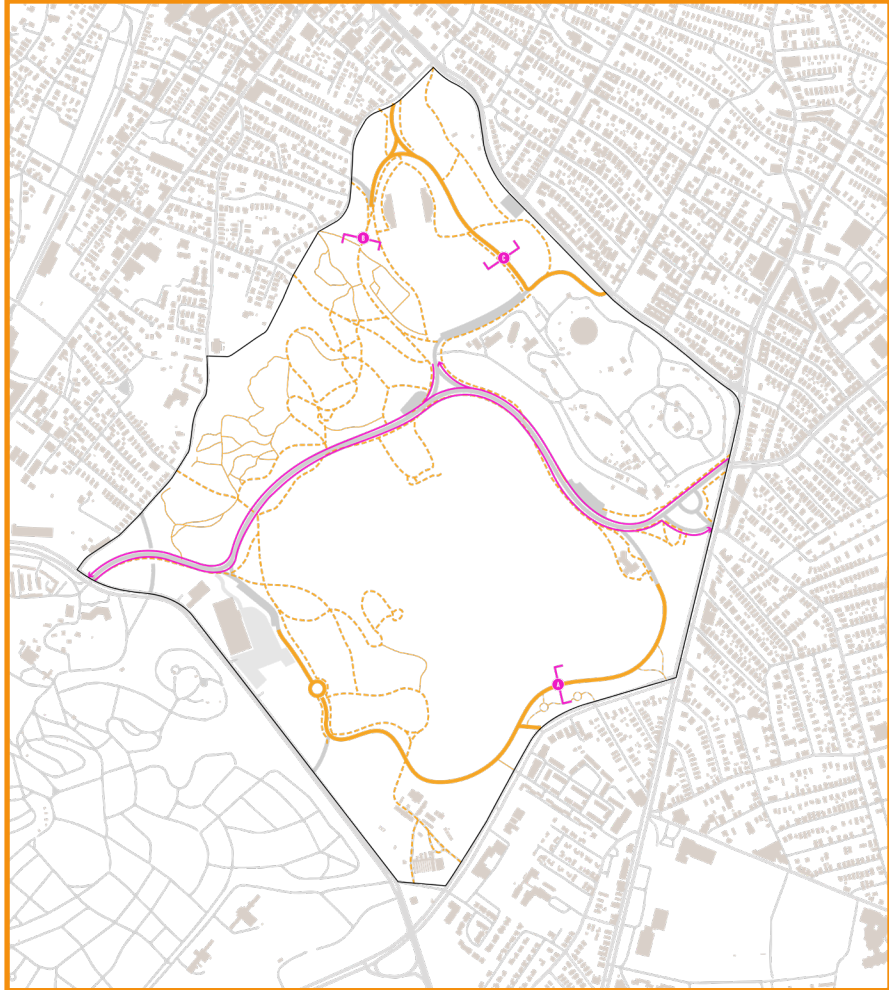


Figure 5.23: Existing Non-Vehicular Traffic | By Author

— Cyclist Infrastructure
— Multi-Use Pathways
— Shared Pathways, higher risk of conflict between user groups

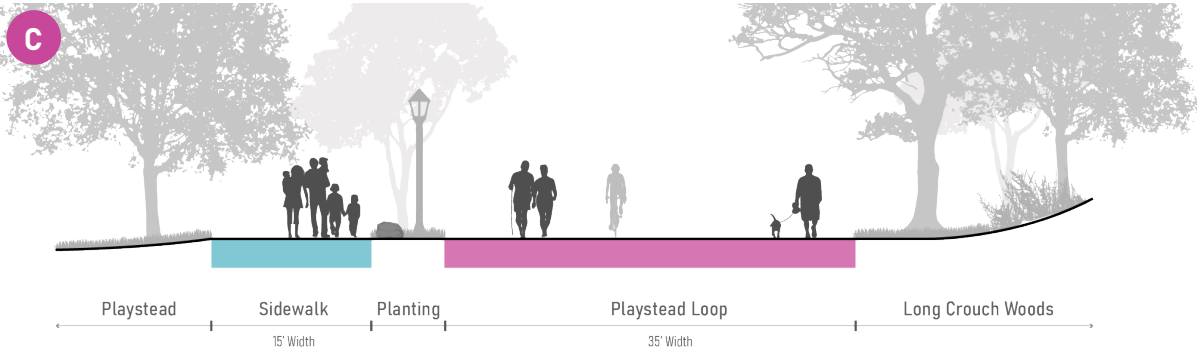
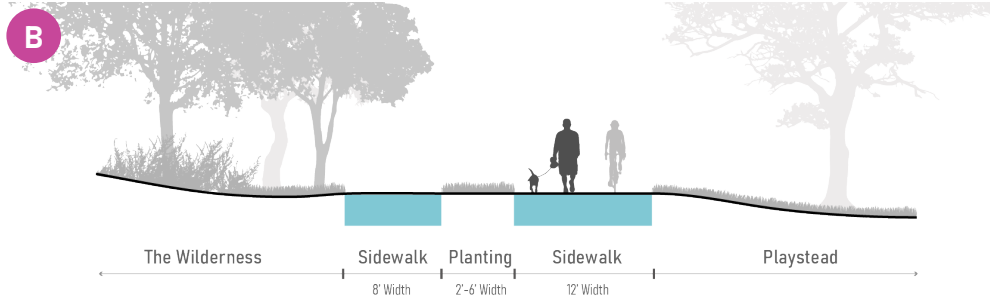
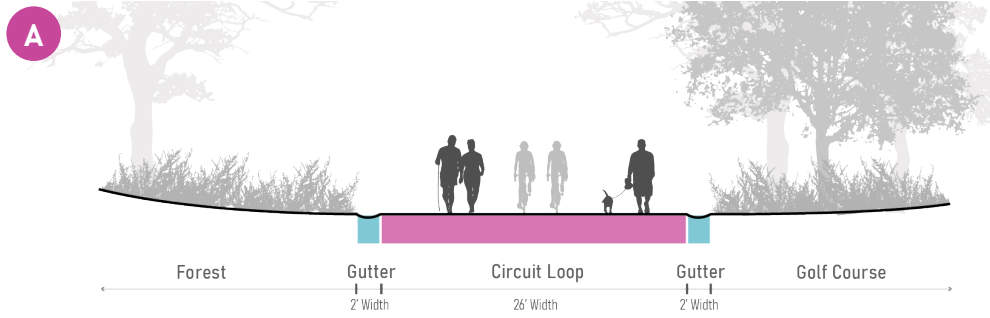


Figure 5.23.1: Existing Primary Loops Sections | By Author

 Unpleasant Sensory

→ Are there any unpleasant smells, sounds, or air quality present along the circulation system? Does the circulation system also provide protection from unpleasant climatic conditions such as rain, snow, sun, and wind?

Findings:

- Circuit Drive is a major vehicular connection across the park that creates a short cut and higher traffic patterns than originally intended
- There are no pavilions or structures along the circulation system to provide protection from climatic conditions
- The circulation system is mostly protected through a continuous canopy coverage

Opportunities:

- To create a natural protection from climatic conditions, additional planting along the primary circulation system can provide shade and little shelter
- Providing covered shelters or pavilions along the circulation system can help protect from harsh climatic conditions or events and create additional comfort
- Add planting along primary circulation systems to help close the gaps created by the loops aiming to create a continuous canopy protecting users

PROTECTION

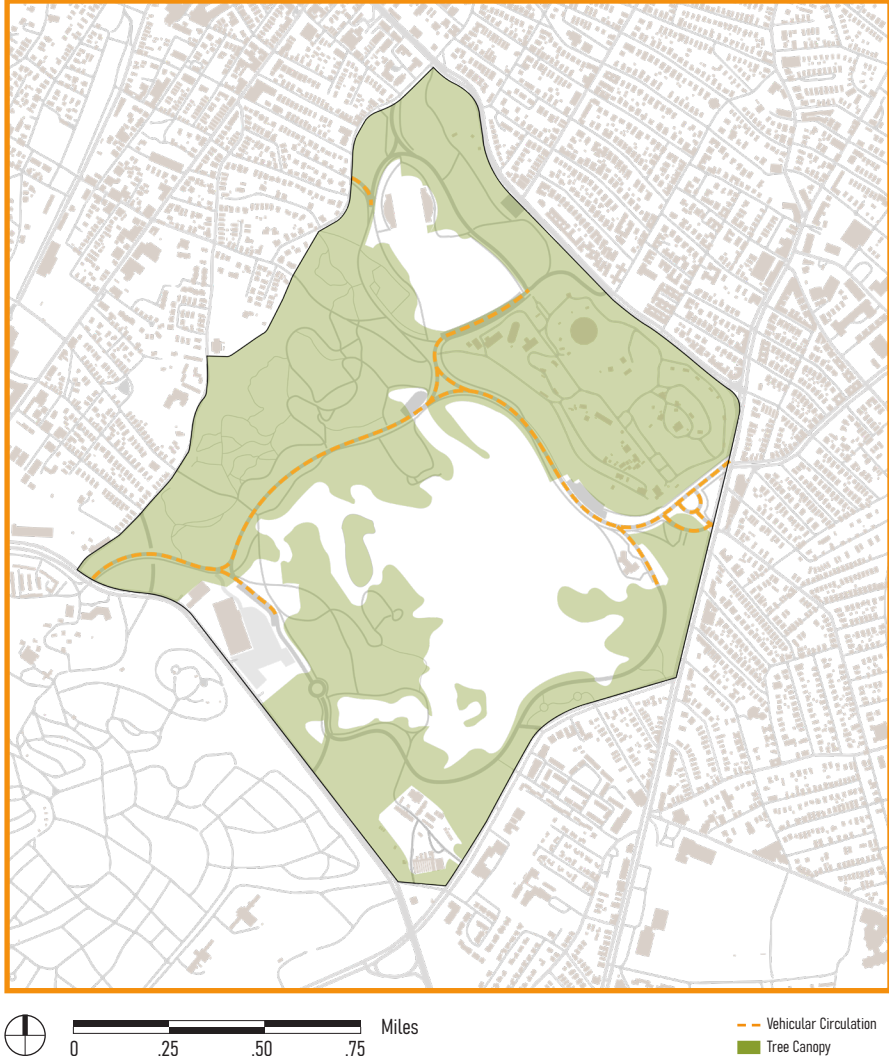


Figure 5.24: Existing Unpleasant Sensory | By Author



Heavy traffic along Circuit Drive has facilitated an unpleasant auditory experience.



Emissions were reported as a health concern within the park (Boston Parks & Recreation Department 2022).

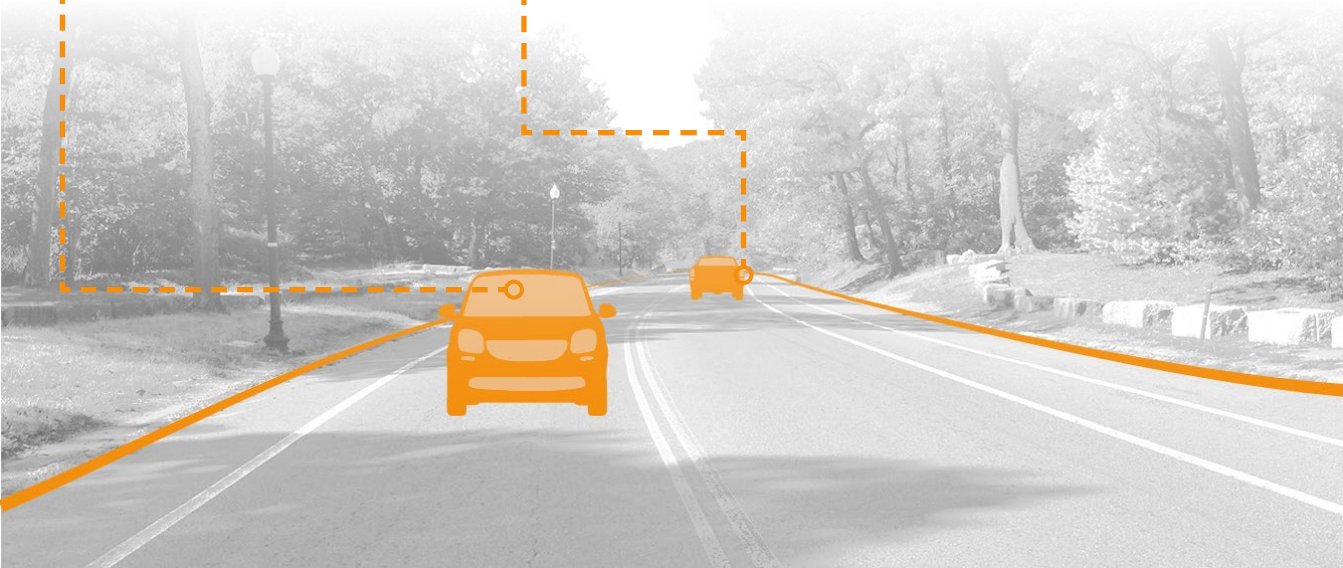


Figure 5.24.1: Unpleasant Sensory - Circuit Drive | By Author



Figure 5.24.2: Canopy Protection | By Author



→ Most pathways within the circulation system are have canopy coverage providing some protection from harsh climatic conditions such as the sun.

Intersections

- Are there identifiable critical intersections within the circulation system? If so, are they easily navigable? Are there multiple transportation modes meeting there? If so, are there safety measures in place to decrease conflict between modes?

Findings:

- There are multiple confusing intersections along the major artery in the park's circulation system where multiple modes meet leaving pedestrians and cyclists feeling vulnerable to conflict with vehicular traffic
- Insufficient signage adds to the confusion for all user types who are seeking direction towards a destination or park amenity

Opportunities:

- Reconfigure intersections to clearly separate and limit interaction between vehicular and non-vehicular modes.
- Conduct a realignment of circuit drive to regulate the need for unnecessary traffic to simplify intersections. Add wayfinding for both vehicular and non-vehicular modes to reduce hesitation

Note: finding from the Franklin Park Action Plan

PROTECTION

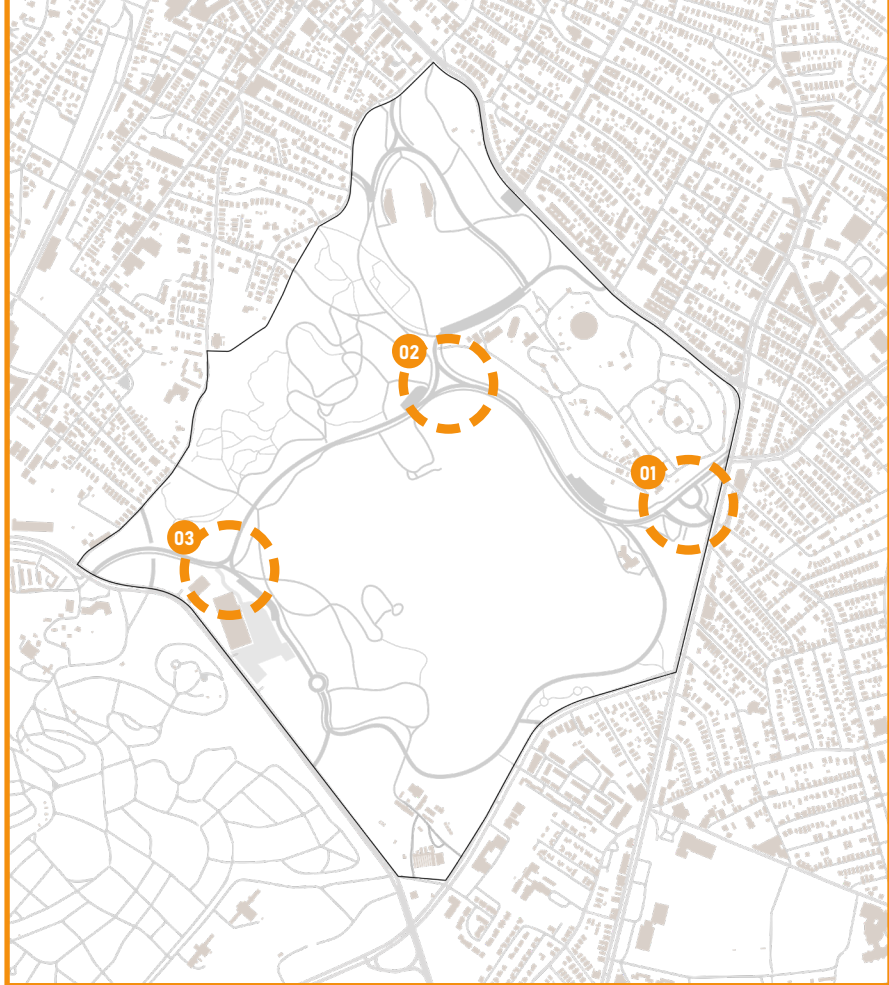


Figure 5.25: Existing Critical Intersections | By Author

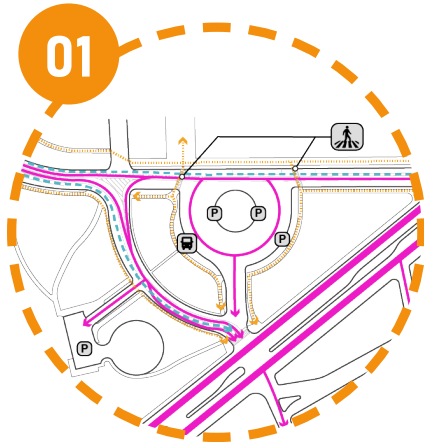


Figure 5.25.1: Peabody Circle Intersection | By Author

- Peabody Circle acts as the primary entrance to Franklin Park once home to a large promenade stretching the entirety of the Ante Park. Remnants of still existing such as the semi circle now used for zoo parking. This intersection is very confusing as multiple modes meet creating numerous awkward intersections.

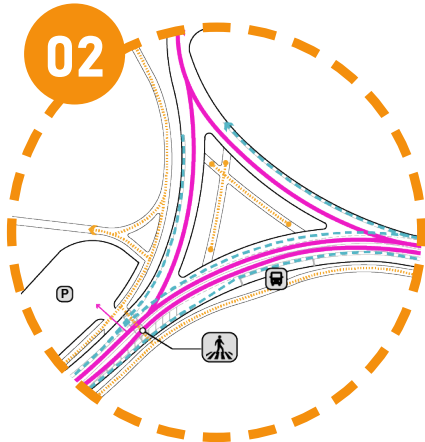


Figure 5.25.2: Valley Gates Intersection | By

- Valley Gates intersections used to act as the threshold between the Ante and Country Park's as you passed through the historical Valley Gates. Today, this intersection is a pivotal connection point for all modes from Circuit Drive into the Playstead. With this configuration, it doubles the amount of conflict for non-vehicular users interacting with vehicular traffic.

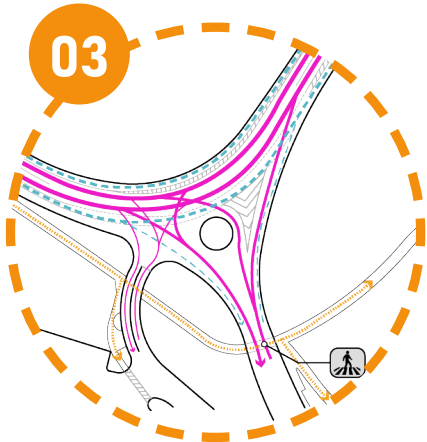


Figure 5.25.3: Shattuck Hospital Intersection | By Author

- The Shattuck Hospital intersection is the connection point to Ellicottdale from Circuit Drive. This intersection is unique in the way that it has a circular planted island in the middle, and a dual connection in close proximity. In this turn, having multiple connection points can be hazardous for non-vehicular users as it increases the risk for conflict or injury.

Edge Conditons

→ What are the current edge conditions of the circulation system or park? Where are the entries to the circulation system? Where are there crosswalks or connections to the circulation system?

Findings:

- There is busy traffic on four out of the five edges of Franklin Park, intensifying the divide between the park and adjacent neighborhoods.
- There are stretches of the park edge that lack a perimeter sidewalk, or sidewalk conditions are tight which can create an unsafe pedestrian experience along busy roads.
- The park edge presents a sense of difficult passage due to the use of perimeter walls, fences, dense vegetation, and steep topography, ultimately limited the porosity of the park edge.

Opportunities:

- Send a welcoming message to the greater context by increasing porosity of the park edge, and highlighting entrances with improved lighting and signage.
- Implement frequent signaled crosswalks or traffic calming measures, and safer bike lanes to facilitate safer access to the park from the adjacent neighborhoods.

Note: finding from the Franklin Park Action Plan

PROTECTION

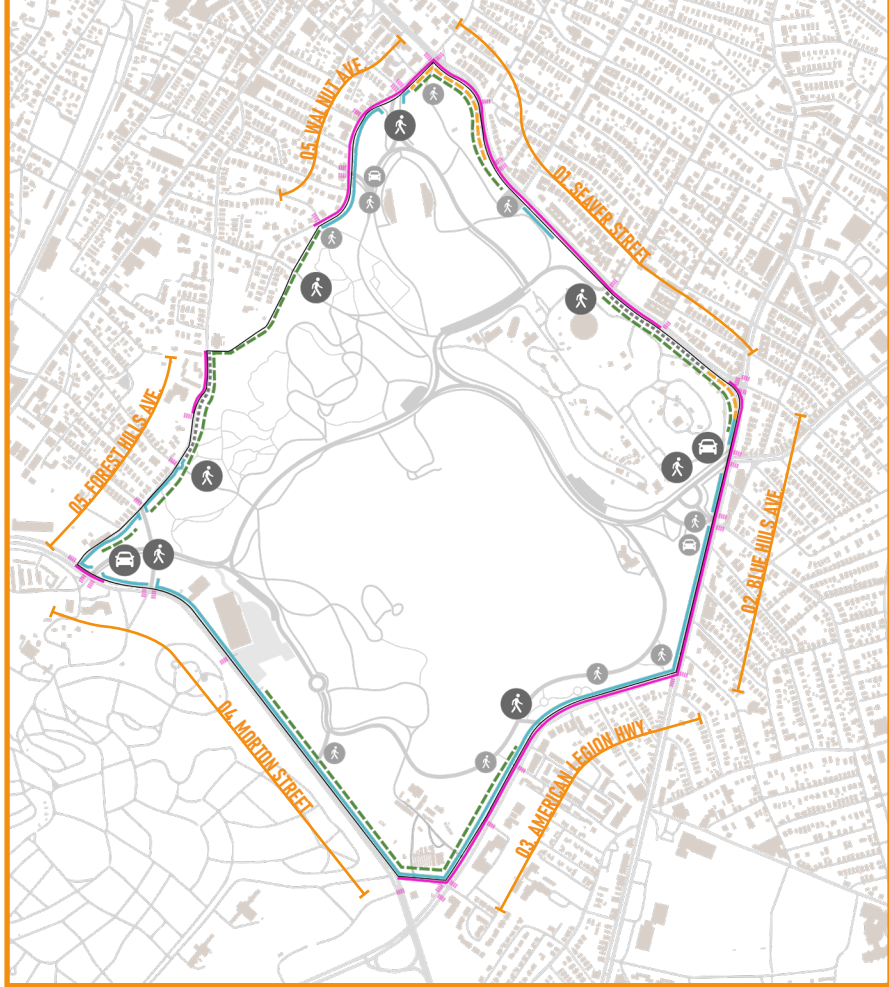


Figure 5.26: Existing Edge Conditions | By Author

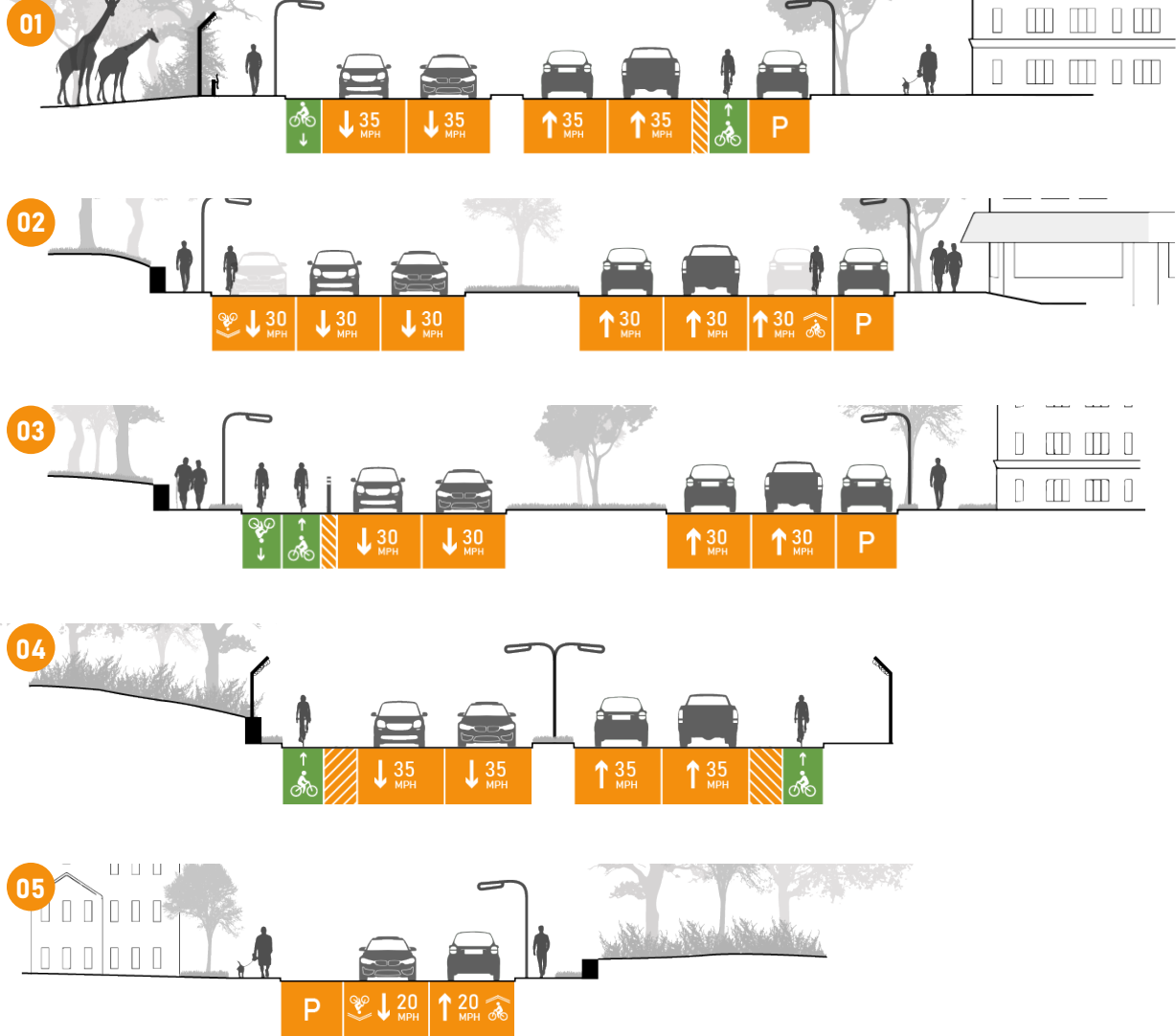
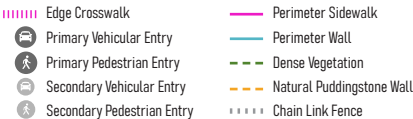


Figure 5.26.1: Edge Condition Sections | By Author; Data Sourced from Franklin Park Action Plan 2022

 Surface Condition

→ *What is the current condition of paving material for the circulation system? Are the pathways clean and clear of debris? Additionally, what is the condition of microscale elements like benches and tables?*

Findings:

- *Roughly 40% of all circulation elements such as ramps, stairs, roads, and pathways are in a damaged or poor condition*
- Microscale elements such as benches or tables are in poor condition needed to be replaced
- Circuit Drive is in need of repavement as current asphalt is buckling and cracking due to heavy usage
- Circuit Loop and primary pathways are in good condition due to a recent repavement of blacktop
- Playstead Loop is in rough condition with major cracking and buckling of asphalt and some sections are falling apart

Opportunities:

- A repaving of the circulation system can remove existing paving issues like cracking and buckling

Note: finding from the Franklin Park Action Plan

DELIGHT

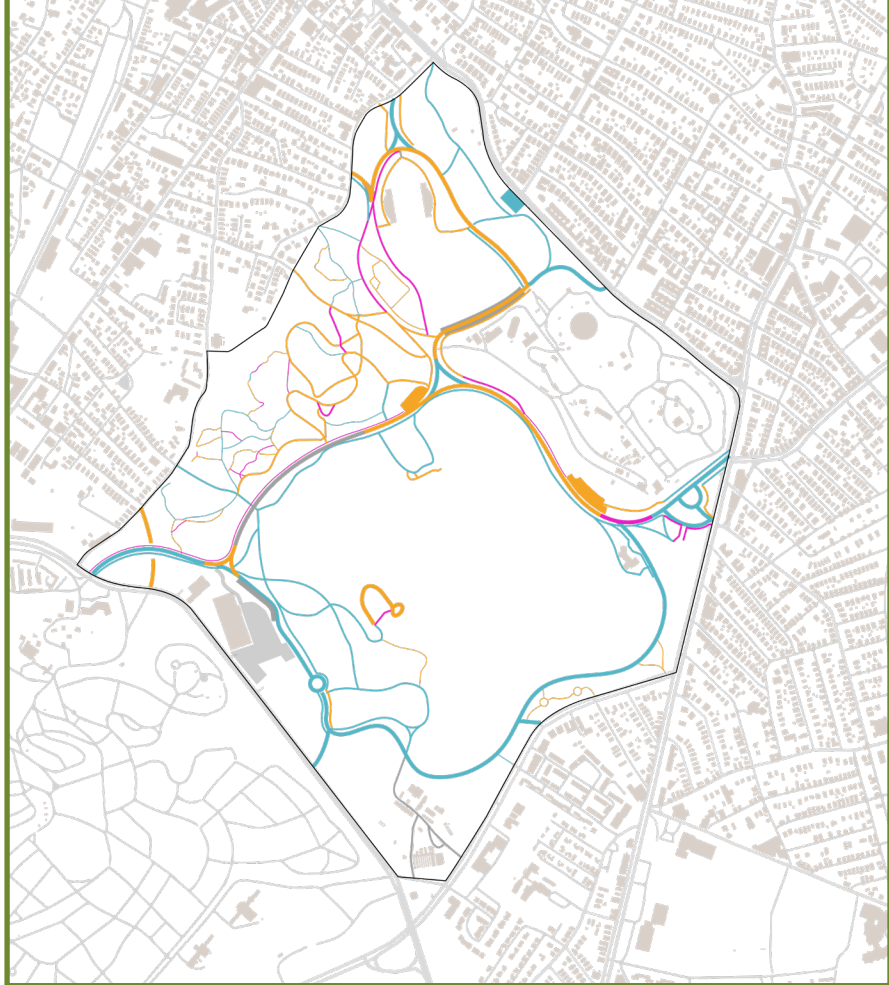
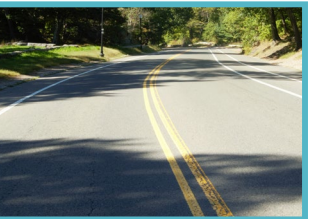


Figure 5.27: Existing Surface Condition | By Author

Circuit Drive			
Circuit Loop			
Playstead Loop			
The Wilderness			

→ Circuit Drive's condition varies as the southern portion is recently repaved and northern portions are in desperate need of repaving.

→ Circuit Loop is in fairly good in regards to paving condition. The loop has been recently repaved with asphalt and lined with cobblestone. However, the pavement is consistently littered with debris from planting.

→ Playstead Loop is in need of new paving as the current condition is poor with consistent bumps, cracking, and buckling of pavement around the entire loop.

→ Wilderness trails are typically unpaved but are constantly covered in small and large debris.

Figure 5.27.1: Surface Conditions | All Images By Author

Options for Seeing

→ Do the circulation corridors provide sightlines into other spaces or capture aesthetically pleasing views? Are there any strategies that the circulation systems uses to create the viewpoints?

Findings:

- There are various viewpoints accessible from the circulation system
- Two typologies are identified for how a user experiences the viewpoints from the circulation system. First is through a clearing in wooded areas into a large opening, second, is an elevated viewpoint letting the user ascend up grade
- At the identified viewpoints, there is no space or microscale elements available like seating for a user to stay or observe the experience

Opportunities:

- Identified viewpoints can be used as potential points to implement spaces to of repose along the circulation system
- Planting strategy in other places of the circulation system can add viewpoints into other areas of the park

DELIGHT

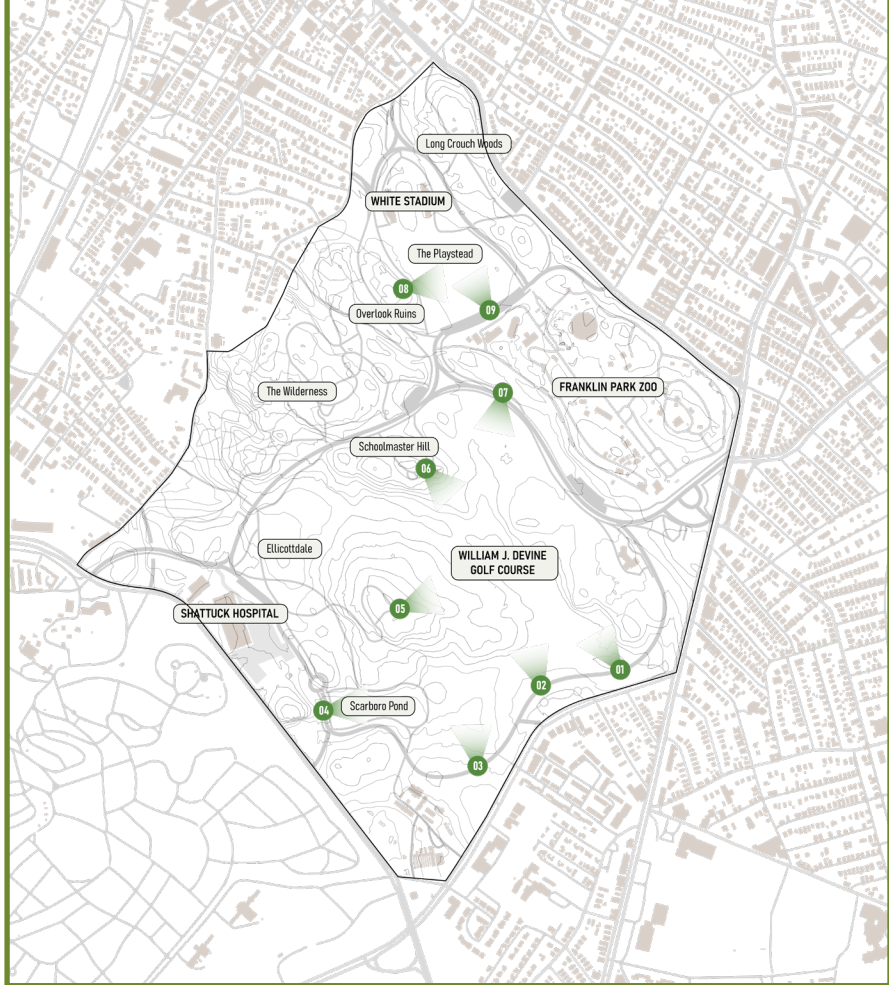
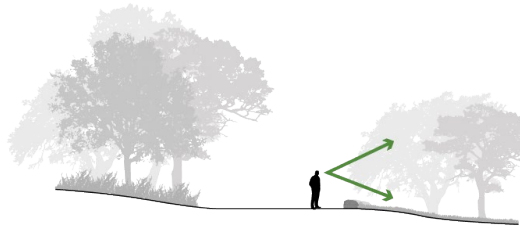
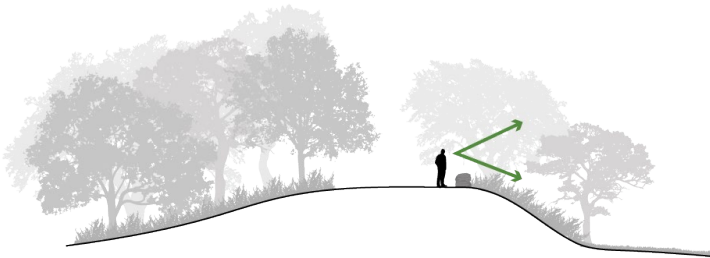


Figure 5.28: Identified Viewsheds | By Author



→ One identified viewshed is a clearing from circulation paths that allow for views into other sections of the park. Usually, pathways are flanked by woodlands than one side creates an opening to show a grand view.



→ The second identified viewshed is created by the interaction between the circulation system and topography. Apart of Olmsted's intention for park circulation was for it to gently interact either ascending or descending with the natural topography.



Figure 5.28.1: Identified Viewsheds with Picturures | All Images By Author

Enjoyment of Nature

→ Does the circulation system allow for opportunities to enjoy nature or the surrounding natural environment? How do natural features like topography play into how the circulation interacts with the natural environment?

Findings:

- Given the context of the circulation system located in a park, there is already a deep connection to nature
- There are two primary environments that the user interacts with along the circulation system which is either wooded areas or open lawn spaces
- Franklin Park consists of puddingstone and has some outcroppings and the stone is extracted and used as natural barriers like walls and bollards to keep the natural aesthetic
- The interaction between circulation and topography allows for enjoyment as the system was designed to easily navigate the topography and provide a constant connection to the natural environment

Opportunities:

- Use tree planting along primary pathways through the use of allees or informal lines of tree planting to create a deeper sense of enjoyment of nature along man-made infrastructure
- The use of flowing walks or adding seasonal interest along pathways can help add a seasonal visual interest and delight during movement throughout the park

Note: finding from the Franklin Park Action Plan

DELIGHT



Figure 5.29: Existing Enjoyment of Nature | By Author

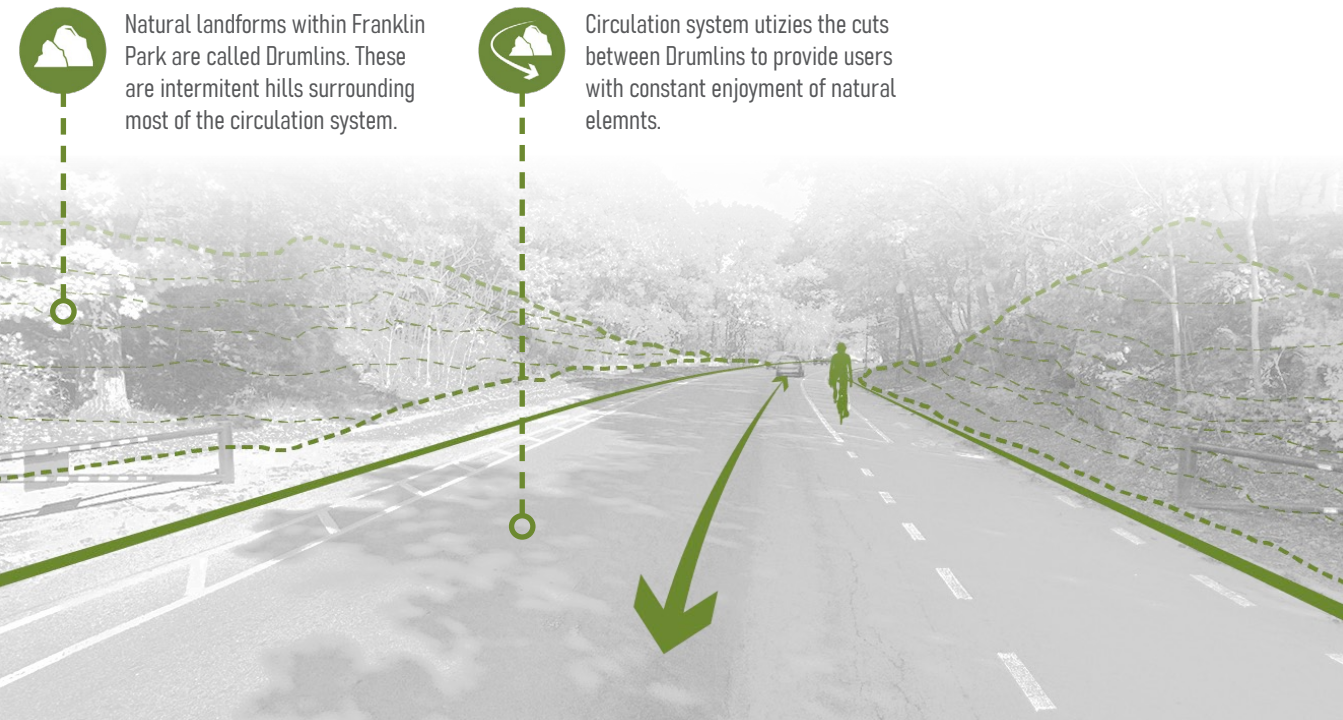


Figure 5.29.1: Pathways Cutting Through Valleys | By Author



Figure 5.29.2: Native Planting Aesthetic Adjacent to Pathways | All Images By Author

- The circulation system offers many opportunities to enjoy nature as it was intentionally designed. Paths wind through the forested areas and lead users to an opening in view to central meadow.

 Positive Aesthetics

→ *What aesthetic (beautiful/pleasing) features are present along the circulation system? For example, is there any art, historic features, unique structures, unique planting aesthetic, water features, or unique paving design?*

Findings:

- There are various historical elements throughout the park that the circulation system provides access to
- There is a lack of variety of positive aesthetics such as water features, art, or paving design to add a sense of delight and variety to the circulation

Opportunities:

- Add some modern aesthetics to the circulation system such as paving design which could be permanent or paint to bring neighborhood character into the park which is currently lacking
- Bring in local art/sculptures that could be used alongside primary paths to incorporate a sense of delight and want to continue moving along the loops

DELIGHT

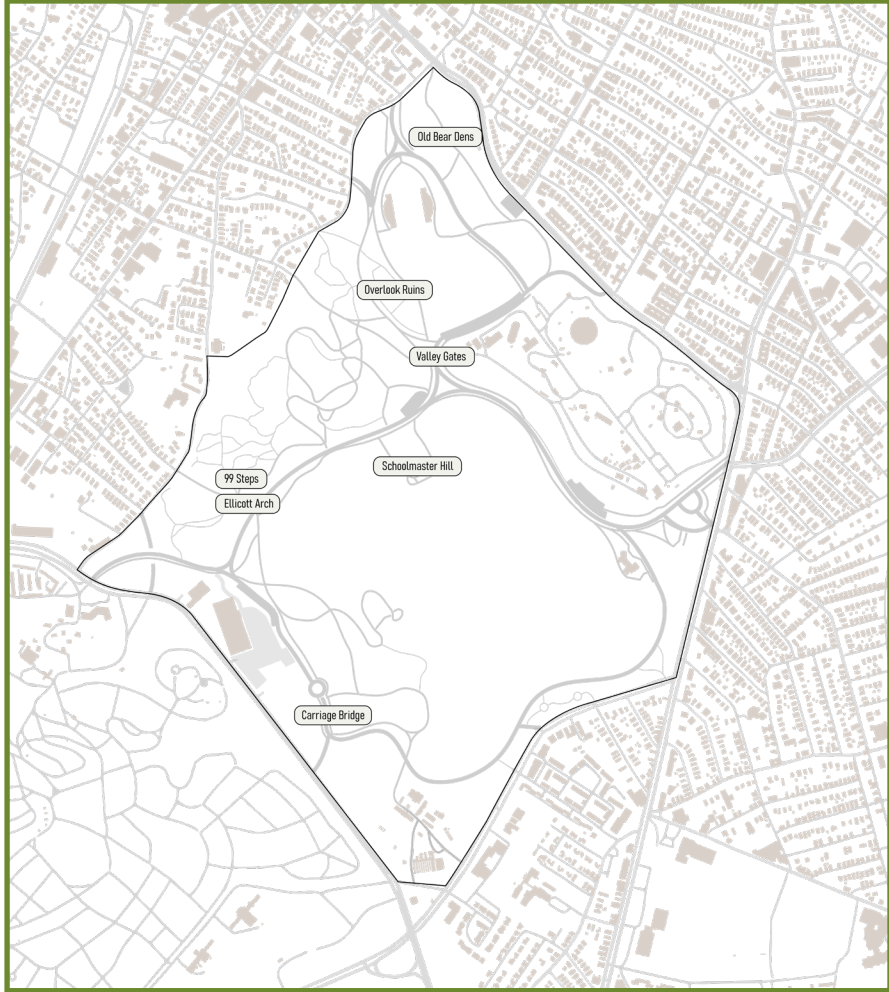


Figure 5.30: Existing Positive Aesthetics | By Author



→ The Bear Dens is an historical space once used to house bears for the Franklin Park Zoo in the Playstead. Today, they are abandoned and filled with overgrown vegetation.



→ White Stadium is a high school sports stadium in the Playstead. It continues to be used today by the local school district for sporting and musical events.



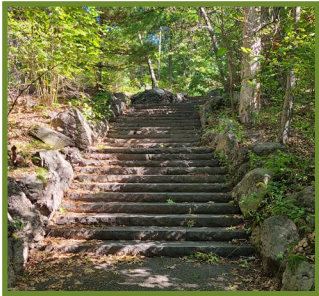
→ Overlook Ruins is a private space overlooking the lawn of the Playstead below. The current state of the ruins is overgrown by vegetation and is not accessed very often by park users.



→ Valley Gates was once the demarcation line between the Country and Ante Park. Today, they are a forgotten feature due to interior circulation changes.



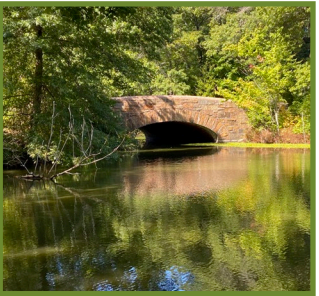
→ Schoolmaster hill once was a place for concessions in the park and a commonly visited place. Today, all that is left is the ruins perched atop of Schoolmaster Hill overlooking the golf course.



→ The 99 Steps is a staircase in the Wilderness along the primary loop within the network of trails. Today it is a well-known feature within the Wilderness.



→ Ellicott Arch is adjacent to the 99 steps and is a structural feature to connect the Wilderness to Ellicottdale by going under Circuit Drive.



→ Carriage Bridge is a striking feature at the north end of Scarboro Pond. The bridge completes the loop around the pond and provides stunning views into other areas of the park.

Figure 5.30.1: Identified Positive Aesthetics | All Images By Author

Arrival Sequence

→ Do primary entries of the circulation system have a sense of welcoming or “curb appeal”? Does it have a front door effect welcoming users through a grand or subtle design to reveal a experience?

Findings:

- Primary entrances along Circuit Drive does not provide a sense of arrival or clear identity of Franklin Park
- Secondary entrances all have barriers consisten across all and have a feeling of keep out rather than welcoming in
- Once entering the circulation system, there is no sense of direction or identification of place for user to ground themselves within the entirety of the system
- All arrival sequences deliver a similar experience revealing a lack or hierarchy

Opportunities:

- Have arrival sequence reference original park intent with country and ante park, primarily focus on planting aesthetic
- Pair arrival sequence with wayfinding strategy to help create a sense of place for all modes entering the park

DELIGHT



Figure 5.31: Existing Arrival Sequence | By Author



→ Peabody Circle entrance lacks a sense of arrival and park signage. First thing to see is a sea of cars in a parking lot.

→ South entrance lacks a sense of arrival at Franklin Park along with arrival signage to identify the park. The only thing the user sees is woodlands and a street with parked vehicles.

→ American Legion Highway entrance does not have a welcoming feeling. The entrance is for pedestrians but is blocked by a layer of barriers. Once entered into the park, there is no sense of direction.

→ Glen Road entrance has a permeable barrier which creates a feeling of not welcome. Once entered, the user is emersed within the woodlands.

→ Walnut Ave entrance like the others has a permeable barrier with a keep out feeling. Once entered, the user sees historical White Stadium but is blocked with planting.

Figure 5.31.1: Arrival Sequence Imagery | All Images By Author

Site Analysis to N.V User Groups

Following the Quality of Circulation Framework application, a non-vehicular user group analysis was completed. Non-vehicular user groups used for site analysis were derived from chapter 2. The user groups from cyclists and pedestrians were analyzed for their experience using the Franklin Park circulation system based on user groups

characteristics discussed within this section. The final outcome is an comprehensive list of issues was generated for each user group. The findings determined the current quality of circulation and ultimately helped inform the design goals for the projective design.

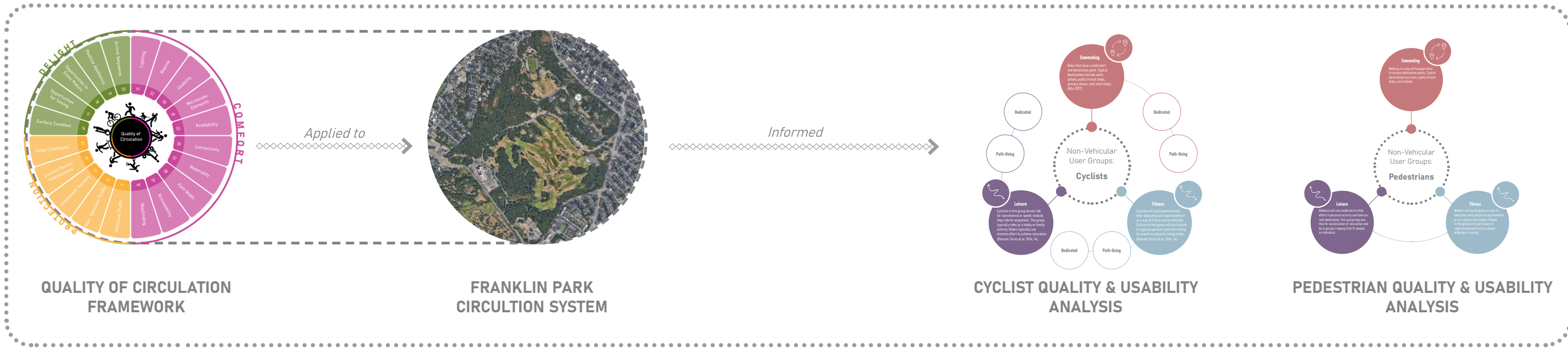
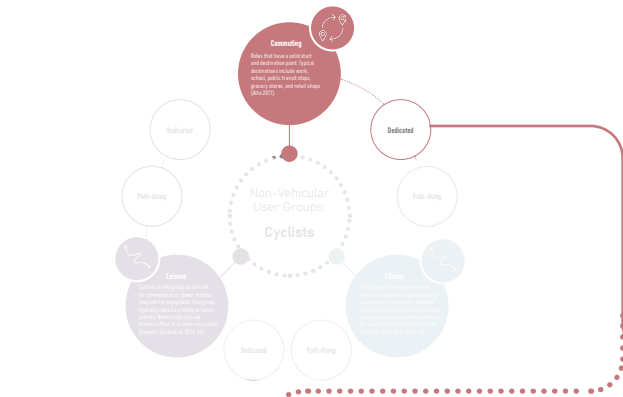


Figure 5.32: Site Analysis Findings Connection to Non-Vehicular Quality and Usability Analysis | By Author

Cyclist — Commuting Dedicated

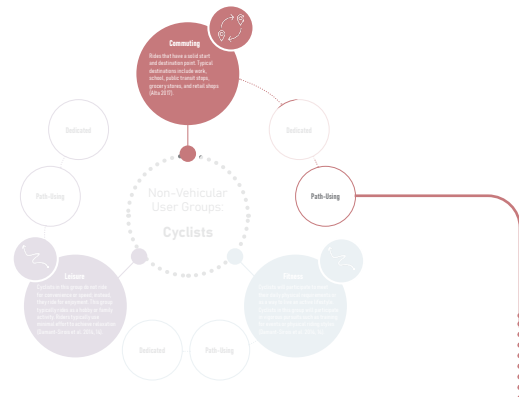


- User Group Characteristics:**
- Doesn't mind riding on bike infrastructure integrated within the street or traffic
 - Are indifferent to having physical barriers between themselves and vehicular traffic
 - Are repelled by unpleasant climatic conditions such as rain, snow, or ice
 - Prefers continuous lanes of faster travel
 - Prefers separation between non-vehicular modes
 - Prefer routes with directional signage

- Current Experience within Franklin Park:**
- Doesn't mind using the unprotected bike lanes on Circuit Drive, a dedicated lane on the road is more than enough
 - The presence of internal barriers inhibit deviation away from Circuit Drive or Circuit and Playstead Loops, discouraging other commuting routes through the park
 - Besides having dedicated lanes on Circuit Drive, there are no dedicated lanes elsewhere throughout the circulation system
 - The current circulation system has many redundant pathways making it hard to navigate, enhanced with an inefficient wayfinding system.

Figure 5.33: NVU.G. Cyclist - Commuting Dedicated Analysis | By Author

Cyclist — Commuting Path-Using



- User Group Characteristics:**
- Prefers routes with continuous and protected bike infrastructure
 - Greatly dislikes riding on infrastructure near moving or parked vehicles
 - Prefers having separation between non-vehicular modes
 - Prefers to have fast and direct routes for commuting
 - Prefers routes with directional signage

- Current Experience within Franklin Park:**
- There is a lack of continuous routes, such as Circuit and Playstead loops as they are bisected by vehicular corridors and parking lots
 - There is no off-street dedicated bike paths other than bike lanes on Circuit Drive
 - The presence of internal barriers inhibit deviation away from Circuit Drive or Circuit and Playstead Loops, discouraging other commuting routes through the park
 - The current circulation system has many redundant pathways making it hard to navigate, enhanced with an inefficient wayfinding system.

Figure 5.34: NVU.G. Cyclist - Commuting Path-Using Analysis | By Author

Cyclist — Fitness Dedicated

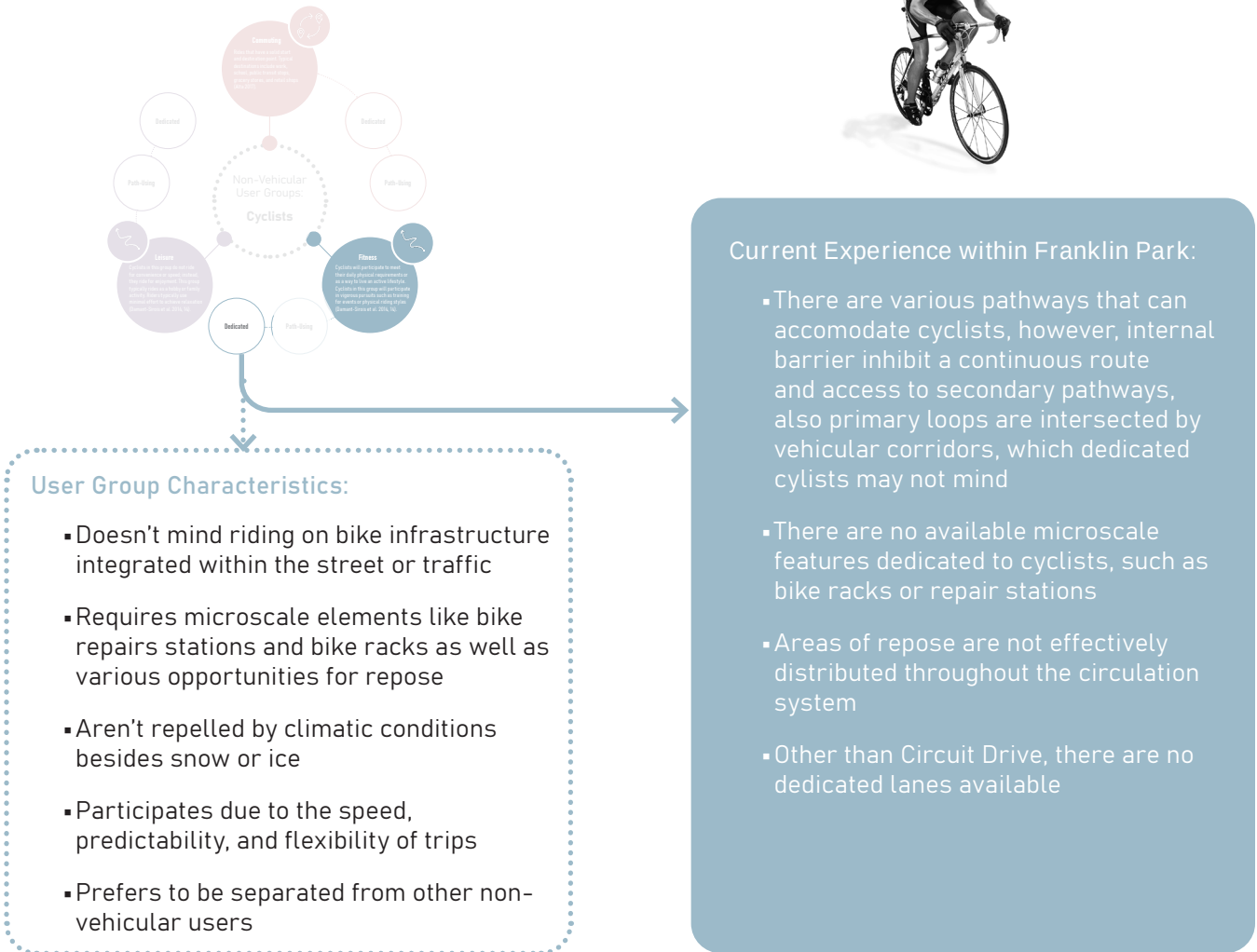


Figure 5.35: N.V.U.G. Cyclist - Fitness Dedicated Analysis | By Author

Cyclist — Fitness Path-Using

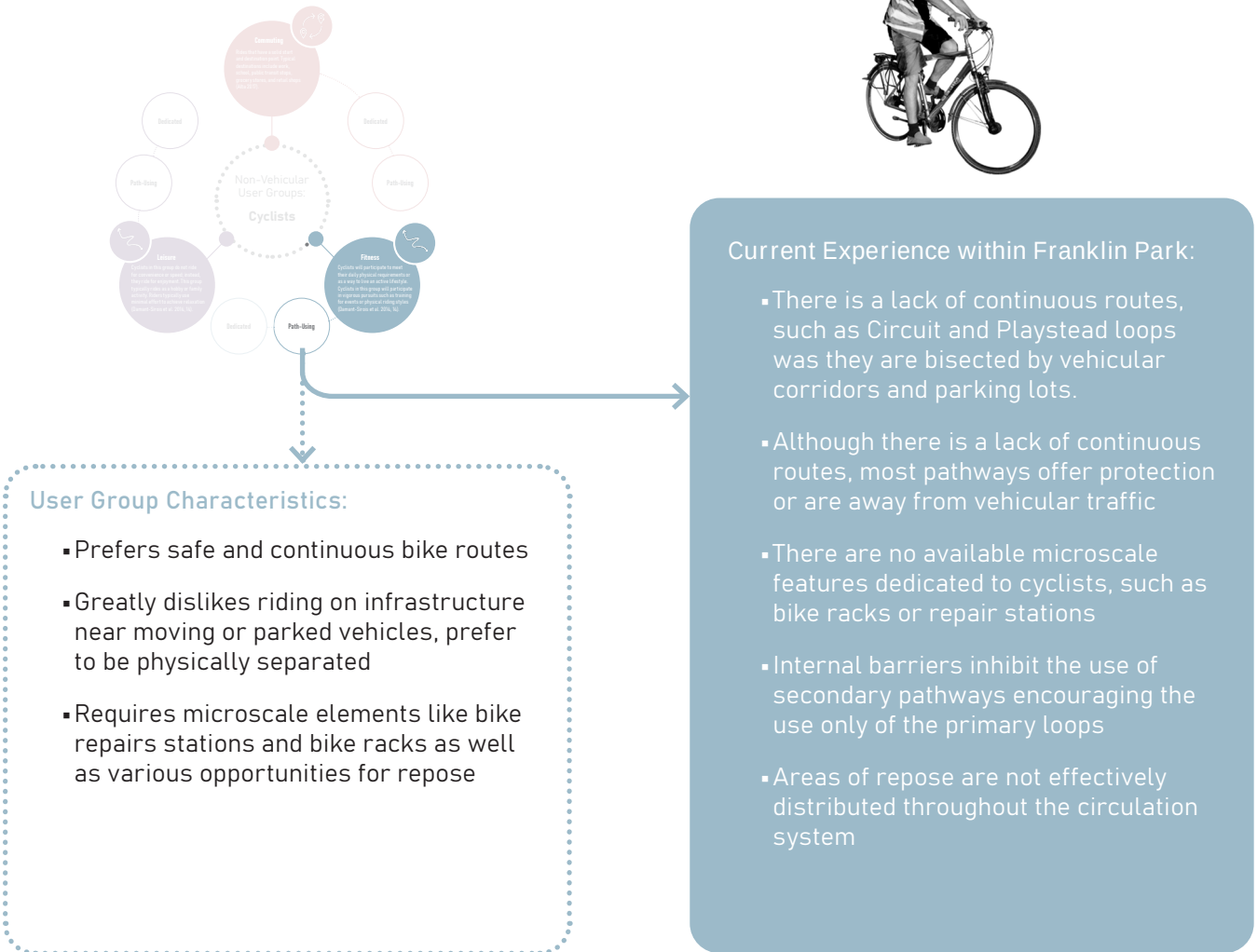
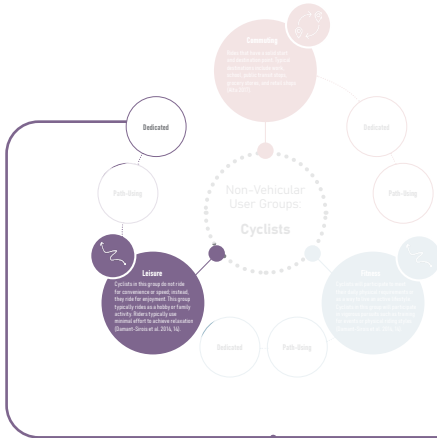


Figure 5.36: N.V.U.G. Cyclist - Fitness Path-Using Analysis | By Author

Cyclist — Leisure Dedicated



User Group Characteristics:

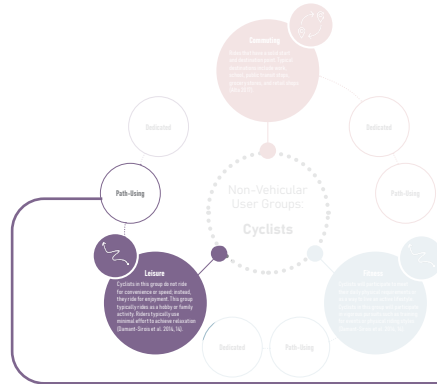
- Doesn't mind riding on unprotected bike infrastructure integrated within the street or on unsegregated pathways
- Requires microscale elements like bike repairs stations and bike racks as well as various opportunities for repose
- Likes routes that are outfitted with wayfinding systems
- Destination and pathway diversity - ensure the variety of destinations and routes

Current Experience within Franklin Park:

- For leisure, this group has a lot of available infrastructure, either on-street or paths that offer dedicated or undedicated space to ride
- There are no available microscale features dedicated to cyclists, such as bike racks or repair stations
- Lack of destination variety and aesthetic features in Franklin Park
- Current system lacks an efficient wayfinding system
- Areas of repose are not effectively distributed throughout the circulation system

Figure 5.37: NVUG. Cyclist - Leisure Dedicated Analysis | By Author

Cyclist — Leisure Path-Using



User Group Characteristics:

- Prefers protected and continuous bike routes, either segregated or unsegregated from other non-vehicular groups
- Requires microscale elements like bike repairs stations and bike racks as well as various opportunities for repose
- Prefers routes with flexibility, i.e destination variety
- Can be influenced to participate with the availability of city bikeshare programs
- Influenced greatly by unpleasant climatic conditions

Current Experience within Franklin Park:

- Other than the bike lanes on Circuit Drive, most pathways that can accomodate cyclists have a buffer between them and vehicles
- The primary loops are disconnected making it hard to have a continuous ride
- There is no microscale elemnts for cyclists like bike racks or repair stations, as well as water fountains, lighting, restrooms and areas for repose available
- There is a lack of impermeable protective shelters from unpleasant climatic events
- Destination diversity is hard with the presence of internal barriers.

Figure 5.38: NVUG. Cyclist - Leisure Path-Using Analysis | By Author

Pedestrian — Commuting

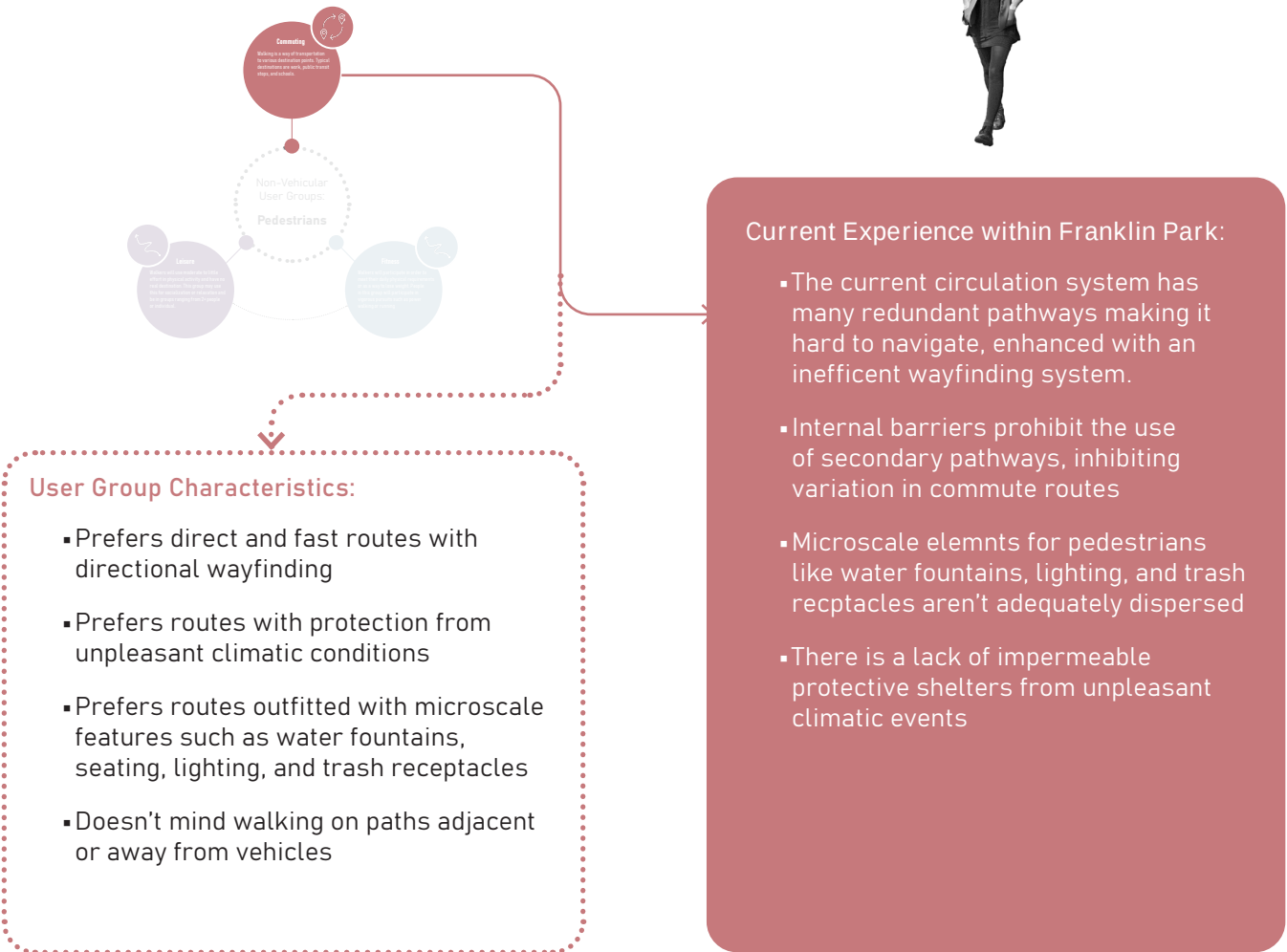


Figure 5.39: N.V.U.G. Pedestrian - Commuting Analysis | By Author

Pedestrian — Fitness

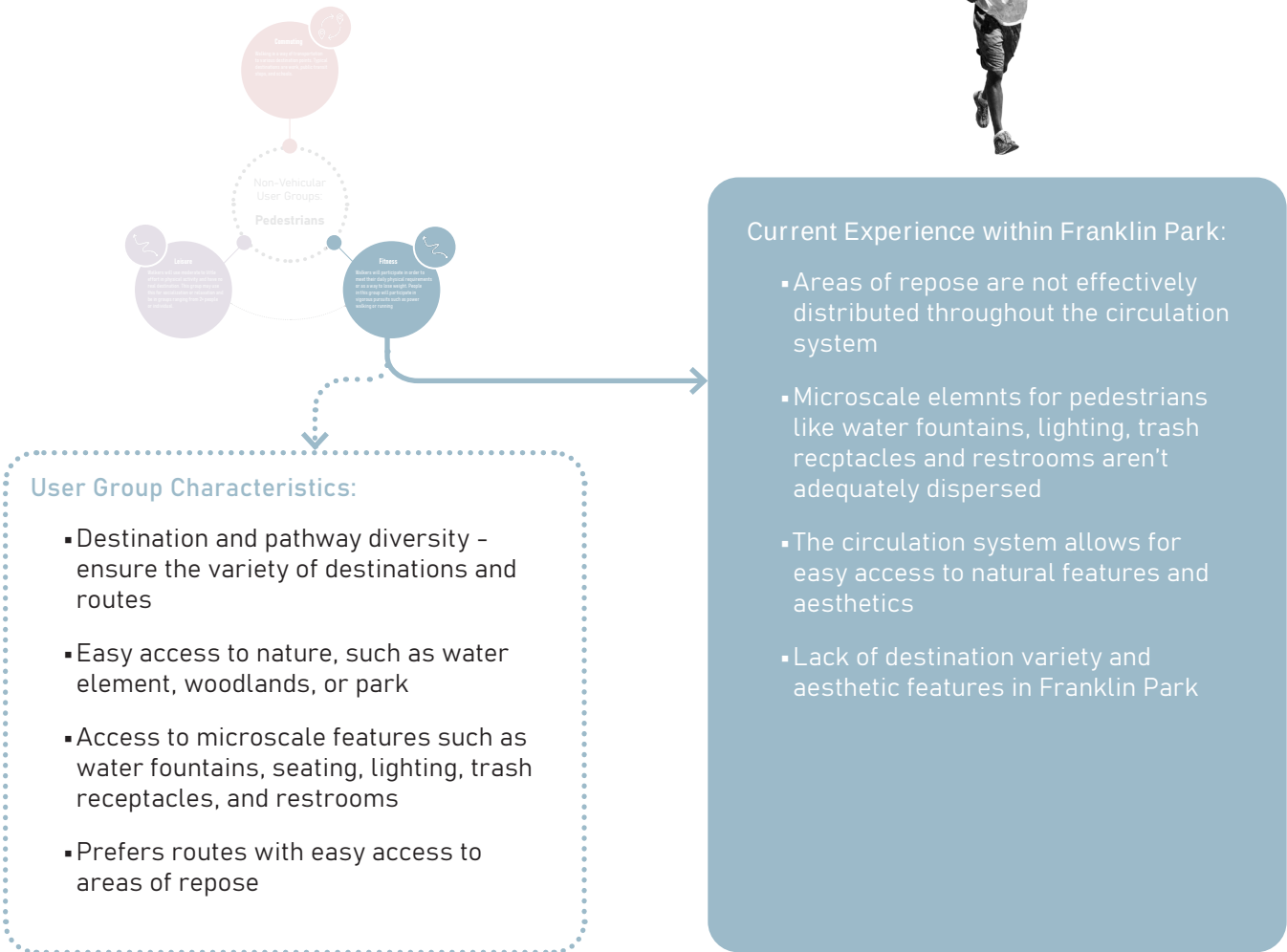


Figure 5.40: N.V.U.G. Pedestrian - Fitness Analysis | By Author

Pedestrian — Leisure

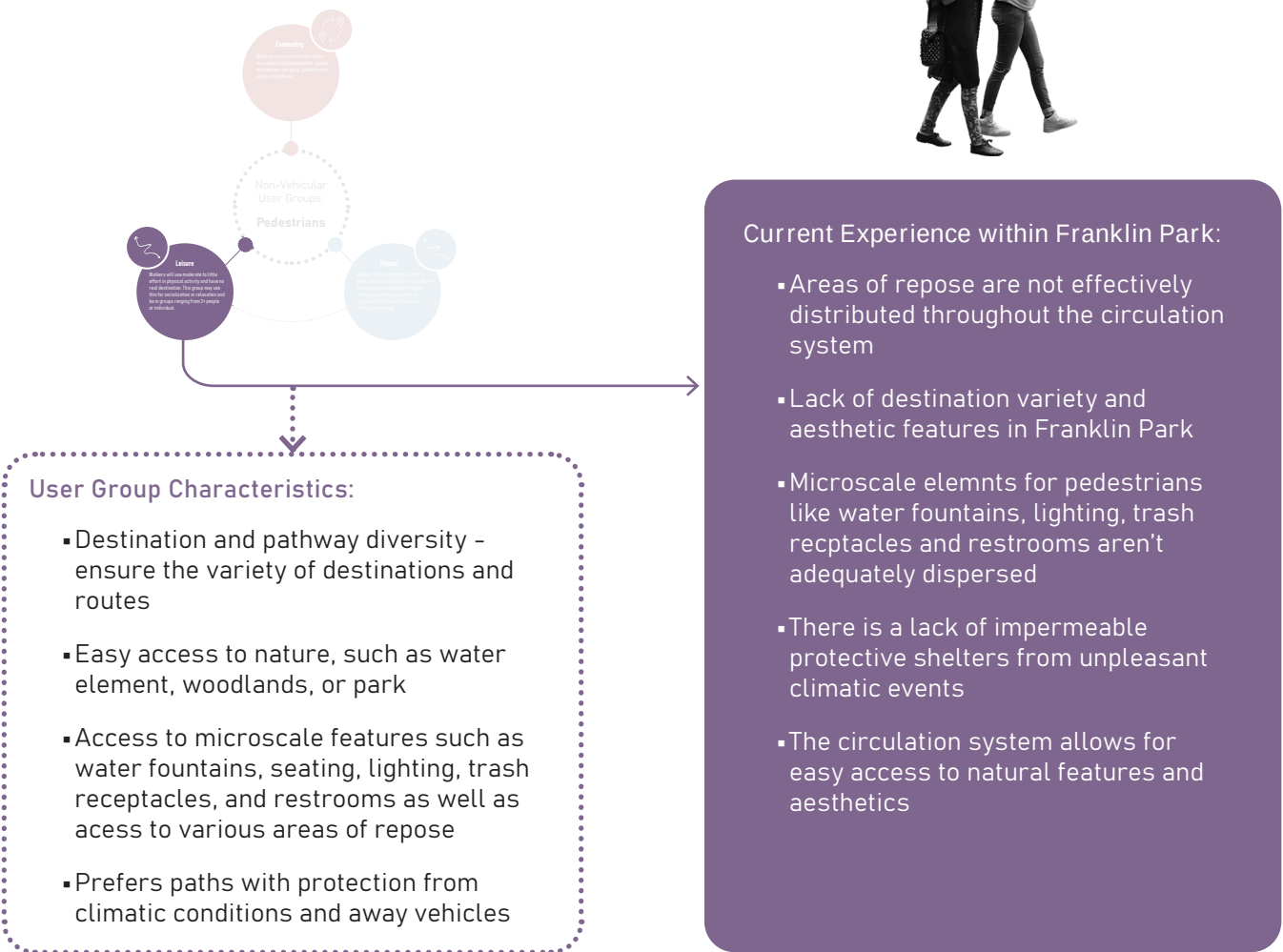


Figure 5.41: N.V.U.G. Pedestrian - Leisure Analysis | By Author

User Group Analysis Summary

Using the site analysis findings and user group characteristics derived for each user group, issues were identified that ultimately impacted their circulation experience. The findings from each user group informed the following main issues within the Franklin Park circulation system. They led to the creation of design goals that addressed the issues identified for each non-vehicular user group. Although each user group has its own needs and characteristics, the following are the primary issues consistent across all.

Repose

Areas of repose are not effectively dispersed

Microscale Features

Microscale features aren't adequately dispersed, and there is no cyclist microscale features like bike racks or repair stations

Internal Barriers

Internal barriers prohibit or discourage the use of the secondary path network adjacent to the primary loops

Vehicular Traffic

Vehicular corridors disrupt both Circuit and Playstead loops, creating a fragmented experience

Wayfinding

The circulation system lacks an efficient wayfinding system

Protection from Climatic Conditions

Lack of impermeable protective shelters against unpleasant climatic conditions

Separation between N.V Users

There is no off-street, dedicated infrastructure for cyclists

Confusing Path Network

The current circulation system has many redundancies making it hard to navigate

Summary of Main Issues - Comfort

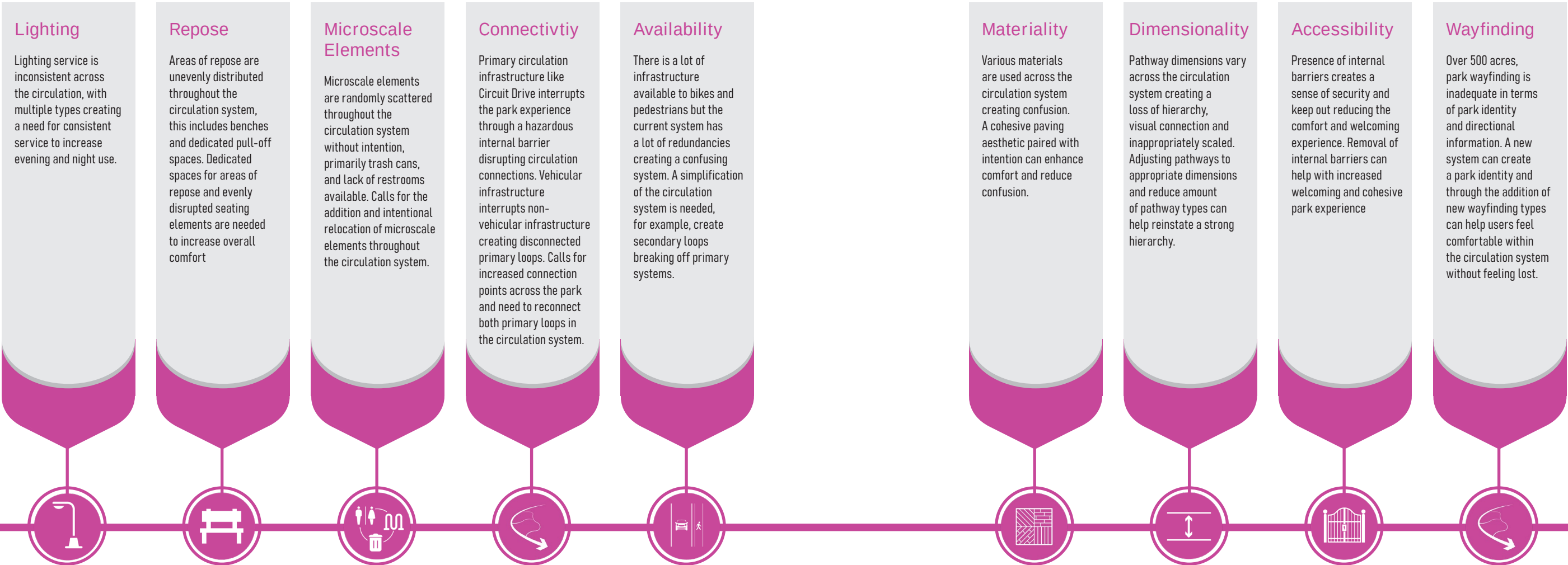
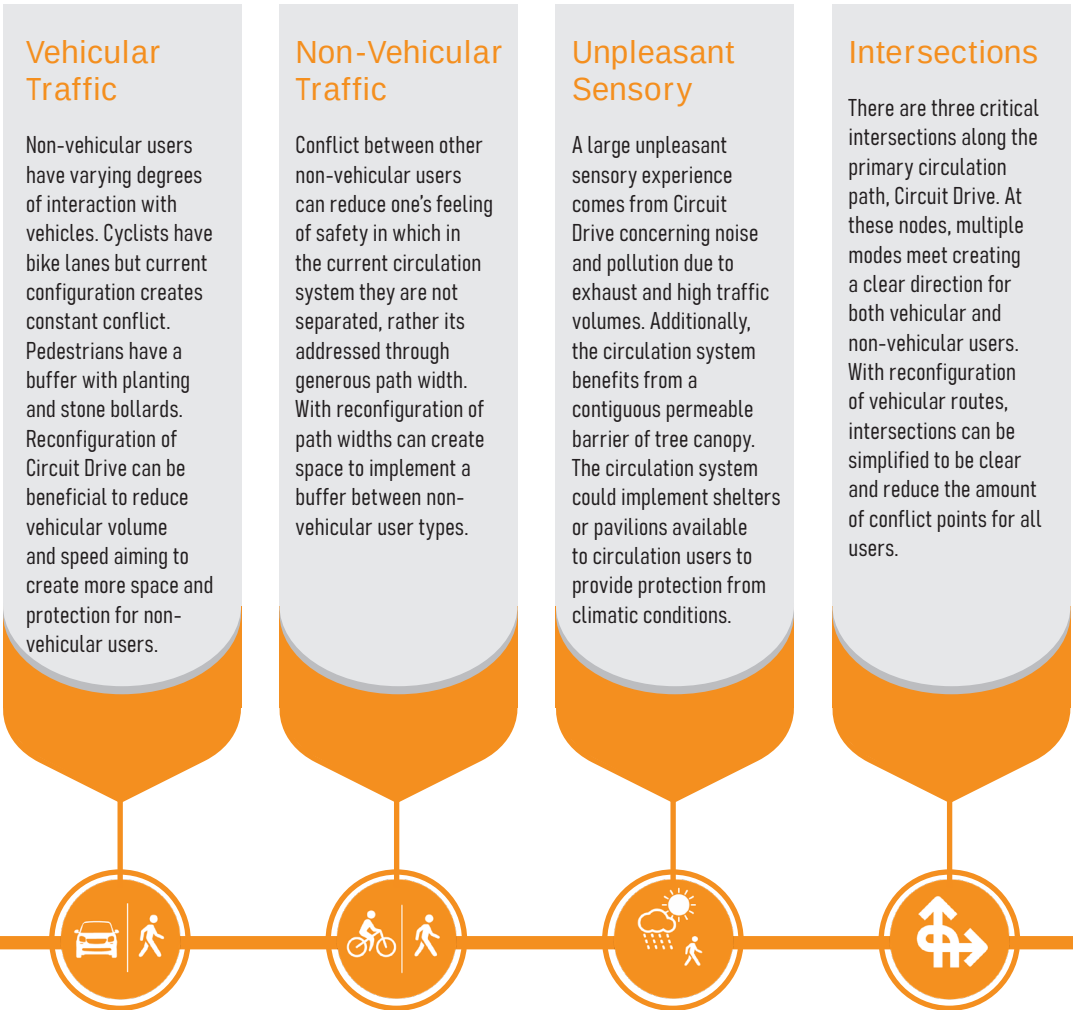


Figure 5.42: Summary of Comfort Issues | By Author

Summary of Main Issues - Protection



186 Figure 5.43: Summary of Protections Issues | By Author

Summary of Main Issues - Delight

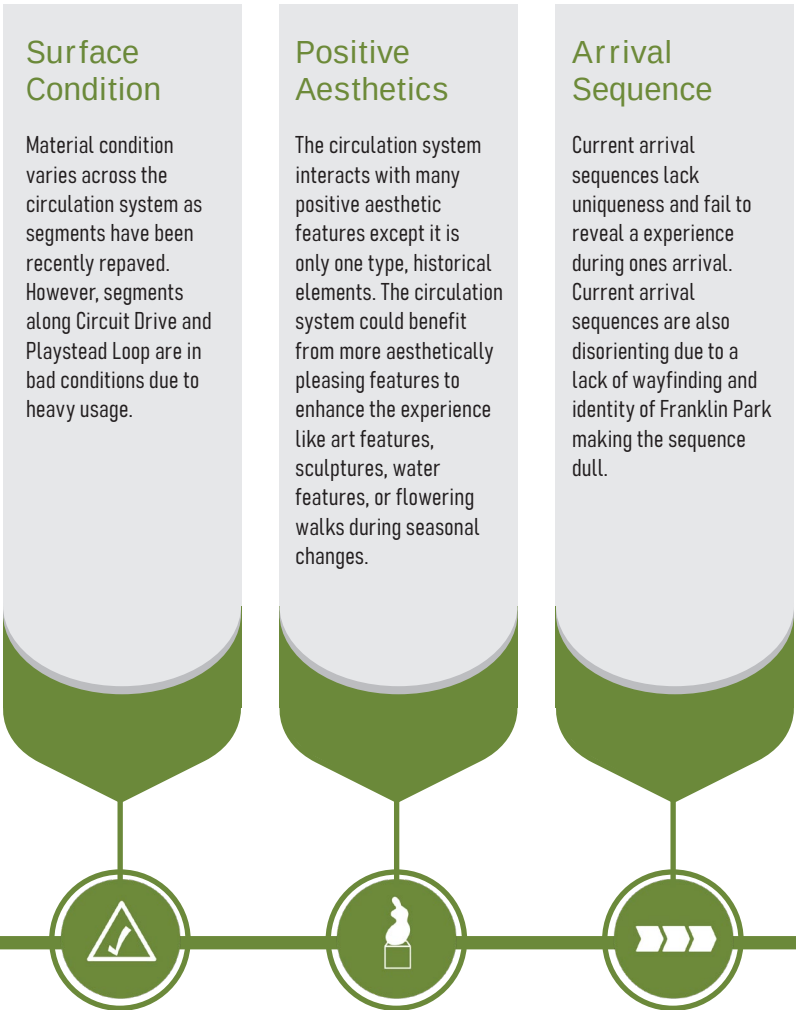


Figure 5.44: Summary of Delight Issues | By Author

Design Goals

A comprehensive set of design goals were derived from the synthesized findings of the site and non-vehicular user group analysis. The design goals for the projective design seek to improve the overall circulation experience for non-vehicular users and encompass specific quality and usability criteria.

Reconfigure Primary Circulation

The goal focuses on the reconfiguration of vehicular circulation within the current system and reconnect the primary loops.

Characteristics activated to achieve objective:

- Connectivity
- Vehicular Traffic
- Non-Vehicular Traffic
- Conflict Points

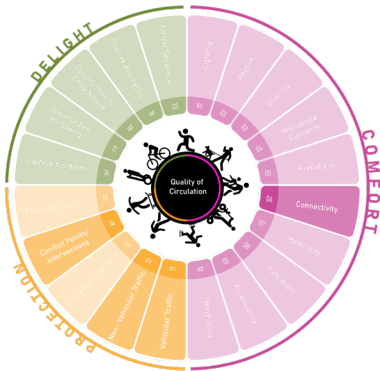


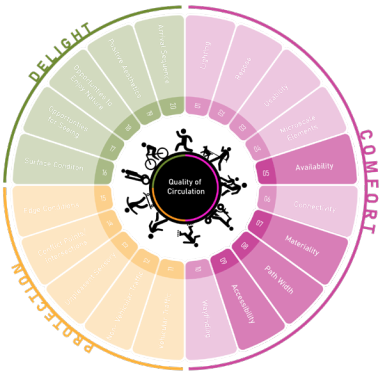
Figure 5.45: Design Goals | By Author

Simplify the Overall Circulation

The goal focuses on the clarity of the circulation system to reduce navigation confusion and increase cohesion.

Characteristics activated to achieve objective:

- Availability
- Materiality
- Path Width
- Accessibility
- Surface Condition

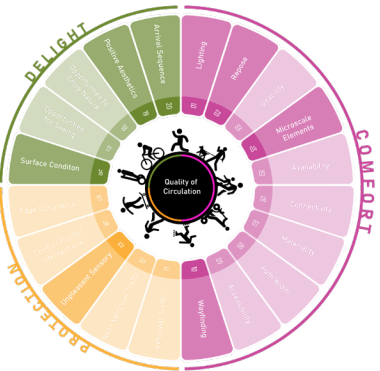


Enhance the Experience

The goal focuses on the overall improvement of experience for the non-vehicular user through the addition of comfort and delight features.

Characteristics activated to achieve objective:

- Lighting
- Repose
- Microscale Elements
- Wayfinding
- Unpleasant Sensory
- Positive Aesthetics
- Arrival Sequence





CHAPTER 06

Figure 6.1: Boston Common | By Unsplash User: Josephine Baran



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06

DESIGN APPLICATION

In this chapter, the design work presented is a manifestation of findings related to site and precedent analysis. Changes are proposed to the existing circulation system of Franklin through a series of design objectives to improve the quality and usability for non-vehicular users.

Design Goals to Projective Design

The design goals dervied from site and non-vehicular user group analysis were used to guide the projective design recommendations created for Franklin Park’s circulation system.

Reconfigure Primary Circulation

The goal focuses on the reconfiguration of vehicular circulation within the current system and reconnect the primary loops.

Characteristics activated to achieve objective:

- Connectivity
- Vehicular Traffic
- Non-Vehicular Traffic
- Conflict Points

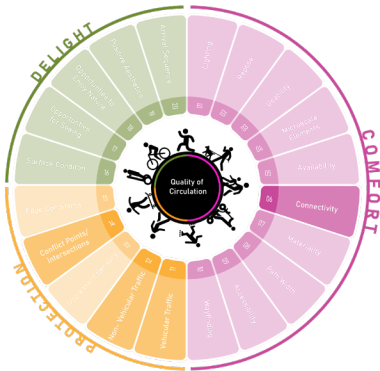


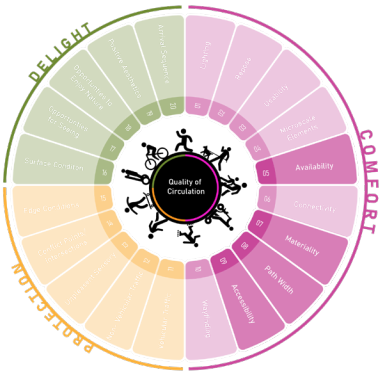
Figure 6.2: Design Goals | By Author

Simplify the Overall Circulation

The goal focuses on the clarity of the circulation system to reduce navigation confusion and increase cohesion.

Characteristics activated to achieve objective:

- Availability
- Materiality
- Path Width
- Accessibility
- Surface Condition

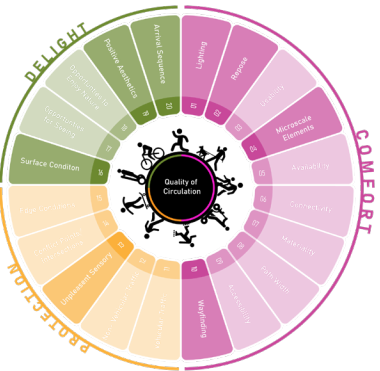


Enhance the Experience

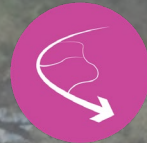
The goal focuses on the overall improvement of experience for the non-vehicular user through the addition of comfort and delight features.

Characteristics activated to achieve objective:

- Lighting
- Repose
- Microscale Elements
- Wayfinding
- Unpleasant Sensory
- Positive Aesthetics
- Arrival Sequence



Reconfigure Primary Circulation



Reroute Vehicular Traffic

Vehicular circulation within the park was rerouted to reduce the volume of vehicular users while still providing access to magnet spaces within Franklin Park. Currently, Circuit Drive inadvertently acts as a significant internal barrier, whereas the redesign promotes a cohesive and connected experience. The redesign disconnects vehicular infrastructure at the center of the park to prioritize the non-vehicular users' safety by limiting interaction between user groups. Ultimately, rerouting of vehicular traffic in the redesign stems from the primary goal of prioritizing non-vehicular users. Therefore, this design is a product of the major design move of reconnecting the multi-modal loops for non-vehicular users.

Note: Design move adopted from the Franklin Park Action Plan



Connectivity

Primary circulation infrastructure like Circuit Drive interrupts the park experience through a hazardous internal barrier disrupting circulation connections. Vehicular infrastructure interrupts non-vehicular infrastructure disconnecting the Playstead and Circuit Loops.

QOC. Characteristic Addressed

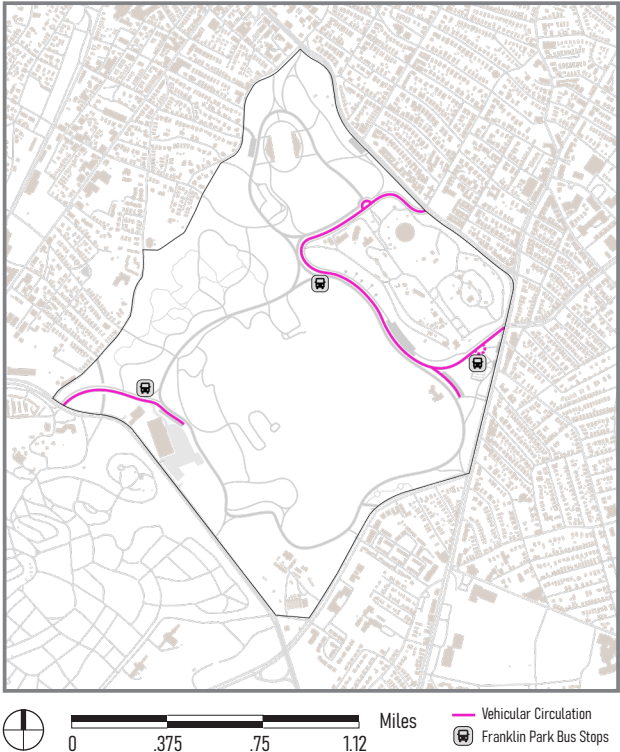


Figure 6.3: Proposed Vehicular Circulation | By Author

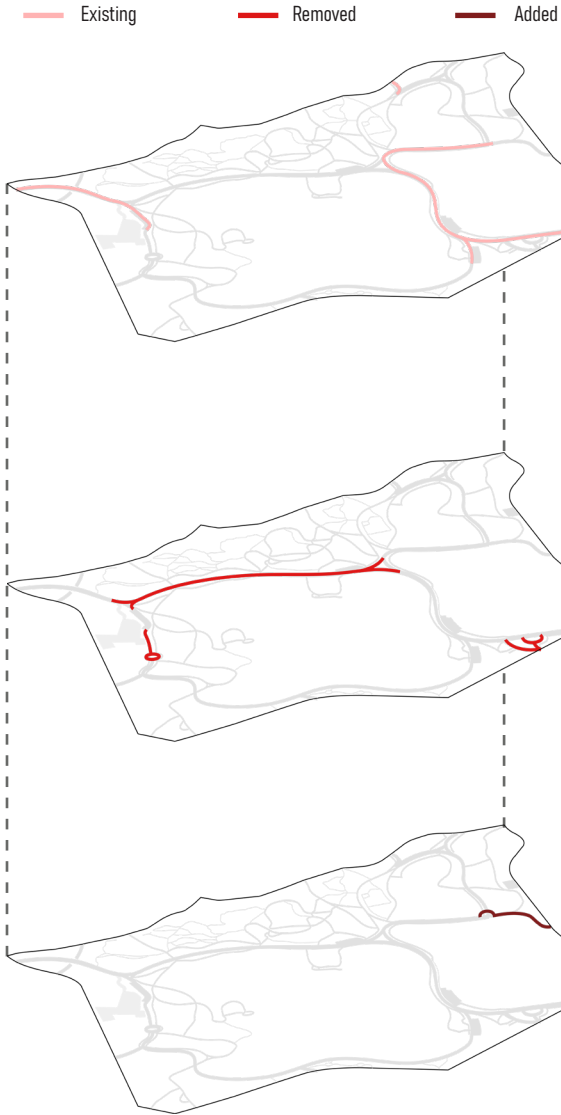


Figure 6.3.1: Vehicular Circulation Adjustments | By Author

Existing Kept

Infrastructure kept in the existing circulation system was the northern section of Circuit Drive, leading up to the Playstead, and the southern portion of Circuit Drive, leading to Shattuck Hospital and Ellicotdale. Vehicular infrastructure is still essential, so stretches were kept to allow access to primary internal destinations.

Existing Removed

A large stretch was removed from the existing vehicular circulation at the park's center. The intention is to remove the internal barrier it intentionally acted as and restore a safe and cohesive park connection. Removal of the highlighted stretch eliminates pass-through travel but allows access to park visitors.

Added Infrastructure

A small stretch of the existing circulation was changed from pedestrian to vehicular to create a continuous loop around the park's northern sector. At the end of the existing vehicular circulation in the Playstead, a half-circle was installed for vehicles to turn around if they passed their intended destination.

Reconfiguration of Circuit Drive

In addition to the rerouting of Circuit Drive, the vehicular corridor received a road diet to reduce vehicular issues like volume, speed, and create room for a large buffer between user groups. The road diet removed the unnecessary parallel parking along the entirety of the road and relocated bike lanes onto the reconnected Circuit Loop adjacent to Circuit Drive. Therefore, the new Circuit Drive is a strict two-lane, 22' roadway reduced from its current 40'. Additionally, any pedestrian connections across the vehicular corridor are paired with traffic calming devices like speed tables to decrease speed and create a safe crossing. The goal of the reconfiguration was to provide adequate separation from vehicular users, which was a significant concern revealed in the background research.



Vehicular Traffic

Non-vehicular users have varying degrees of interaction with vehicles. Cyclists have bike lanes, but the current configuration creates constant conflict because the bike lane separates moving and parked cars. Pedestrians have a buffer with planting and stone bollards. Reconfiguration and road diet of Circuit Drive can be beneficial to reduce vehicular volume, speed, and provide adequate operating space and protection for non-vehicular users.

QOC. Characteristic Addressed

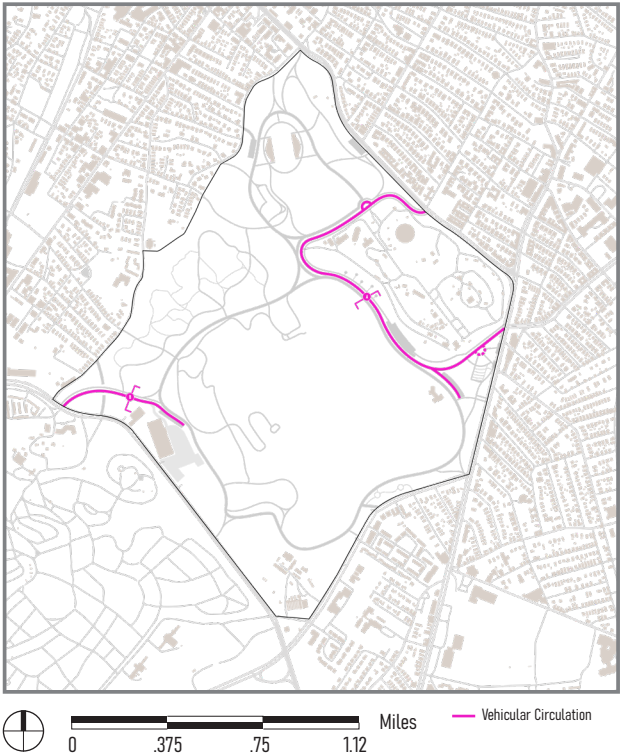


Figure 6.4: Proposed Vehicular Circulation Section Cuts | By Author

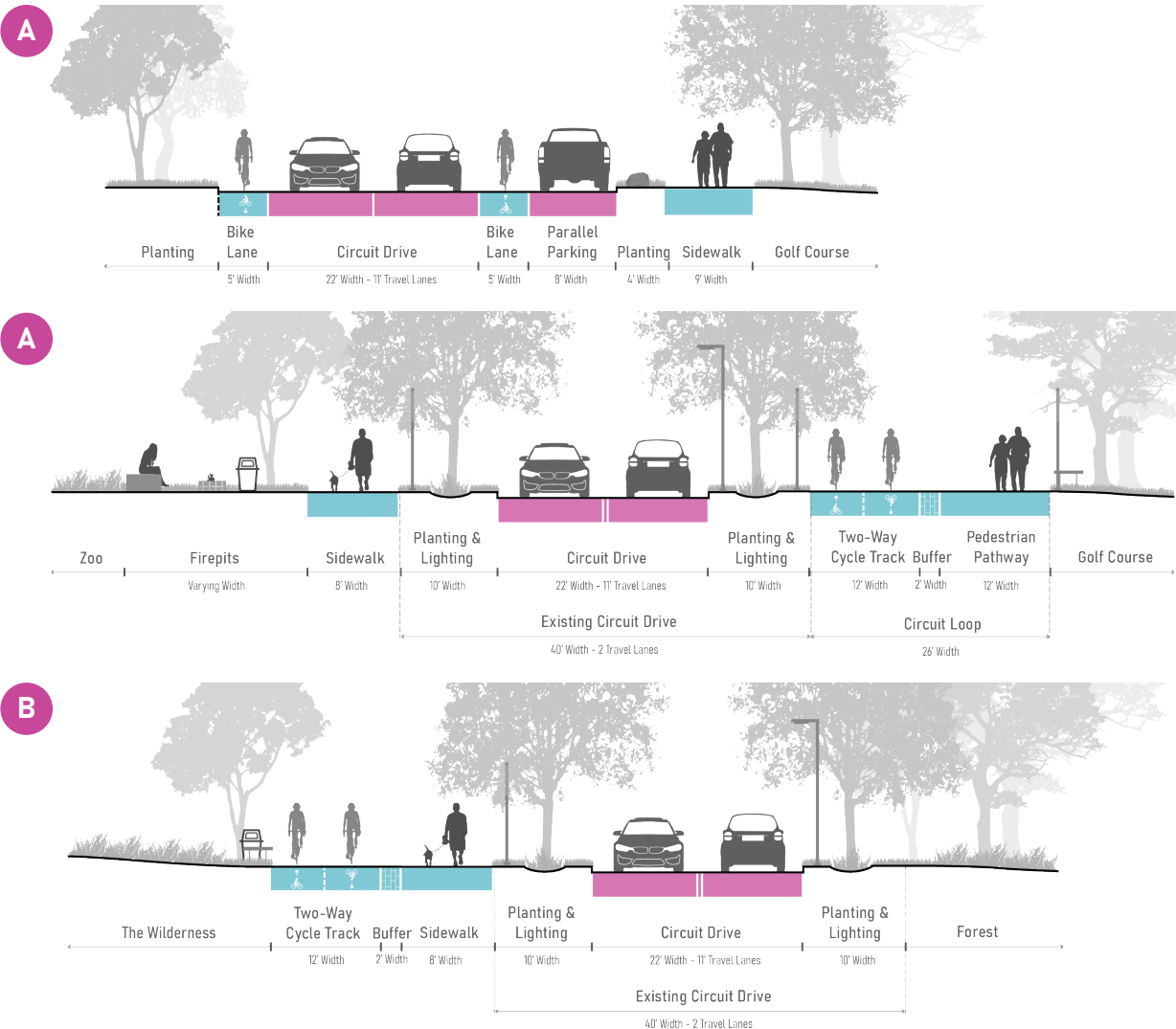


Figure 6.4.1: Circuit Drive Reconfiguration Sections | By Author

Adjust Vehicular Parking

Vehicular infrastructure is still essential and will continue to be a common way for park visitors to access Franklin Park. Therefore, various parking lots are still needed in the redesign of the circulation system. A total of five parking lots are present, and current parallel parking was significantly reduced and consolidated into one of the five parking areas. The new parking areas are intentionally located adjacent to major park programs for easy access. These new parking lots are paved and reconfigured into formal parking lots, not unpaved and unregulated as in their current state. Additionally, parking lots serve as an extension of the park as they are outfitted with planting to start the park experience once the car is parked.



Vehicular Traffic

QOC. Characteristic Addressed

Vehicular infrastructure, specifically parking lots, is prevalent along all vehicular corridors. There is parallel parking along the entirety of Circuit Drive and formal and informal parking areas around program areas and the zoo. However, the designated areas for parking are seas of pavement, lacking a sense of arrival, disrupting the cohesion of the park.

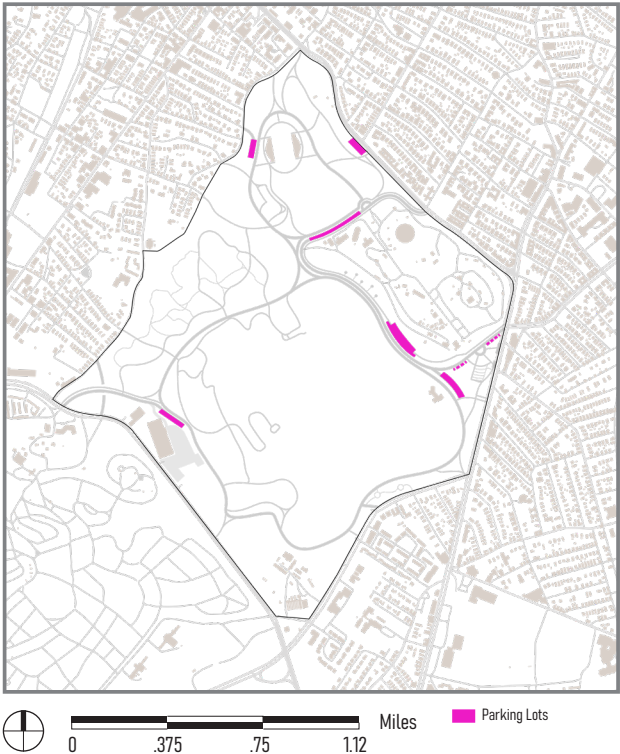


Figure 6.5: Proposed Parking Lots | By Author



Figure 6.5.1: Parking Adjustments | By Author

Existing Kept

A total of five out of the existing six were kept in the redesign of vehicular circulation. However, kept parking lots were reconfigured and redesigned from their current state to serve as an extension of the park.

Existing Removed

In the redesign, one out of the six parking lots was removed due to the rerouting of Circuit Drive, making it inaccessible. Additionally, parallel parking was also removed due to the road diet of Circuit Drive and consolidated within the new parking lots.

Added Infrastructure

A small stretch of parallel parking was added onto the north loop of Circuit Drive adjacent to the main greeting space, Peabody Circle. The addition of parallel parking adjacent to Peabody Circle is because the space lacks a designated parking area nearby.

Reinstate Continuous Loops

Reconnecting the primary pedestrian circulation systems, specifically the Playstead and Circuit Loops, is the most significant design change in redesigning Franklin Park's circulation system. This design move is enabled through the rerouting of Circuit Drive, allowing Circuit Loop to become a continuous and cohesive multi-modal loop. For the Playstead Loop, a continuous and cohesive loop was reinstated by reconfiguring both parking lots serving the Playstead. The continuous loops make the magnet spaces more accessible from anywhere within Franklin Park. As referenced earlier, this design move is the primary design change to obtain the goal of prioritizing non-vehicular users.

Note: Design move adopted from the Franklin Park Action Plan



Connectivity

Primary circulation infrastructure like Circuit Drive interrupts the overall park experience for non-vehicular users by bisecting the primary pedestrian systems. With vehicular infrastructure bisecting the non-vehicular infrastructure, it fragments the primary circulation, specifically the Playstead and Circuit Loops.

QOC. Characteristic Addressed



Figure 6.6: Proposed Continuous Loops | By Author



Figure 6.6.1: Primary Loop Adjustments | By Author

Existing Kept

Large stretches of both the Playstead and Circuit Loops were kept because those stretches were already reserved for pedestrian use only. However, the highlighted stretches kept were altered to accommodate the design changes derived from the reconfiguration of Circuit Drive.

Existing Removed

There are long stretches on both primary loops that were removed. However, the highlighted areas are not currently recognized as part of any loops. Instead, the highlighted areas removed existing vehicular infrastructure or pedestrian conditions to accommodate the new loops.

Added Infrastructure

The added stretches are the infrastructure that was added or replaced segments that were removed to complete the continuous multi-modal loops. In Circuit Loop, vehicular infrastructure was replaced with pedestrian infrastructure. The Playstead Loop implemented a new segment to create a continuous loop uninterrupted by vehicular infrastructure.

Create Clear Separation

Both multi-modal pathways, Playstead and Circuit Loop, were reconfigured to separate user groups, specifically between cyclists and pedestrians. Divisions between user groups were needed as the background research revealed that a significant portion of feeling safe or protected is provided by having dedicated lanes due to travel speeds. Therefore, due to the width of the multi-modal loops, a cobblestone dividing line was implemented to create a clear division between the user groups. The dividing line defines the sidewalk's edge for pedestrians and the two-way cycle track. This intervention increased the feeling of safety or protection for all user groups using the new circulation system.



Non-Vehicular Traffic

Vehicular infrastructure, specifically parking lots, is prevalent along all vehicular corridors. There is parallel parking along the entirety of Circuit Drive and formal and informal parking areas around program areas and the zoo. However, the designated areas for parking are seas of pavement, lacking a sense of arrival, disrupting the cohesion of the park.

QOC. Characteristic Addressed

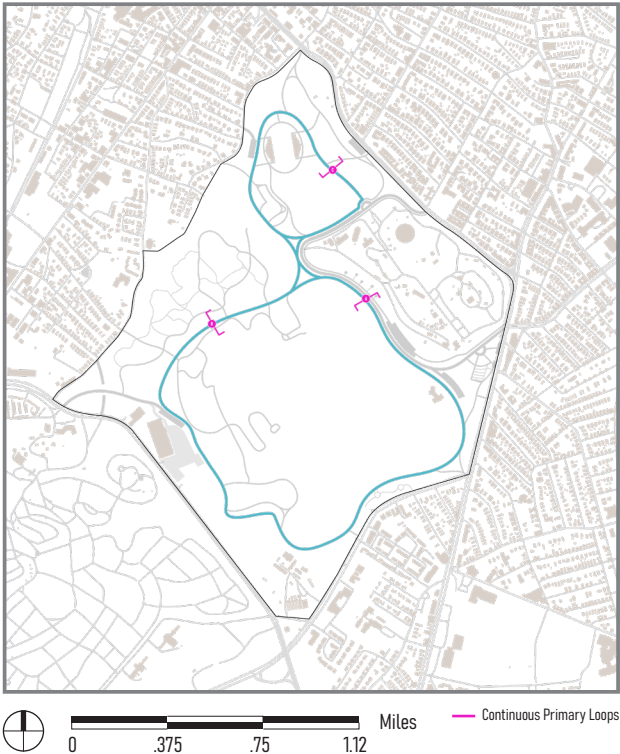


Figure 6.7: Proposed Primary Loops Section Cuts | By Author

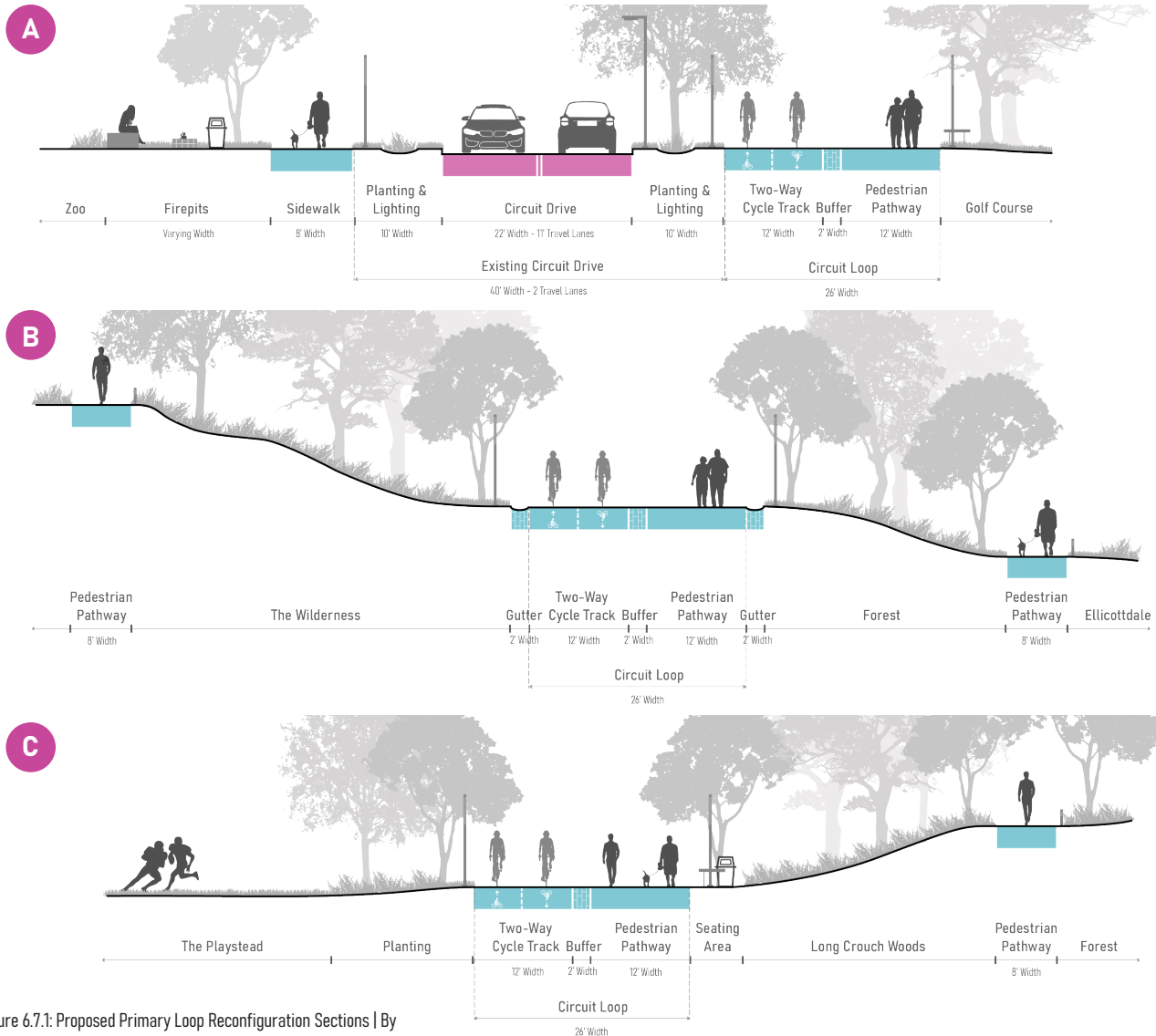


Figure 6.7.1: Proposed Primary Loop Reconfiguration Sections | By

Reconfigure Critical Intersections

Three critical nodes were identified in site analysis and were redesigned due to the reconfiguration of primary circulation systems like Circuit Drive and both primary loops. The northern intersection is Peabody Circle. It was reconfigured from a circulation space into a formalized greeting space, ultimately simplifying vehicular circulation. The Valley Gates and Shattuck Hospital intersections were simplified due to the rerouting of Circuit Drive, ultimately limiting the direction of travel. New non-vehicular connections were installed, paired with areas of repose for those using the multi-modal loops.

Note: Peabody Circle intersection adopted from the Franklin Park Action Plan

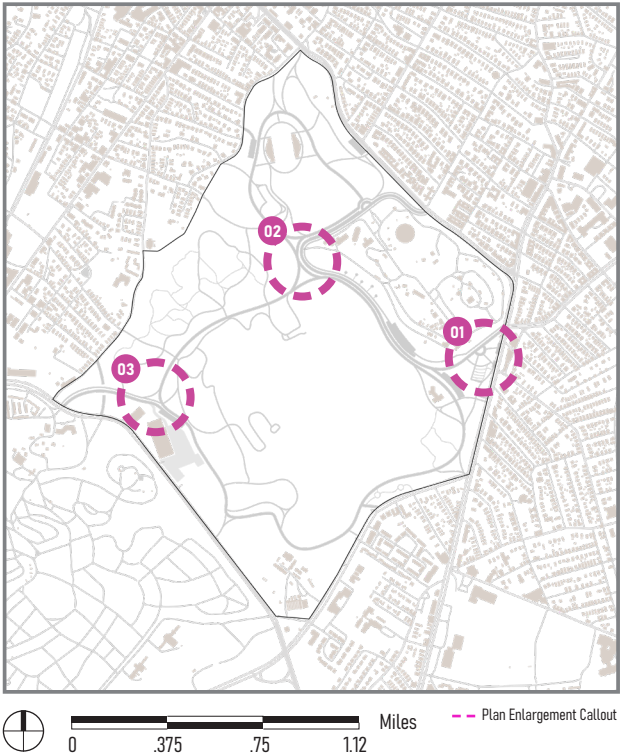


Figure 6.8: Critical Intersections | By Author



Intersections/Conflict Points

QOC. Characteristic Addressed

There are three critical intersections along Circuit Drive, the primary vehicular corridor. At these nodes, multiple modes meet, creating an unclear direction for vehicular and non-vehicular users. Intersections should be simplified to clarify and reduce the number of conflict points for all users.

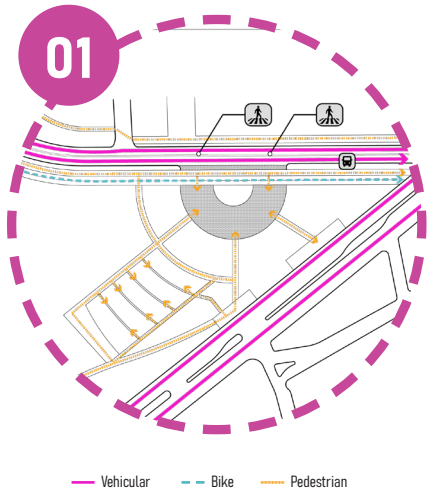


Figure 6.8.1: Proposed Peabody Circle Intersection | By Author

→ Peabody Circle was a greeting space transformed into a circulation space, where the reconfiguration reverts the main entry to a greeting space. Primary alterations involved the removal of unnecessary vehicular infrastructure and replacing it with pedestrian infrastructure.

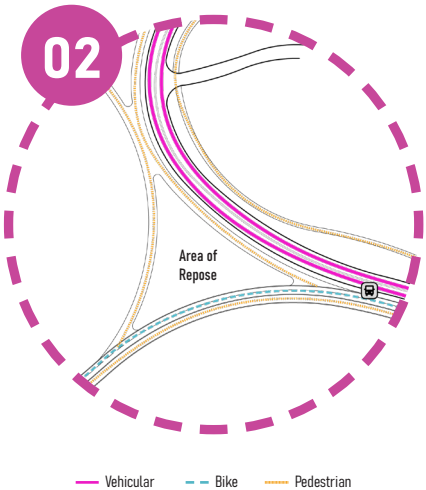


Figure 6.8.2: Proposed Valley Gates Intersection | By Author

→ Valley Gates intersection in the reconfiguration removed vehicular infrastructure on two out of its three edges due to the removal of the central segment of Circuit Drive. Removed infrastructure was retrofitted with pedestrian infrastructure like Circuit Loop and connecting segments between Circuit and Playstead Loop.

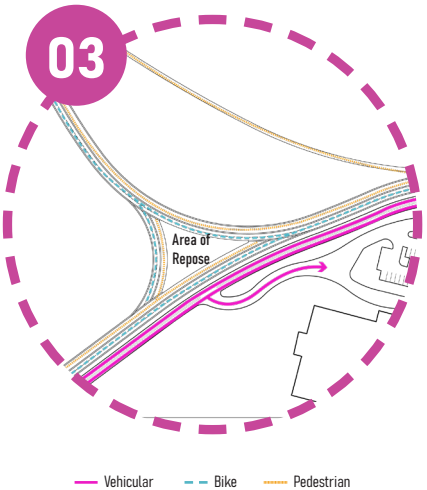


Figure 6.8.3: Proposed Shattuck Intersection | By Author

→ The Shattuck Hospital intersection also removed a majority of vehicular infrastructure due to the disconnect of Circuit Drive. Like Valley Gates, vehicular infrastructure was replaced with pedestrian infrastructure like Circuit Loop.

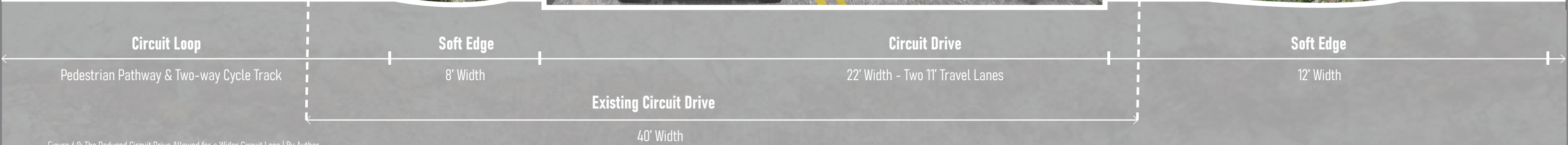


Figure 6.9: The Reduced Circuit Drive Allowed for a Wider Circuit Loop | By Author

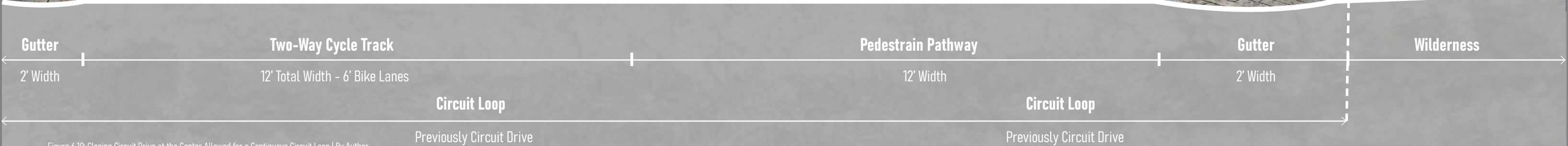


Figure 6.10: Closing Circuit Drive at the Center Allowed for a Continuous Circuit Loop | By Author

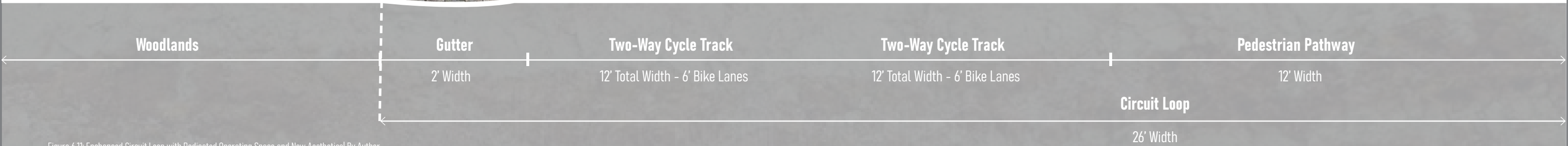


Figure 6.11: Enhanced Circuit Loop with Dedicated Operating Space and New Aesthetics| By Author

Simplify the Overall Circulation



Simplify Secondary Path Network

The secondary path and trail network is currently complicated by duplicated paths leading users to dead-ends or unexpected destinations. In the redesign, the secondary network was clarified by removing redundancy and adding pathways to create a system that operates off a series of smaller loops off the park's primary loops. Secondary loops were used to create a constantly changing experience leading visitors to areas of interest of high or low points within the park. Significant simplification in the circulation network occurred in the Wilderness. Various trails were removed to create a transparent loop system with trails for adventurous users and prevent further division of the Wilderness.

Note: Playstead simplification design was adopted from the Franklin Park Action Plan



Availability

A plethora of infrastructure is available to bikes and pedestrians; however, the current system sees many redundancies, ultimately creating a confusing secondary network of pathways. The secondary network does not work off a loop system creating navigation confusion for non-vehicular users.

QOC. Characteristic Addressed

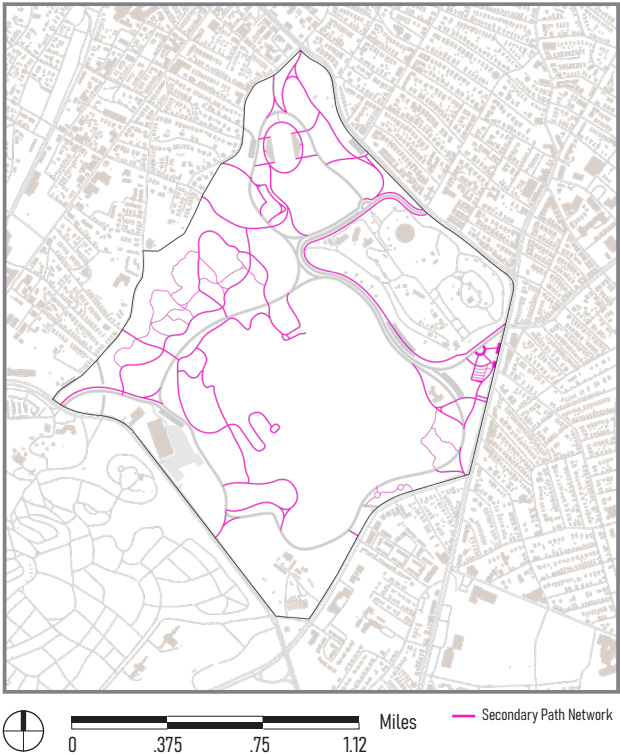
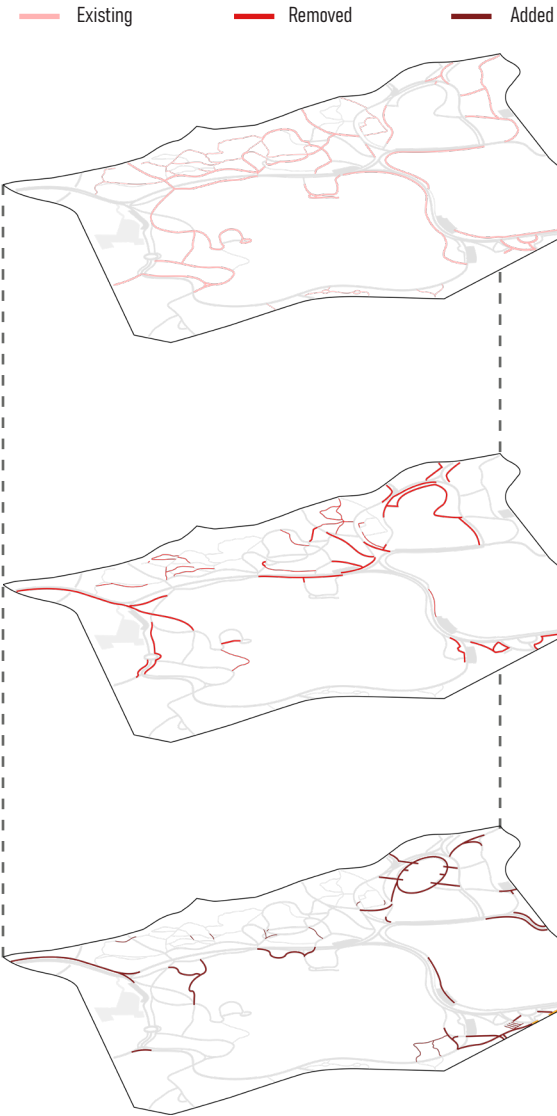


Figure 6.12: Proposed Secondary Path Network | By Author



Existing Kept

Various segments and pathways were retained in the simplification of the secondary network. Most kept segments informed of the removing or adding of segments or paths, as these acted as the base for the developed loop system.

Existing Removed

Removal of pathways or segments stemmed from redundancies found. Most redundancies were identified by existing or past vehicular entrances or systems. They were removed and reduced to a singular path. Additionally, many segments were removed in the Wilderness to simplify the space's network and clearly define the new loop system.

Added Infrastructure

Most added infrastructure occurred around the entrances of magnet spaces. Notably, circulation around White Stadium was transformed into a continuous loop with multiple paths aligning with entries. Peabody Circle and Ellicottdale received additional pathways to enhance circulation within their respective space.

Figure 6.12.1: Secondary Network Adjustments | By Author

Redefine Hierarchy of Pathways

In the current system, there are a variety of path widths and instances of a singular path changing in width, enhancing the already nonintuitive and confusing network. Therefore, the existing system has lost its path hierarchy. The redesign redefines and installs a redefined pathway hierarchy and consistent path width across the circulation system. By establishing a hierarchy, exploring Franklin Park became a more intuitive and enjoyable experience for non-vehicular user groups. Additionally, the new hierarchy system applied the appropriate scale to specific areas regarding use within the new circulation system.



Dimensionality

Pathway dimensions vary across the circulation system, creating a loss of hierarchy and visual connection, and are inappropriately scaled. Pathways should be adjusted to appropriate sizes and scales to reduce pathway types and reinstate a strong hierarchy.

QOC. Characteristic Addressed

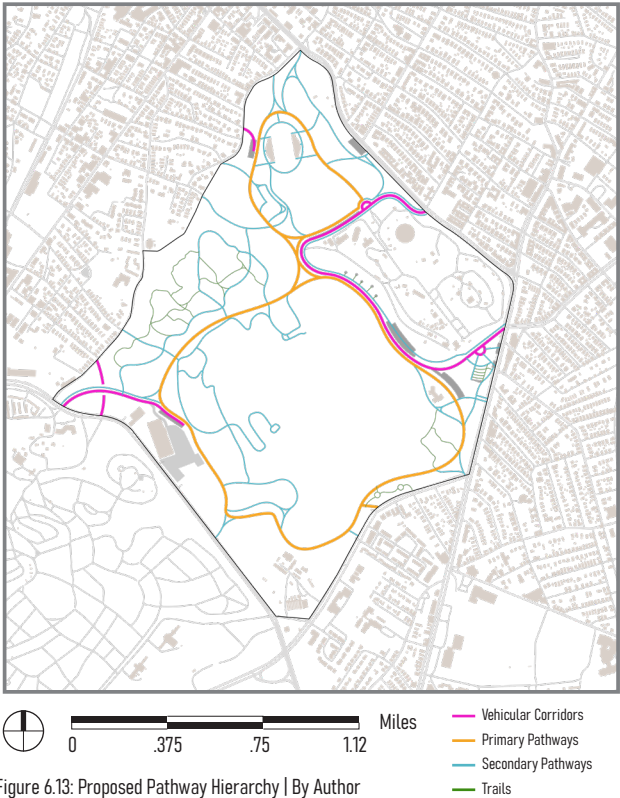


Figure 6.13: Proposed Pathway Hierarchy | By Author

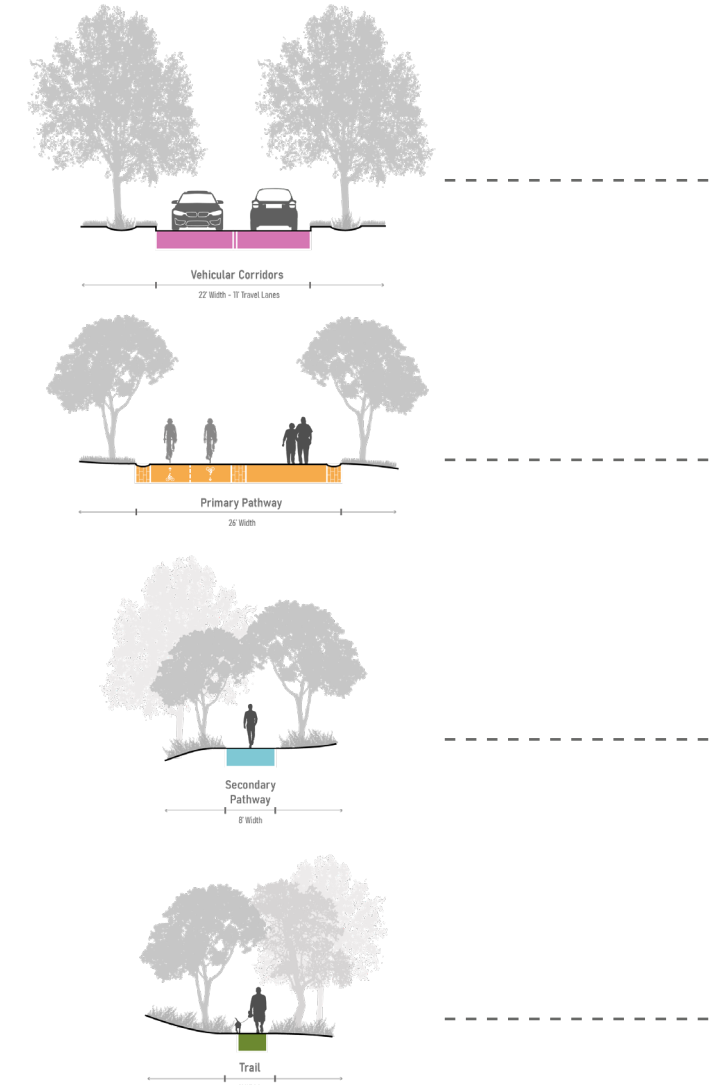


Figure 6.13.1: Proposed Pathway Hierarchies | By Author

Vehicular Corridors

Vehicular corridors are the largest pathways in the new circulation system. These corridors have two eleven-foot traffic lanes for a total of twenty-two feet wide. This width is consistent throughout the entirety of all vehicular corridors.

Primary Pathways

The primary pathways consist of two primary systems: Playstead and Circuit Loops. These loops are twenty-six feet wide and are divided into dedicated spaces for pedestrians and cyclists throughout their entirety.

Secondary Pathways

Secondary paths are prominent in the new circulation system. These eight-foot wide pathways branch off the primary loops, leading users to park destinations or high and low elevations.

Woodland Trails

Woodland trails are mostly constrained to the Wilderness within the new circulation system. These four-foot wide trails branch off the secondary pathways, allowing for a more profound exploration experience.

Removal of Internal Barriers

The current circulation system has many internal barriers like fences, gates, walls, and granite bollards along primary systems. Due to the significant presence, the feel of the current system has a keep-out feel rather than welcome in. The redesign removed fences and hard barriers between the public park and private entities to create a cohesive connection to adjacent spaces through views or physical links. Some barriers needed to be kept, specifically the fences around the Franklin Park Zoo and Shattuck Hospital. However, the barriers were hidden within dense vegetation. Therefore, a soft edge rather than a hard defining line would be seen.



Accessibility

Many internal barriers create a sense of security and keep-out feeling, reducing the comfort and welcoming experience. Removal of internal barriers can help with increased welcoming and cohesive park experience

QOC. Characteristic Addressed

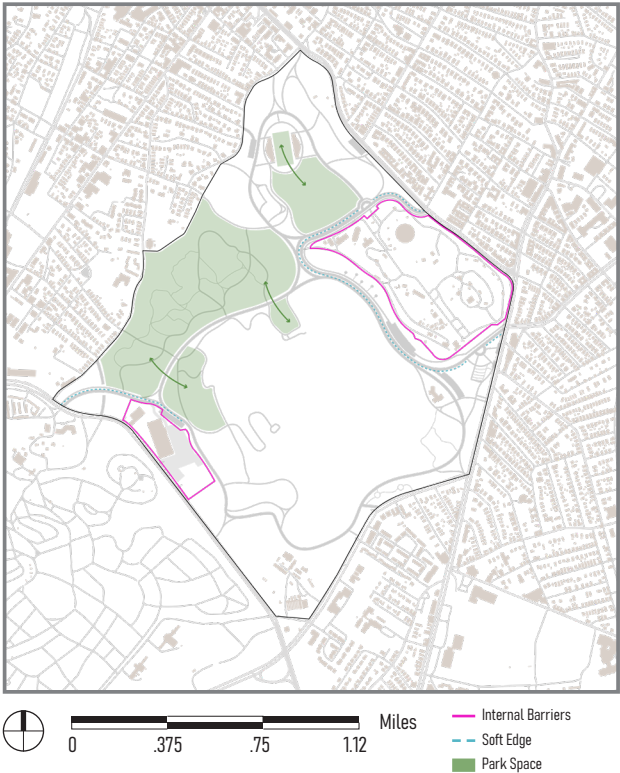


Figure 6.14: Proposed Internal Barriers | By Author

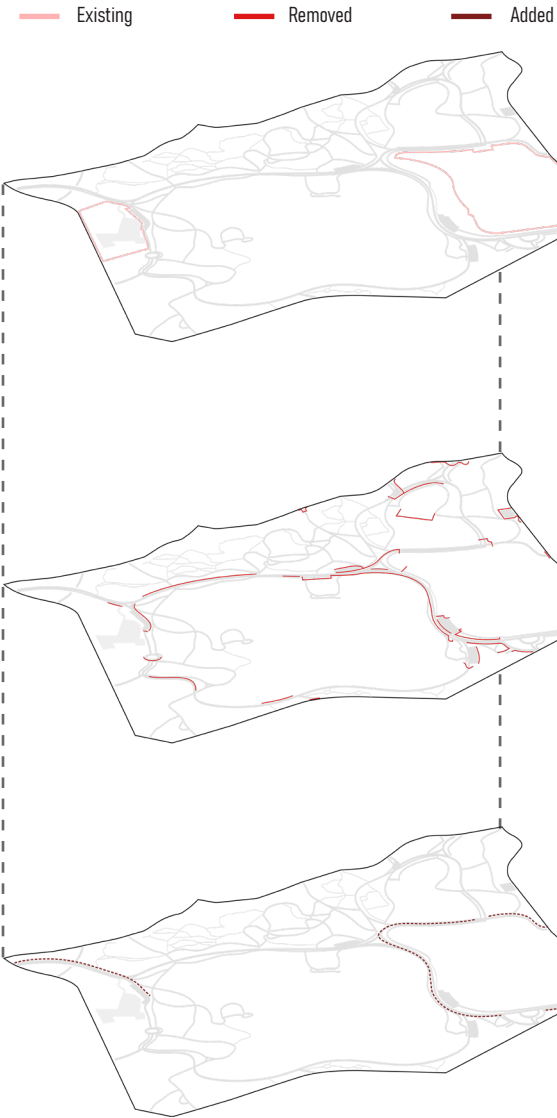


Figure 6.14.1: Internal Barrier Adjustments | By Author

Existing Kept

Only two barriers were kept due to the nature of the private entity. Therefore, the fences around the Franklin Park Zoo and Shattuck Hospital were retained. However, the nature of those barriers changed as instead of seeing a harsh line; they were contained within dense vegetation, creating a softer edge.

Existing Removed

Most internal barriers were removed that were identified along the circulation system. The barriers removed were fences, security gates, and stone bollards. Eliminating these barriers created a cohesive connection between adjacent spaces, improving the overall circulation experience for non-vehicular users.

Added Infrastructure

The character of barriers was changed in instances of them being needed. Therefore, soft barriers were created and installed along vehicular corridors to provide a protective layer between user groups while blending in with the contextual aesthetic. These soft barriers included tree and native plantings within the allotted buffer between infrastructure.

Materiality

The existing circulation system has paths varying in paving materials, but not all are in good condition. Materiality in the new circulation system proposed cohesive paving materials and improvements to surface condition. Paving materials were assigned to pathway hierarchies defined previously based on the intended function and predicted usage. Paving material assigned to a pathway hierarchy was maintained throughout to make the circulation system become an intuitive and enjoyable experience for all user groups. Additionally, surface conditions were addressed through repaving segments of the circulation system discovered in site analysis.



Materiality

Various materials are used across the circulation system, creating confusion. A cohesive paving aesthetic paired with intention can enhance overall comfort and reduce confusion for all user groups.

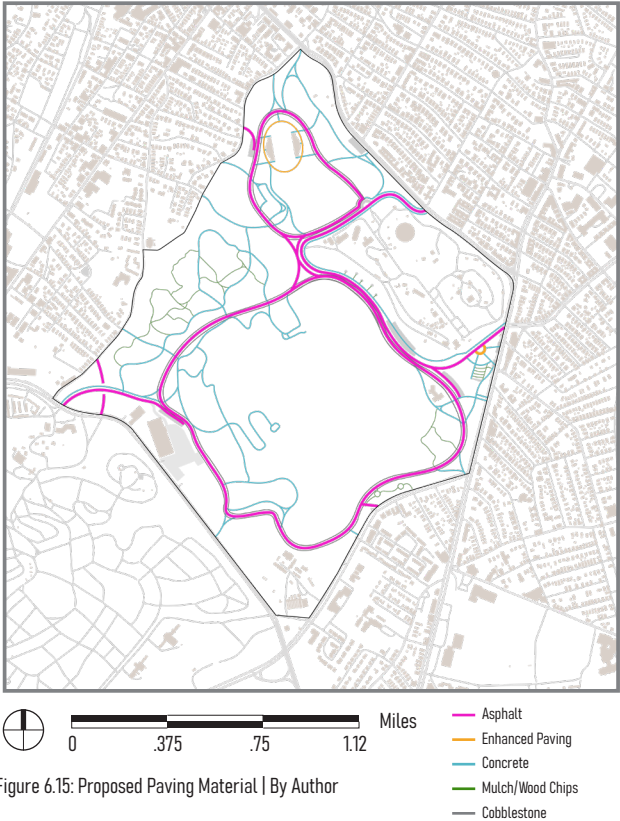
QOC. Characteristic Addressed



Surface Condition

Material condition varies across the circulation system as segments have been recently repaved. However, segments along Circuit Drive and Playstead Loop are in bad conditions due to heavy usage

QOC. Characteristic Addressed



Asphalt with Cobblestone Accent

Asphalt was used for primary systems like Circuit and Playstead loops. The asphalt was accented with cobblestone on the edges and embedded into the asphalt to designate pedestrian and cyclist infrastructure.



Concrete

Concrete was used within the secondary path network. It was chosen for its lighter color to distinguish secondary pathways and be highlighted as it crossed the primary systems to designate intersections or connection points.



Enhanced Paving

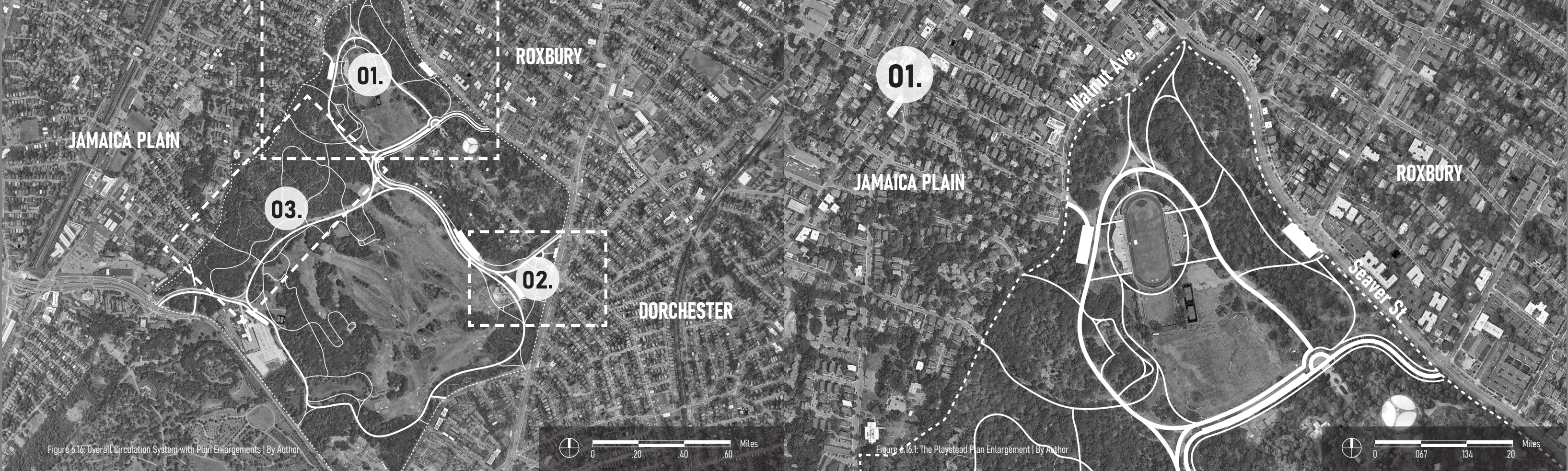
Enhanced paving consisted of a mixed color palette of concrete pavers used around or within areas of high interest or interaction. The varied nature of the paving is meant to distinguish the space from the circulation system.



Mulch/Wood Chips

Mulch/wood chips were used for the trails within the Wilderness. Due to them being within the dense forest, an unpaved material was chosen to minimize disturbance and fit within the surrounding context.

Figure 6.15.1: Proposed Paving Materials | By Author



Above is the plan for the new circulation system, a result of simplification by adding or removing redundant pathways. Plan enlargements follow this plan to show nuanced changes within the magnet spaces of Franklin Park.



Availability is the primary characteristic addressed within the following plans. Changes included removing or adding specific pathways to reduce redundancies to create a simple loop system breaking from the primary loops.

In the Playstead, significant changes occurred around White Stadium, creating a continuous loop around the stadium while adding multiple connections to the Playstead loop. Additionally, throughout the Playstead, various pathways

were added or adjusted to connect to mini-magnet spaces or entries to the Playstead loop. Many changes in the Playsteads were removing redundant paths and reconnecting the primary multi-modal loop servicing the magnet space.



Figure 6.16.2: Peabody Circle Plan Enlargement | By Author

Peabody Circle had significant changes to both its circulation and function. Once a greeting space transformed into a circulation space, the proposed reconfigures circulation to reintroduce the greeting function by introducing

pedestrian and reducing vehicular infrastructure. Additionally, the staircases along Blue Hills Ave. were restored and became a secondary entrance providing the Dorchester neighborhood with access to Peabody Circle or Circuit Loop.



Figure 6.16.3: The Wilderness Plan Enlargement | By Author

The Wilderness circulation system was significantly simplified due to the types and amount of pathways used. The current system had no clear direction or loop systems which the new circulation system proposes. Various paths

and trails were removed or transformed into different types to create a variety of cohesive loops. The new system retrofits the existing system, and removed pathways were a part of the reforestation of the Wilderness.

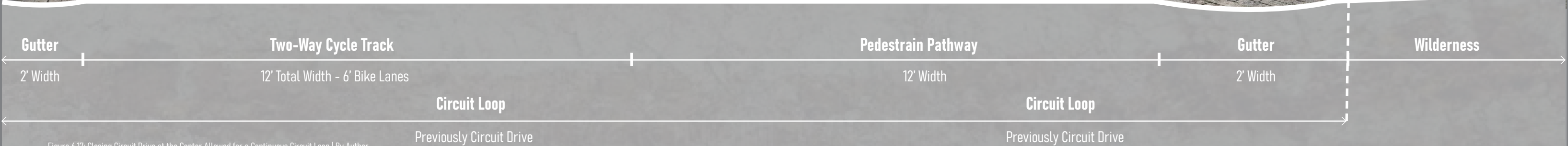


Figure 6.17: Closing Circuit Drive at the Center Allowed for a Continuous Circuit Loop | By Author

Enhance the Experience



Expand Lighting Service

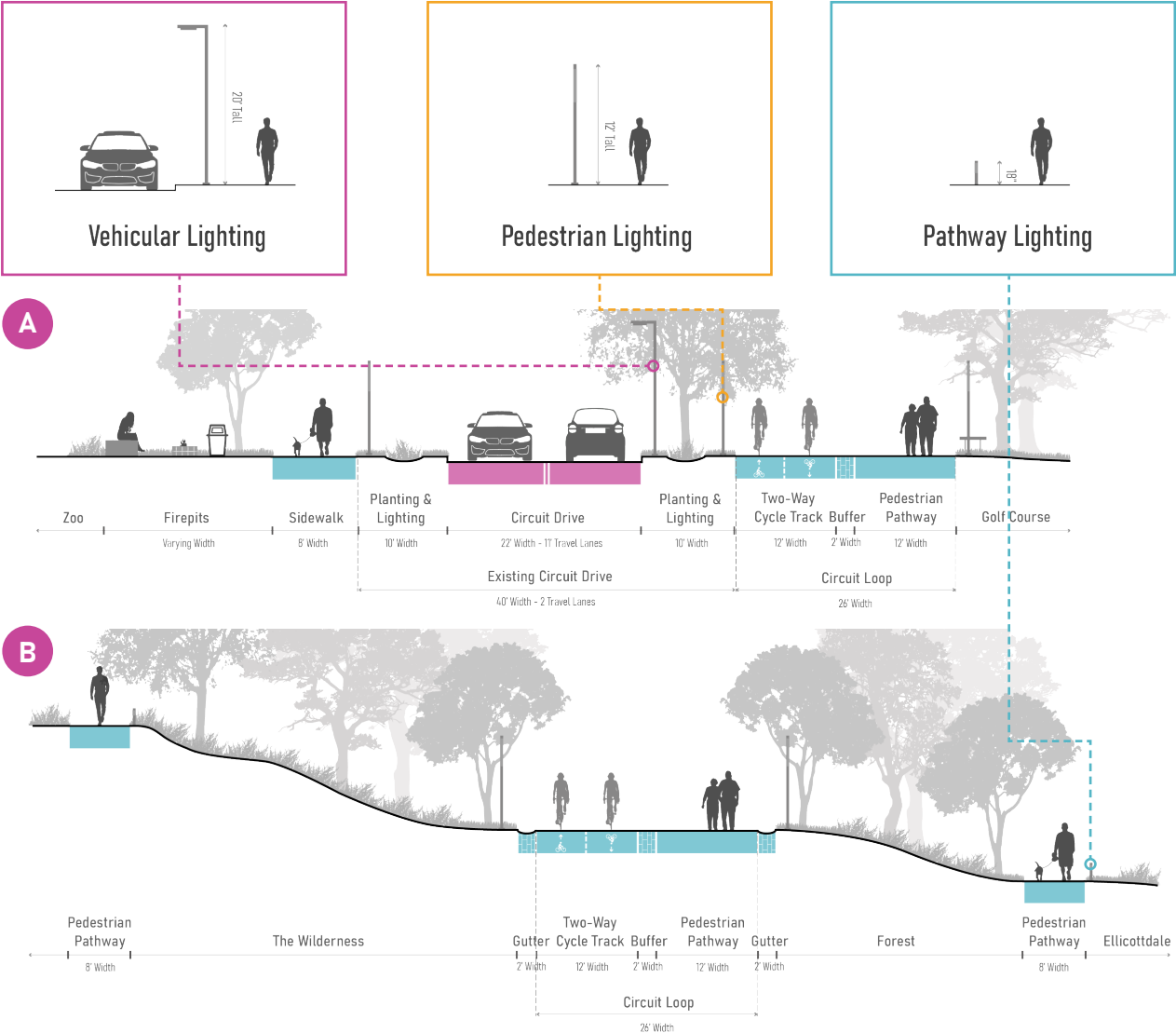
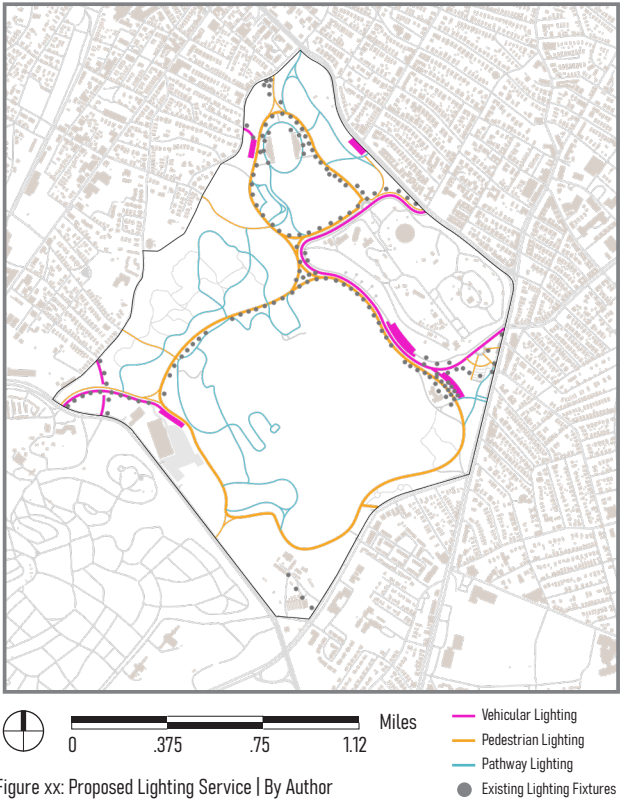
Lighting is inconsistent or absent along key stretches or areas of the current circulation system, facilitating safety concerns for non-vehicular user groups during evening and night hours. The new circulation system expands lighting service to other park spaces other than just along vehicular corridors. Additionally, lighting typologies were developed to provide the basic service the pathway needed based on its defined hierarchy. Therefore, the lighting typologies are scaled to varying heights. The lighting fixtures enhance the sense of security and guide circulation routes, improving the circulation quality for non-vehicular users at night.



Lighting

Lighting service is inconsistent across the circulation, with multiple types creating a need for consistent service to increase evening and night use.

QOC. Characteristic Addressed



Revamp Arrival Experience

The current arrival sequence Franklin Park facilitates in next to nothing due to a lack of entry signage, visual interest, or unique entry experience. The redesign aims to enhance delight into the arrival sequence by providing various aesthetic features. The sequence will begin with park signage denoting arrival and providing orientation information. Every entry will be outfitted with one of the developed typologies determined by the entries hierarchy. Second in the sequence for primary vehicular and pedestrian entrances, aesthetic elements like water features or sculptures will be placed to draw users on the edge into the park. Throughout the sequence, planting enhances the experience through tree planting or clearing to provide views from the edge into the park or subtly unveil characteristics of the park.



Arrival Sequence

Current arrival sequences lack uniqueness and fail to reveal an experience during one's arrival. Existing arrival sequences are also disorienting due to a lack of wayfinding and identity of Franklin Park, making the arrival sequence dull.

QOC. Characteristic Addressed

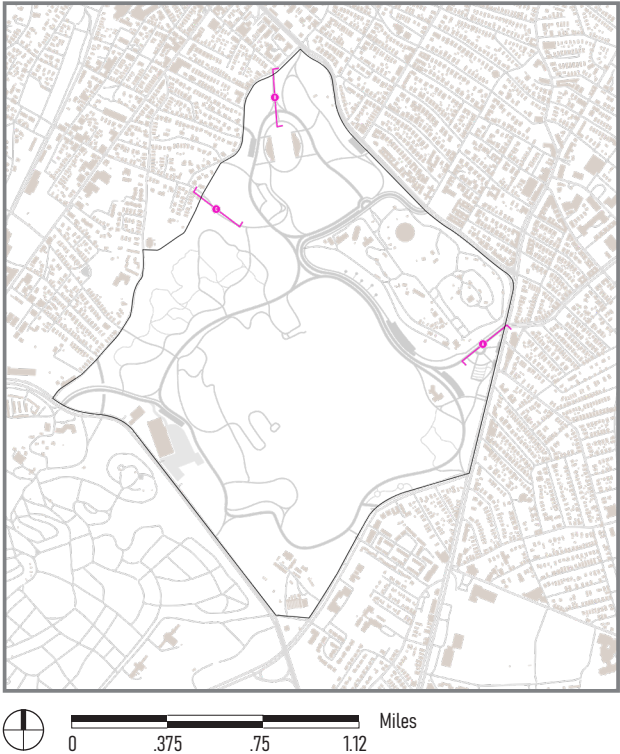


Figure 6.19: Proposed Arrival Sequence Section Cuts | By Author

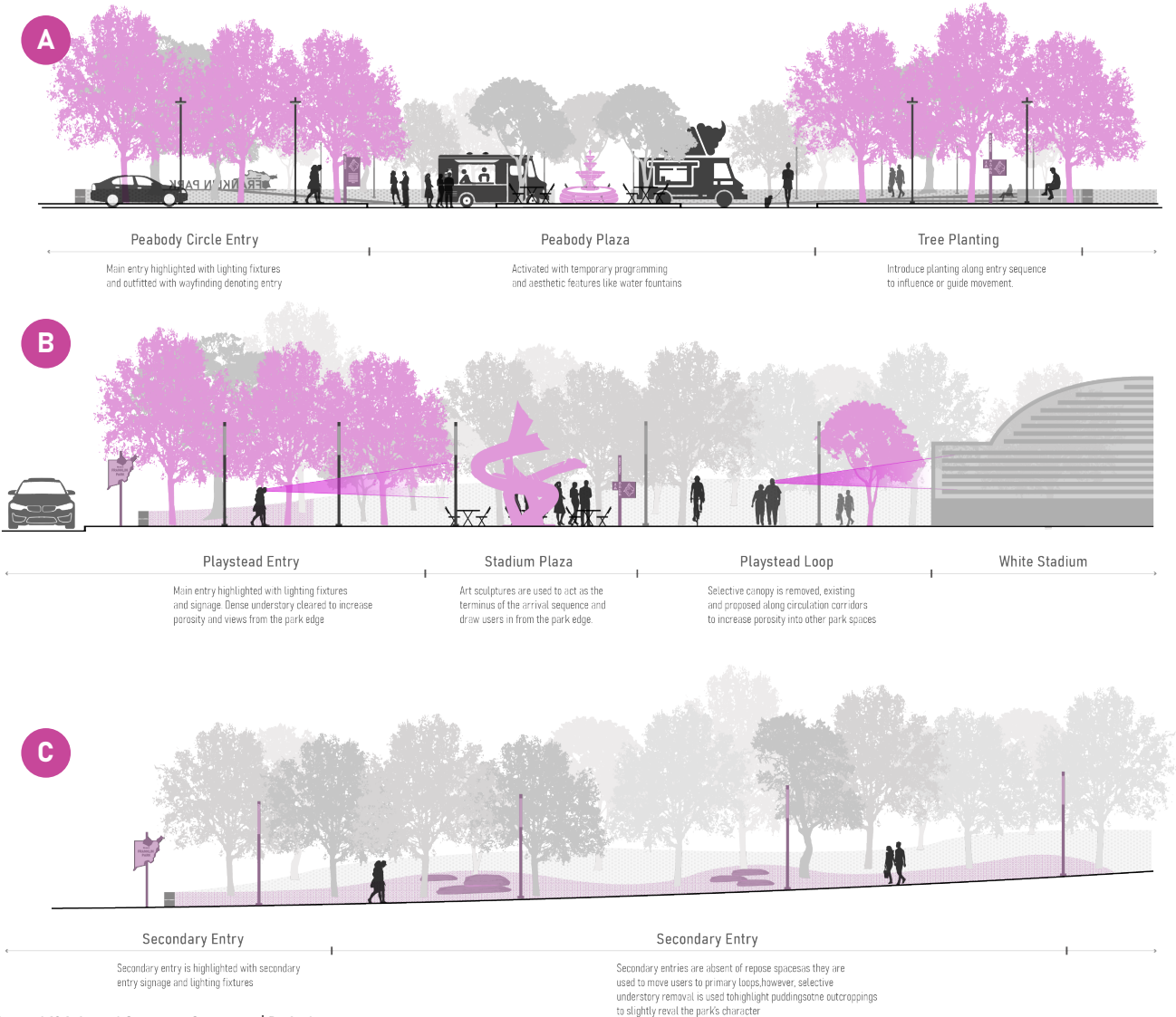


Figure 6.19.1: Arrival Sequence Strategies | By Author

Distribute and Add Basic Needs

In the current circulation system, basic needs or microscale features were not evenly and intentionally placed. For a circulation system to be comfortable, basic amenities must be provided and upgraded to support the use and activity in all seasons. Most notably, the current system lacked restrooms and shelters, which are essential due to the overall size of the park. The redesign implements two multi-purpose shelters containing restrooms, equipment rentals, or shade for circulation users. Additionally, microscale features like trash receptacles and water fountains were added and removed to be intentionally and equally distributed throughout the network.

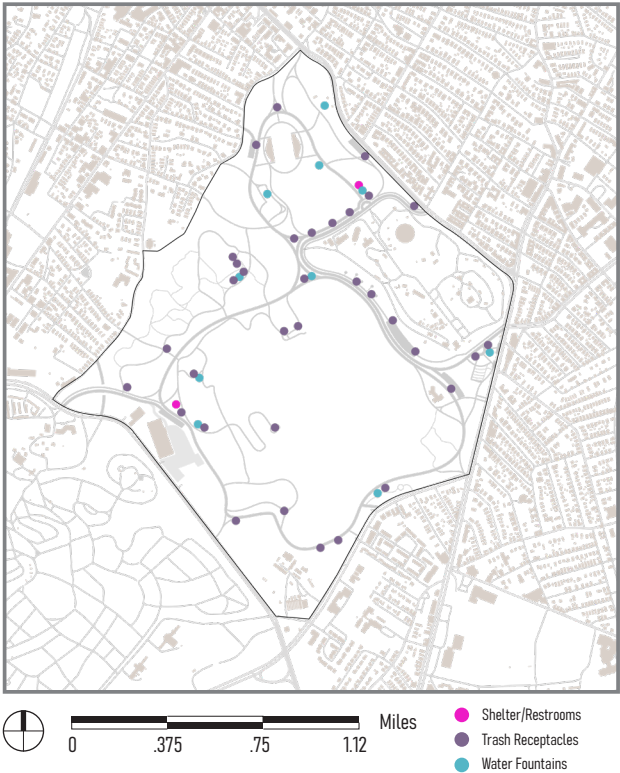


Figure 6.20: Proposed Microscale Elements | By Author



Microscale Elements

QOC. Characteristic Addressed

Microscale elements, specifically trash cans and water fountains, are randomly scattered throughout the circulation system without intention. Additionally, public restrooms are not available to all user groups. This calls for the addition and intentional relocation of microscale elements throughout the circulation system.



Unpleasant Sensory

QOC. Characteristic Addressed

The circulation system benefits from a tree canopy's expansive but permeable barrier, providing some protection to non-vehicular users. However, the implementation of shelters or pavilions available to circulation users can protect them from harsh climatic conditions.



Figure 6.20.1: Microscale Elements Adjustments | By Author

Existing Kept

Selective microscale elements were kept within the existing circulation network. The main features retained were various trash receptacles and water fountains already located at critical points in the current circulation system for the new network.

Existing Removed

Various microscale features were removed from the existing for the new circulation system. The removed features commonly were duplicates of the element that was kept or would be eliminated due to the reconfiguration of specific infrastructure.

Added Infrastructure

Many microscale elements were added to the new circulation system. The added features provide service to areas that didn't have them before or for new spaces added to the network. Common additions included trash receptacles and water fountains.

Account for Cyclist Needs

The current circulation system exhibits next to nothing of microscale elements for cyclists. Cycling is one of the primary ways the existing circulation system is accessed, and bike racks and repair stations are absent. These necessities are needed to encourage and make the system comfortable for cycling user groups. The new circulation system adds bike racks and repair stations to magnet spaces along the circulation system. Additionally, Franklin Park has four Blue Bike stations around the park but non internally. Two additional stations are proposed adjacent to the main parking lot and Ellicottdale to make the city amenity readily accessible and encourage bike use while in the park.



Figure 6.21: Proposed Cyclists Microscale Elements | By Author

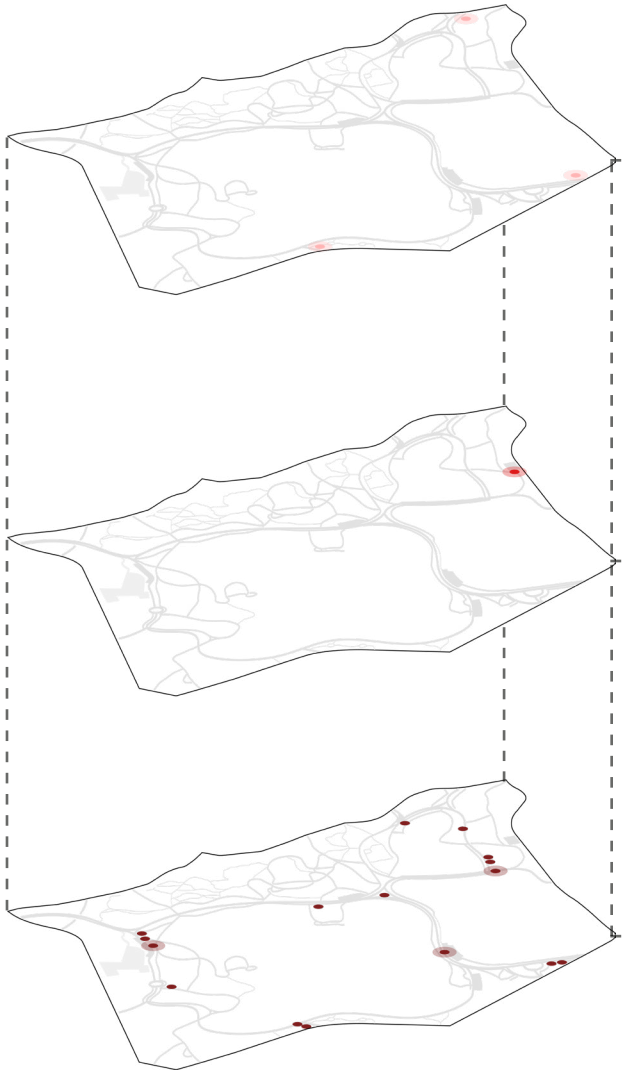


Microscale Elements

QOC. Characteristic Addressed

Cycling is a primary way park visitors access Franklin Park, and the current circulation system does not support those user groups due to a lack of basic needs. There is a lack of bike racks and repair stations for cyclists if they choose to travel or use the park.

Existing Removed Added



Existing Kept

The only bike microscale features kept were the only existing bike features within the circulation system. Therefore, the features kept were the Blue Bikes stations beside one. These stations allow for access to a bike at primary entrances.

Existing Removed

One Blue Bike station was removed from the existing circulation system. Rather than being eliminated, the station was moved to the west zoo entry and Playstead parking lot. Here, it would be accessible to a larger population of non-vehicular users.

Added Infrastructure

Many bike racks and repair stations were added to the new circulation system. Bike racks and repair stations were added by magnet programs and entries. Two Blue Bike stations were added by the main parking lot and Ellicottdale to encourage users arriving by car to use a bike.

Figure 6.21.1: Cyclists Microscale Elements Adjustments | By Author

Elevate Wayfinding

When arriving or trying to find your way around the 500-acre Franklin Park, wayfinding is misdirected, absent, or unclear to park visitors in the current circulation system. In the current wayfinding strategy, primary signage focuses on the Franklin Park Zoo, not Franklin Park, creating a lack of identity. Additionally, internal wayfinding is focused on identification and regulations, doing little to help park visitors orient themselves or interpret the park's historical significance. The new wayfinding strategy gives Franklin Park an identity through signage directed toward the park at primary and secondary entrances. The internal wayfinding strategy revamps the current and adds directional and trail markers to the circulation system to help orientate and



Wayfinding

Over 500 acres, park wayfinding is inadequate regarding park identity, orientation, or directional information. A new system can create a park identity, and the addition of new wayfinding types can help users feel comfortable within the circulation system without feeling lost.

QOC. Characteristic Addressed

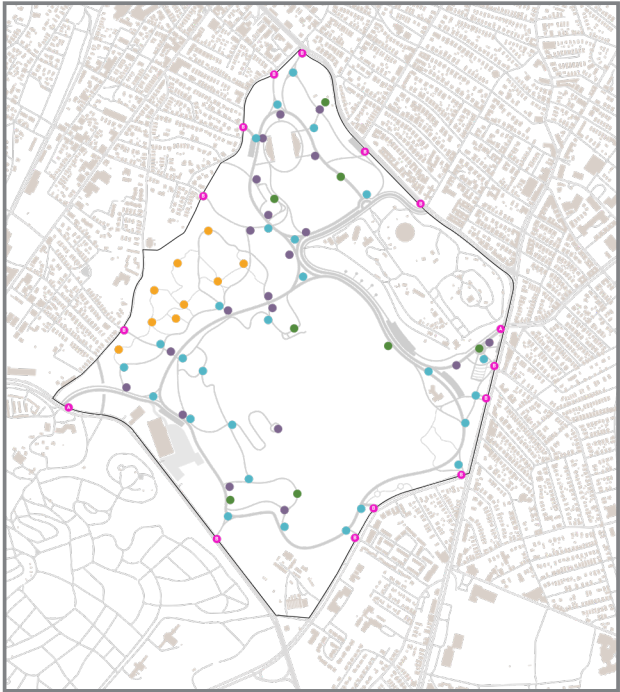


Figure 6.22: Proposed Wayfinding | By Author

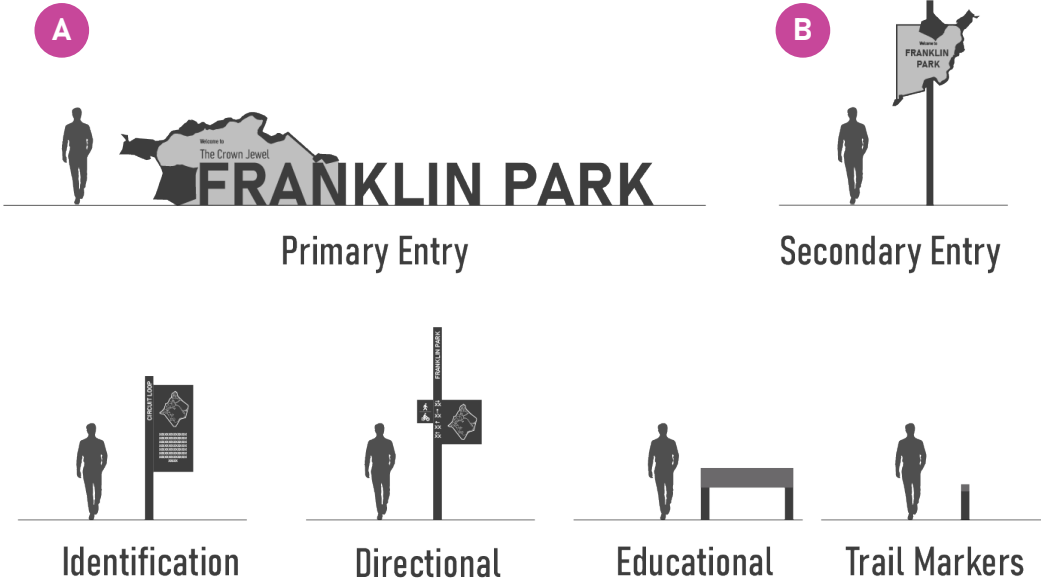


Figure 6.22.1: Proposed Wayfinding Typologies | By Author

Propose New Aesthetics

The current circulation system can feel monotonous due to the same aesthetic being present throughout. The only changing variable is the density of planting and tree canopy across the circulation system. To change the monotonous experience, strategies added to the current system are flowering and sculpture walks, enhanced paving, and water features. These features were selectively added along primary pathways within the overall system or its respective magnet. Individual features like sculptures and water fountains were selectively placed at areas of repose or nodes and within the arrival sequences to enhance the experience or draw people into the park.

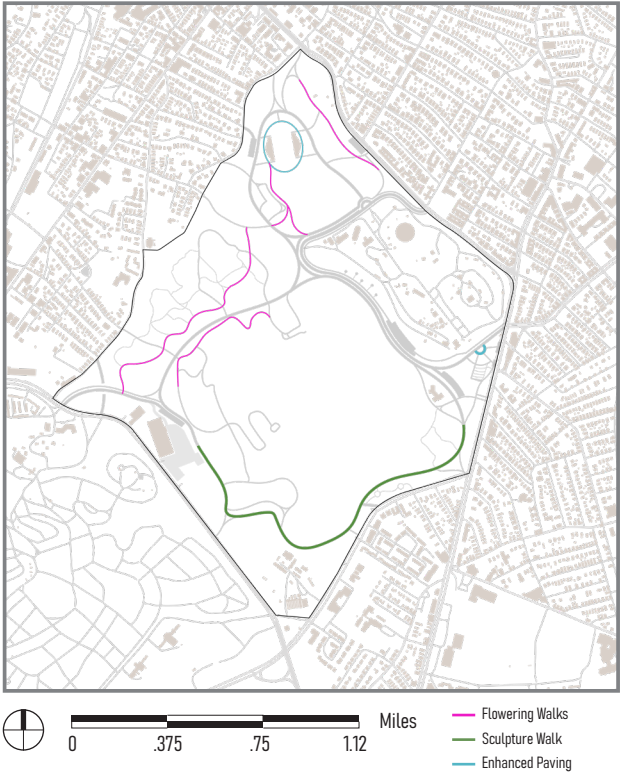


Figure 6.23: Proposed New Aesthetics | By Author



Positive Aesthetics

QOC. Characteristic Addressed

The circulation system interacts with many positive aesthetic features, except it is only one type, historical elements. The circulation system could benefit from more aesthetically pleasing features to enhance the circulation experience, like art, sculptures, water features, or flowering walks for seasonal interest.



Figure 6.23.1: Proposed Flowering Walk | By Author



Figure 6.23.2: Proposed Sculpture Walks | By Author

Expand Areas of Repose

Seating and areas of repose are essential needs and are unsuccessful in the current system. Seating is currently unevenly distributed, and areas of repose are lacking along the entirety of the circulation system. In the redesign, seating in its right is added along all primary systems, specifically Playstead and Circuit Loops, and primary pathways within magnet spaces. Dedicated areas of repose were also added to the circulation system, where additional seating opportunities are available. Areas of repose in the new system are dedicated spaces along pathways rather than just an individual bench. These spaces are paired with identified viewpoints or aesthetic features added into the circulation system.



Repose

Areas of repose are unevenly distributed throughout the circulation system; this includes benches and dedicated pull-off spaces. Dedicated spaces for repose should be often and evenly disrupted to increase overall comfort for all user groups.

QOC. Characteristic Addressed

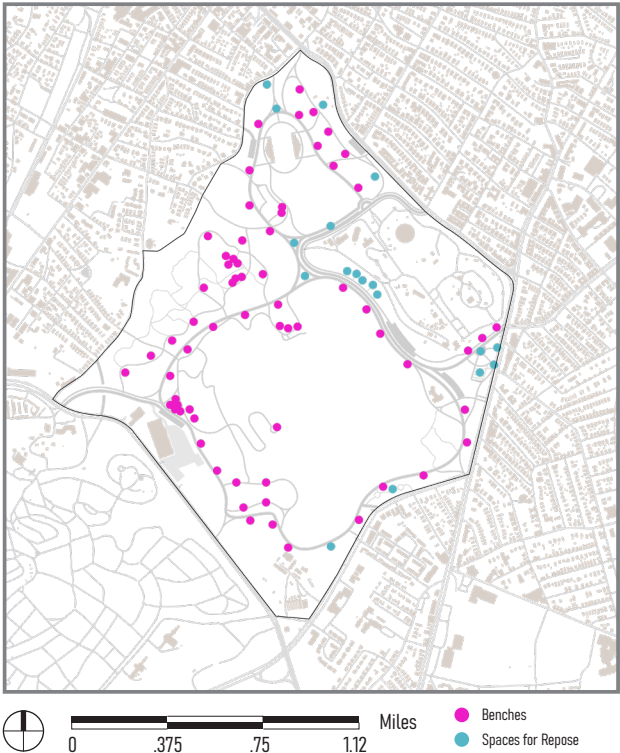


Figure 6.24: Proposed Areas of Repose | By Author



Figure 6.24.1: Areas of Repose Adjustments | By Author

Existing Kept

Existing repose elements and spaces were selectively kept in the new circulation system. Some benches were saved along pathways, and both areas of repose were saved. Additionally, both picnic areas in the Ellicottdale and Wilderness were kept.

Existing Removed

Existing repose elements that were removed stemmed from them being duplicates or were eliminated due to pathway reconfiguration. A series of benches were removed in Peabody Circle and Playstead due to the implementation of new and intentionally placed repose spaces.

Added Infrastructure

A plethora of seating opportunities and areas of repose were added to the new circulation system. Notably, benches were added along all primary loops and pathways, and areas of repose were added along primary loops and intersections.

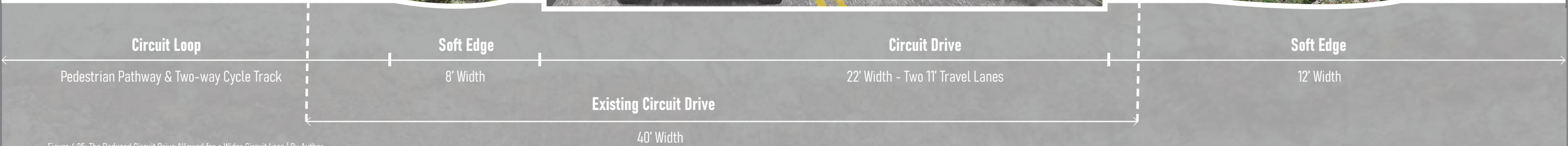


Figure 6.25: The Reduced Circuit Drive Allowed for a Wider Circuit Loop | By Author

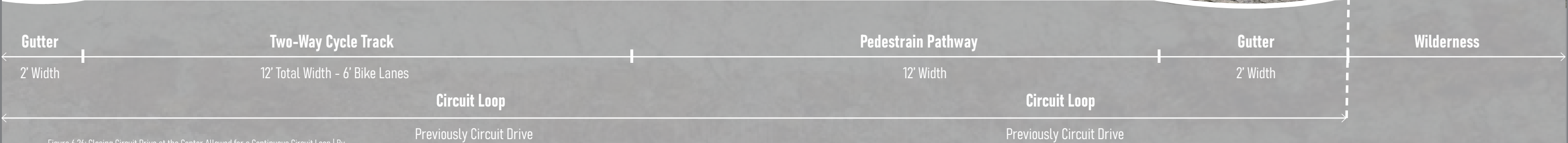


Figure 6.26: Closing Circuit Drive at the Center Allowed for a Continuous Circuit Loop | By



Pedestrian lighting was added along primary systems.

Sculptures were added along Circuit Loop to create a sculpture walk.

Microscale elements like trash cans were intentionally located along pathways.

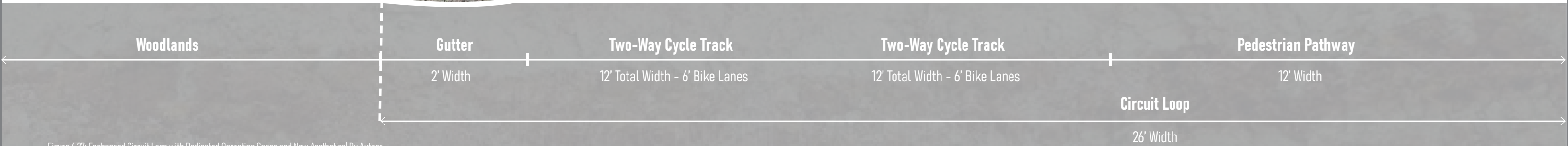


Figure 6.27: Enhanced Circuit Loop with Dedicated Operating Space and New Aesthetics | By Author



Wilderness

Area of Repose

Pedestrian Pathway

Wilderness

6' Width

8' Width

Figure 6.28: Flowering Walk within the Wilderness | By Author



CHAPTER 07

Figure 7.1: Guy Walking up hill in a forest | By Unsplash User: Annie Spratt



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07

CONCLUSION & DISSCUSSION

The final chapter summarizes the overall project and provides final considerations. Reflections on the project methodology, findings, and outcomes are discussed along with the project’s limitations and future research opportunities.

User Group Improvement Summary

Following the projective design, the non-vehicular user groups identified in chapter 2 were reevaluated to show how their circulation experience would be improved by the projective design. While there are other design solutions, the following solutions ultimately answer the research question.

Reconfiguration of Primary Circulation

The reconfiguration of vehicular circulation within the circulation system allowed for the reconnection of the Circuit and Playstead loops, creating a continuous loop system

Separation between N.V Users

A two-way cycle track was added along the primary loops to create a clear separation between users and increase comfort for all users groups

Increase in Repose

More opportunities for repose were added to the circulation system

Microscale Features

Microscale elements like water fountains, lighting, trash, and restrooms were added and dispersed adequately. Additionally, cycling features like bike racks and repair stations were added

Protection for Unpleasant Sensory Conditions

Comfort stations/shelters were added to provide protection from unpleasant climatic conditions

New Aesthetics

New aesthetics like flowering and sculpture walks were used to add visual interest and reduce monotony within the circulation system

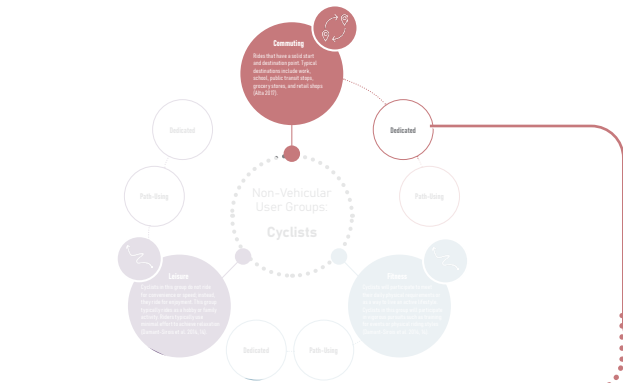
Network Simplification

Redundant pathways were removed, and created a loop system within the secondary network to create clear and direct routes, ultimately reducing confusion

Wayfinding

A new wayfinding system was added to the circulation system that provides directional, informational, and orientation information to parkgoers

Cyclist — Commuting Dedicated



User Group Characteristics:

- Doesn't mind riding on bike infrastructure integrated within the street or traffic
- Are indifferent to having physical barriers between themselves and vehicular traffic
- Are repelled by unpleasant climatic conditions such as rain, snow, or ice
- Prefers continuous lanes of faster travel
- Prefers separation between non-vehicular modes
- Prefer routes with directional signage

How Would their Experience be Improved:

- The reconfiguration of Circuit Drive, would remove on-street bike lanes; however, dedicated bike lanes would be incorporated into Circuit and Playstead Loops and along its original route through the park.
- Internal barriers would be removed throughout the circulation system to allow for deviation in commuting routes
- New wayfinding would provide directional, informational, and orientation information
- The new overall circulation system would remove redundant pathways and created a clear loop system

Figure 7.2: N.V.U.G. Cyclist - Commuting Dedicated Analysis | By Author

Cyclist — Commuting Path-Using

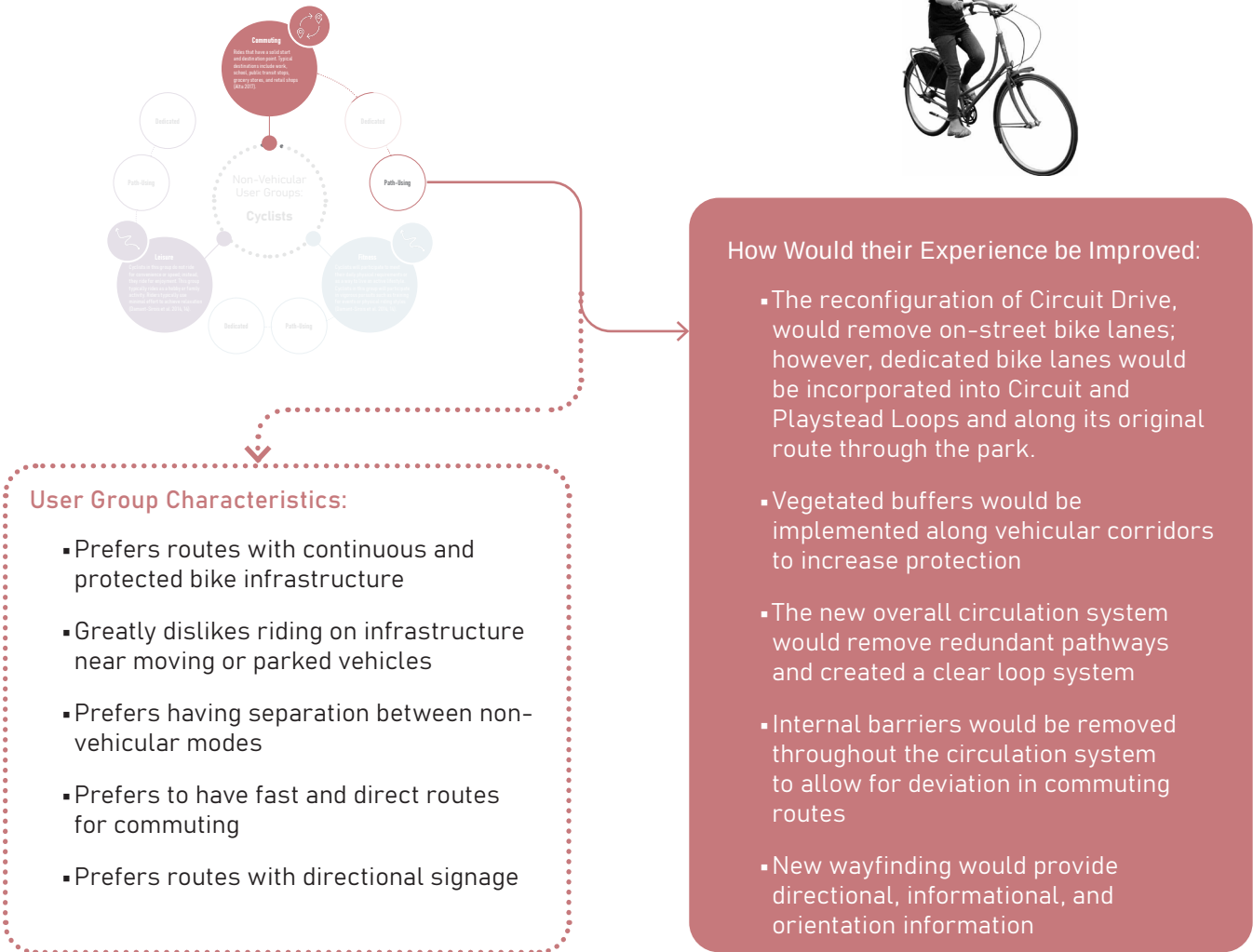


Figure 7.3: NVUG. Cyclist - Commuting Path-Using Analysis | By Author

Cyclist — Fitness Dedicated

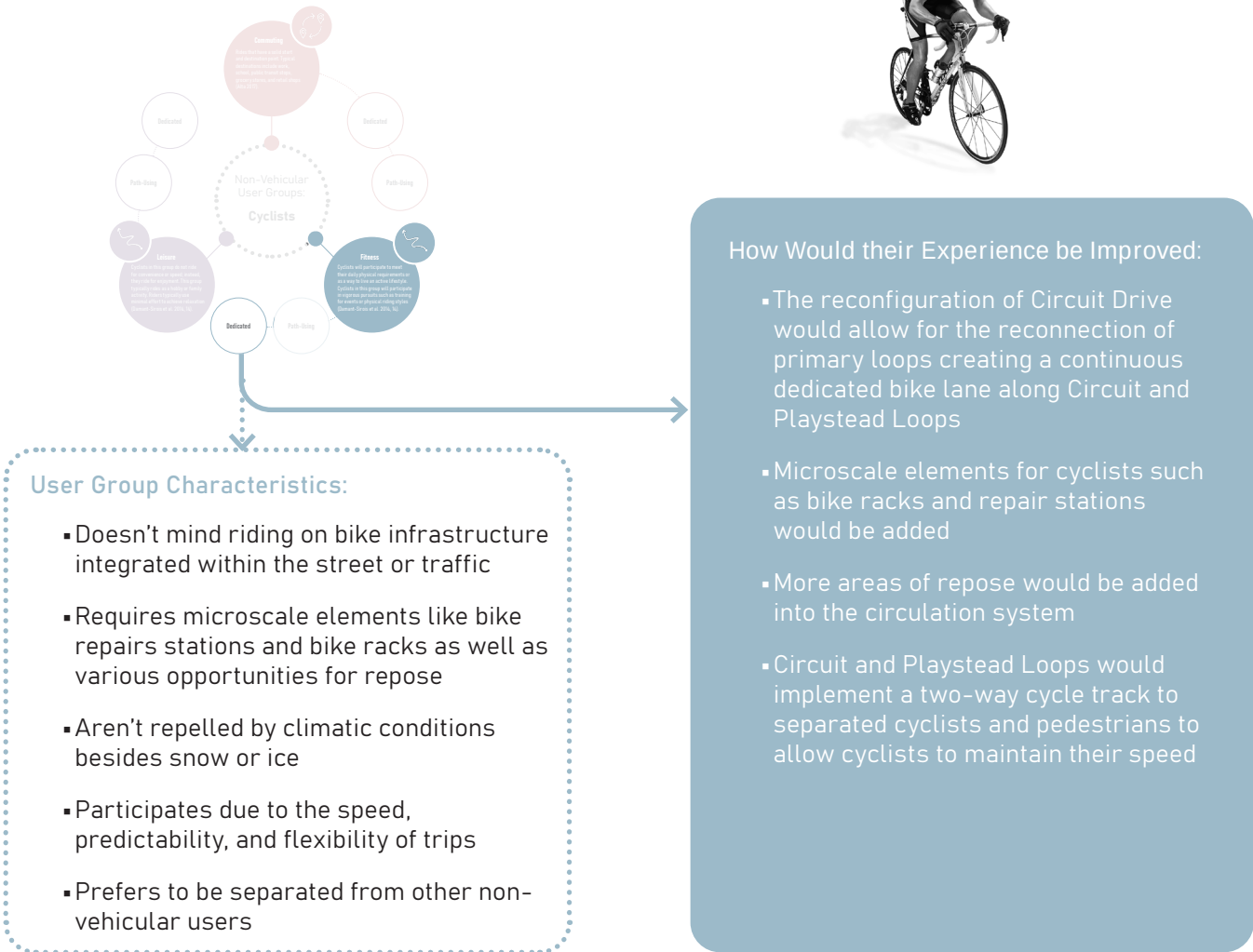
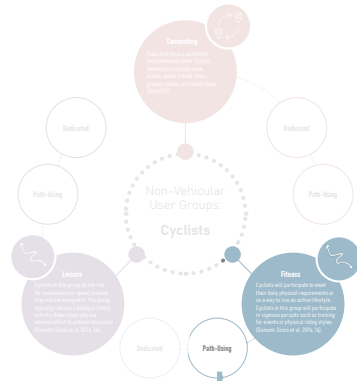


Figure 7.4: NVUG. Cyclist - Fitness Dedicated Analysis | By Author

Cyclist — Fitness Path-Using



How Would their Experience be Improved:

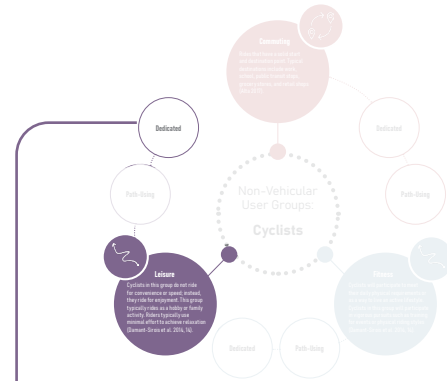
- The reconfiguration of Circuit Drive would allow for the reconnection of primary loops creating a continuous dedicated bike lane along Circuit and Playstead Loops
- While most pathways are away from vehicles, vegetated buffers would be implemented along vehicular corridors to increase protection
- Microscale elements for cyclists such as bike racks and repair stations would be added
- Internal barriers would be removed throughout the circulation system to allow for access to other sections of the park
- More areas of repose would be added into the circulation system

User Group Characteristics:

- Prefers safe and continuous bike routes
- Greatly dislikes riding on infrastructure near moving or parked vehicles, prefer to be physically separated
- Requires microscale elements like bike repairs stations and bike racks as well as various opportunities for repose

Figure 7.5: NVUG. Cyclist - Fitness Path-Using Analysis | By Author

Cyclist — Leisure Dedicated



How Would their Experience be Improved:

- The reconfiguration of Circuit Drive would allow for the reconnection of primary loops creating a continuous Circuit and Playstead Loop
- Microscale elements for cyclists such as bike racks and repair stations would be added
- New aesthetics would be introduced into the park like flowering and sculptures walks
- New wayfinding would provide directional, informational, and orientation information
- More areas of repose would be added into the circulation system

User Group Characteristics:

- Doesn't mind riding on unprotected bike infrastructure integrated within the street or on unsegregated pathways
- Requires microscale elements like bike repairs stations and bike racks as well as various opportunities for repose
- Likes routes that are outfitted with wayfinding systems
- Destination and pathway diversity - ensure the variety of destinations and routes

Figure 7.6: NVUG. Cyclist - Leisure Dedicated Analysis | By Author

Cyclist — Leisure Path-Using



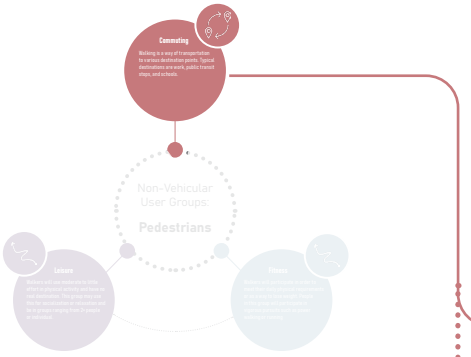
User Group Characteristics:

- Prefers protected and continuous bike routes, either segregated or unsegregated from other non-vehicular groups
- Requires microscale elements like bike repairs stations and bike racks as well as various opportunities for repose
- Prefers routes with flexibility, i.e destination variety
- Can be influenced to participate with the availability of city bikeshare programs
- Influenced greatly by unpleasant climatic conditions

How Would their Experience be Improved:

- The reconfiguration of Circuit Drive would allow for the reconnection of primary loops creating a continuous Circuit and Playstead Loop, that has zero interaction with vehicles
- Microscale elements for cyclists such as bike racks and repair stations would be added, and basic elements like water fountains, trash receptacles, and restrooms would be added and evenly dispersed
- Comfort stations/shelters would be added to provide protection from unpleasant climatic conditions
- Internal barriers would be removed throughout the circulation system to allow for access to other sections of the park

Pedestrian — Commuting



User Group Characteristics:

- Prefers direct and fast routes with directional wayfinding
- Prefers routes with protection from unpleasant climatic conditions
- Prefers routes outfitted with microscale features such as water fountains, seating, lighting, and trash receptacles
- Doesn't mind walking on paths adjacent or away from vehicles

How Would their Experience be Improved:

- The new overall circulation system would remove redundant pathways and created a clear loop system
- Comfort stations/shelters would be added to provide protection from unpleasant climatic conditions
- Internal barriers would be removed throughout the circulation system to allow for deviation in commuting routes
- Microscale elements for pedestrians like water fountains, lighting, and trash receptacles would be added and evenly dispersed
- New wayfinding would provide directional, informational, and orientation information

Figure 7.7: NVUG. Cyclist - Leisure Path-Using Analysis | By Author

Figure 7.8: NVUG. Pedestrian - Commuting Analysis | By Author

Pedestrian — Fitness

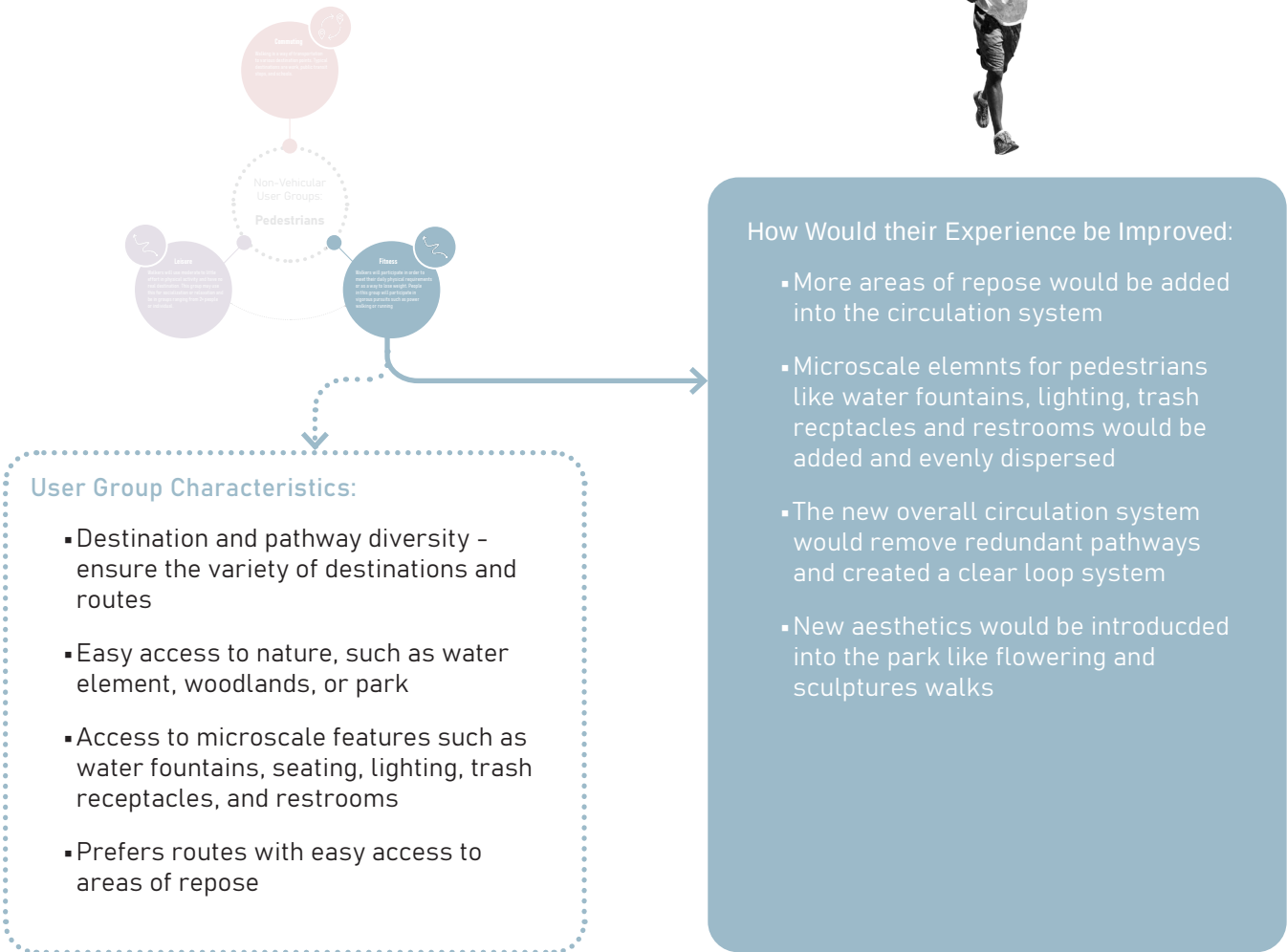


Figure 7.9: N.V.U.G. Pedestrian - Fitness Analysis | By Author

Pedestrian — Leisure

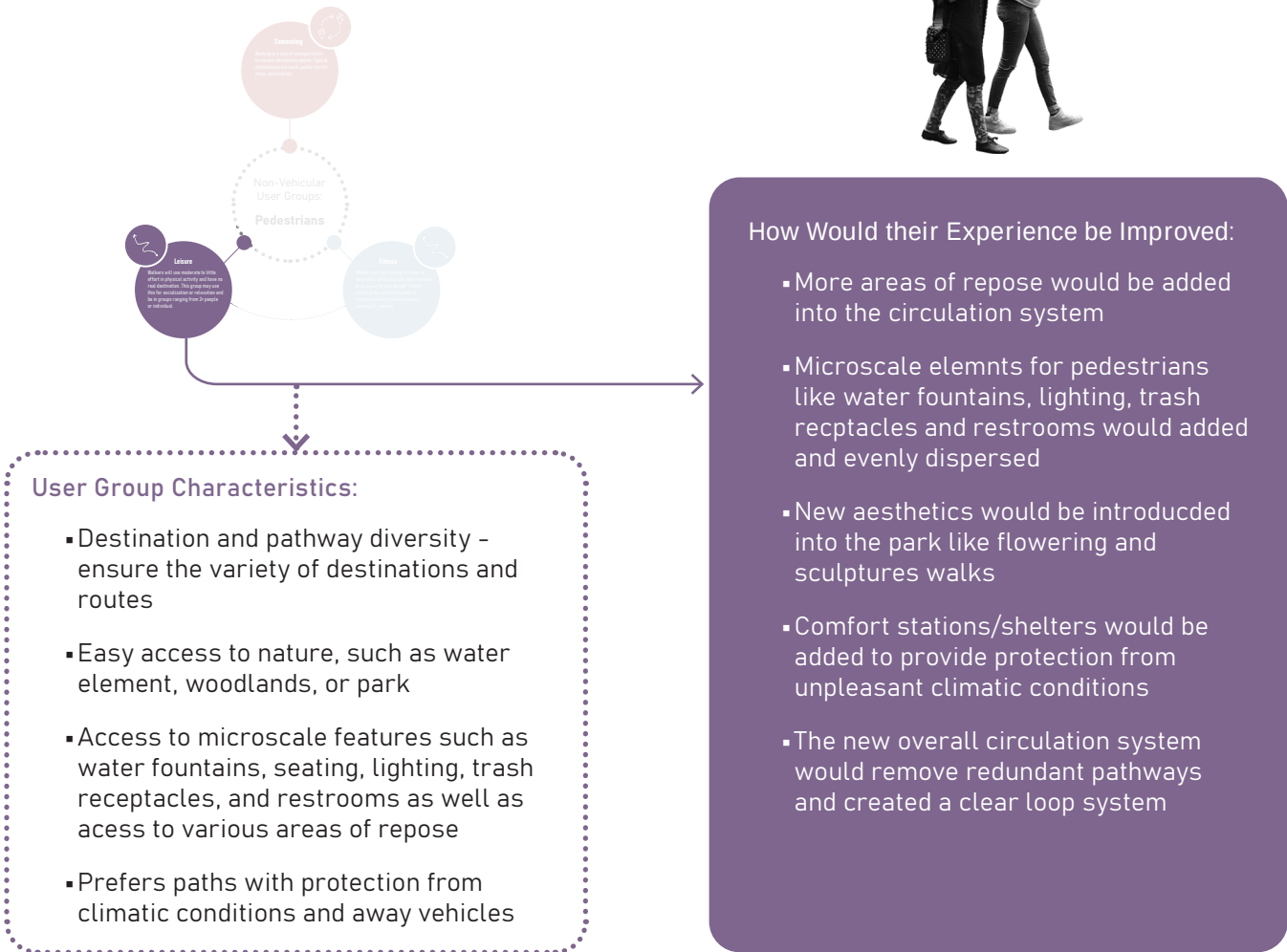


Figure 7.10: N.V.U.G. Pedestrian - Leisure Analysis | By Author

Project Conclusions

The development of Quality of Circulation Framework resulted twenty criteria that are most important for circulation quality. These criteria can be used to analyze the circulation quality of an existing site, which demonstrated in the site analysis section of this report, or to inspire circulation design changes, which was demonstrated in the projective design portion of the report. Most importantly, this project found that though different non-vehicular transportation user groups have nuanced needs and preferences, everyone's overall experience benefits from elements from comfort, protection, and delight.

In terms of Franklin Park, it was found that by comfort, protection, and delight, its circulation system could be improved, thus enhancing the quality and usability for non-vehicular users.

It is envisioned that landscape architects, planners, and students can benefit from the Quality of Circulation for Non-Vehicular Users Framework and apply it in their own projects.

Project Limitations

Time and geographical location were the most limiting factors in the completion of this project. Methods and analyses undertaken to accomplish the research objectives defined based on the project timeline and time allocated to a site visit. Although, given the time constraints, the study was successful in developing a relevant and meaningful framework and design outcomes to answer the research question.

One of the study's primary limitations is related to the geographical location of our site to Kansas State University. As referenced in the preface, students in the LAR 705 studio used Franklin Park in Boston, Massachusetts, as their dedicated site for their individual master's projects. A site visit was conducted, but limited time was allocated to visit the park and surrounding area. Additionally, the date and time of the site visit inhibited the ability to perform actual interviews with park user groups. Instead, the project created user group profiles through background research and defined unique needs and characteristics. However, due to project time constraints, this report didn't seek to interview park visitors. However, interviewing Franklin Park cyclists and pedestrians would have been beneficial.

Second, the developed framework was designed to be an analysis tool for designers to evaluate circulation systems through the lens of a non-vehicular user. In this study, the framework was tested to analyze Franklin Park's circulation system but lacks validity due to it not being tested across other circulation systems.

Third, the analysis of built works that prioritized active transportation users was limited due to the availability of online resources. To appropriately analyze the selected built works, imagery from firm websites and google earth satellite and street views allowed for adequate but limited information that could be extracted. Therefore, key elements or experiential qualities may have been overlooked based on the lack of online imagery and funding for site visits. Ideally, more circulation systems would be analyzed, extracting more meaningful information through site visits by taking pictures or field notes, then reporting how the quality of circulation for non-vehicular users was improved.

Fourth, while the project sought to provide a balanced research/design approach to improving the quality of circulation for non-vehicular

users, the report's outcomes are the personal synthesis of research findings and application. The design solution created from the three design objectives is the culmination of research findings and guidance from several committee members. The projective design is in no way representative of the perfect solution. Instead, the goal was to hypothetically improve the circulation system and serve as a way to start further conversations about Franklin Park's circulation system.

Lastly, as this project was explored through a lens of landscape architecture, its scope and impact were limited to the author's disciplinary knowledge. A richer solution may be achieved by applying a more interdisciplinary approach through collaboration with other designers and local organizations.

Further Application

To further the work completed in this report, several suggestions by the author outlined below.

The Quality of Circulation Framework only applied to a singular circulation system; for future development, the framework should be tested on other circulation systems in other contexts. In doing so, the Q.O.C framework could become an established tool allowing it to be a universal analysis tool for circulation in various contexts. This tool could be distributed to designers and planners to analyze existing circulation system or to inspire built works.

Additionally, the validity of the projective design can be studied to test the effectiveness of the proposed circulation system for Franklin Park. Events such as temporary street closures along Circuit Drive and other portions can serve as inspiration for the reclamation of vehicular-dominated systems within Franklin Park. Interviews from these designed events may enlighten findings related to the effectiveness of proposed changes. A comprehensive analysis of cyclists and pedestrian behaviors would provide much more meaningful data for redesigning and prioritizing active transportation users.

Lastly, future research could benefit from the use of conducting in-person interviews. To find a definite answer to the research question posed in this study, real non-vehicular users could be selected, as defined in the literature review. Then an initial and follow-up interview could be conducted to gauge current and post-design circulation experience within Franklin Park. However, this study never sought this solution due to the time and geographical constraints mentioned previously.



Figure xx: Bike Lane Next to Roadway | By Unsplash User: Rodrigo Kugnharski

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Table References

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Appendices

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 Jenna Jones <jenna.jones@site-design.com>
3/15/2023 12:56 PM
To: John Kalamaja; CC: Hello



This email originated from outside of K-State.

Hi John,
Thanks for reaching out. Feel free to use the images with a credit to site design group, if it suits.
Good luck with your master's project!
Best regards,
Jenna

Jenna Jones, AIA
Director of Planning & Communications
888 South Main Street, Suite 200
Lawrence, KS 66044
P: 785.843.2000 F: 785.843.2000

From: John Kalamaja <jkalamaja@ksu.edu>
Sent: Thursday, March 23, 2023 12:09 PM
To: Jenna Jones <jenna.jones@site-design.com>
Subject: Image Permission | University of Chicago 58th Street

Dear Site Design Group,

Hello, my name is John Kalamaja, and I am a graduate student at Kansas State University in the Landscape Architecture program. Currently, I am working on my master's project, which focuses on improving the quality of circulation for non-vehicular users in large urban parks.

I am writing to ask permission to use the following images in my final report. The use of the images will be strictly for academic purposes, and proper author acknowledgment will be included.



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Should you agree, please reply to this message with your permission and confirm that I have the correct author attribution. Let me know if you have questions or concerns.

Thanks for your consideration.

John Kalamaja
Graduate Student of Landscape Architecture
Kansas State University
College of Architecture, Planning, and Design
1142 Seaton Hall
Manhattan, KS 66506
jkalamaja@ksu.edu



University of Chicago 58th Street Image Permission Correspondence

FW: Chicago 606 | Image Permission

 Nate Trevethan <ntrevethan@mrvainc.com>
3/14/2023 8:48 AM
To: John Kalamaja



This email originated from outside of K-State.

John,
The proper photography credits are as follows:
Night photo- The Trust for Public Land
Tail lake photo- Scott Shigley
Aerial photo- Alex MacLean

Nate Trevethan
Principal
Anytown

Michael Van Valkenburgh Associates, Inc.
16 Court Street, 11th Floor
Brooklyn, NY 11241
718.249.2044
www.mvva.com

From: John Kalamaja <jkalamaja@ksu.edu>
Sent: Thursday, March 23, 2023 12:47 PM
To: mrvva; my mrvva; my <mrvva_21@mrvva.com>
Subject: Chicago 606 | Image Permission

Dear MIVA,

Hello, my name is John Kalamaja, and I am a graduate student at Kansas State University in the Landscape Architecture program. Currently, I am working on my master's project, which focuses on improving the quality of circulation for non-vehicular users in large urban parks.

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Thanks for your consideration.

John Kalamaja
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Chicago 606 Image Permission Correspondence

RE: Image Permission | Olympic Sculpture Park

 Weiss Manfredi Info <info@weissmanfredi.com>
3/17/2023 11:05 AM
To: John Kalamaja



This email originated from outside of K-State.

Hi John,

Thank you for your patience. Thank you for your interest in Weiss/Manfredi! Please credit the photos to Weiss/Manfredi.

All the best in your endeavors,
Sophie

SOPHIE STROHMEIER
WEISS / MANFREDI
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From: John Kalamaja <jkalamaja@ksu.edu>
Sent: Thursday, March 23, 2023 1:15 PM
To: Weiss Manfredi Info <info@weissmanfredi.com>
Subject: Image Permission | Olympic Sculpture Park

Dear Weiss/Manfredi,

Hello, my name is John Kalamaja, and I am a graduate student at Kansas State University in the Landscape Architecture program. Currently, I am working on my master's project, which focuses on improving the quality of circulation for non-vehicular users in large urban parks.

I am writing to ask permission to use the following images in my final report. The use of the images will be strictly for academic purposes, and proper author acknowledgment will be included.



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Thanks for your consideration.

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