

Seattle's Waterfront: An Exploration in Site Analysis

Sarah Wallace

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Sarah Wallace

University of Washington

Abstract

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Sarah Wallace

Co-Chairs of the Supervisory Committee:

Associate Professor Branden Born - Urban Design and Planning

Professor Daniel Winterbottom - Landscape Architecture

On February 28, 2001, the Nisqually Earthquake shook the Seattle Waterfront, damaging the Alaskan Way Viaduct, a north/south state highway running along the waterfront. The damage to the Viaduct initiated a larger conversation about the use of this valuable space. The future of the Seattle Waterfront was in question, leaving the people of Seattle to come up with an alternative design for the waterfront inclusive of people, transportation of goods, economics, and Seattle's growing population.

After an extraordinary decade-long public engagement effort, the conceptual design for the waterfront was completed in 2012 by James Corner Field Operations team (JCFO). The JCFO design considers the central waterfront but does not introduce new design ideas or connections to the northern and southern portions of the waterfront. In this thesis, I investigated the existing waterfront and the JCFO conceptual design to understand the current conditions and planned future for the central waterfront. I use an exploratory site analysis approach created by Jack Alderman paired with a method designed by Anuradha Mathur and Dilip da Cunha to comprehend the waterfront, selecting three sites as my focus areas for the exploration. The exploration allowed me to analyze the site through diagrammatic techniques and exploratory mapping and create a better understanding of my site analysis process as a planner and designer.



SEATTLE'S WATERFRONT

An exploration in site analysis

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INTRODUCTION

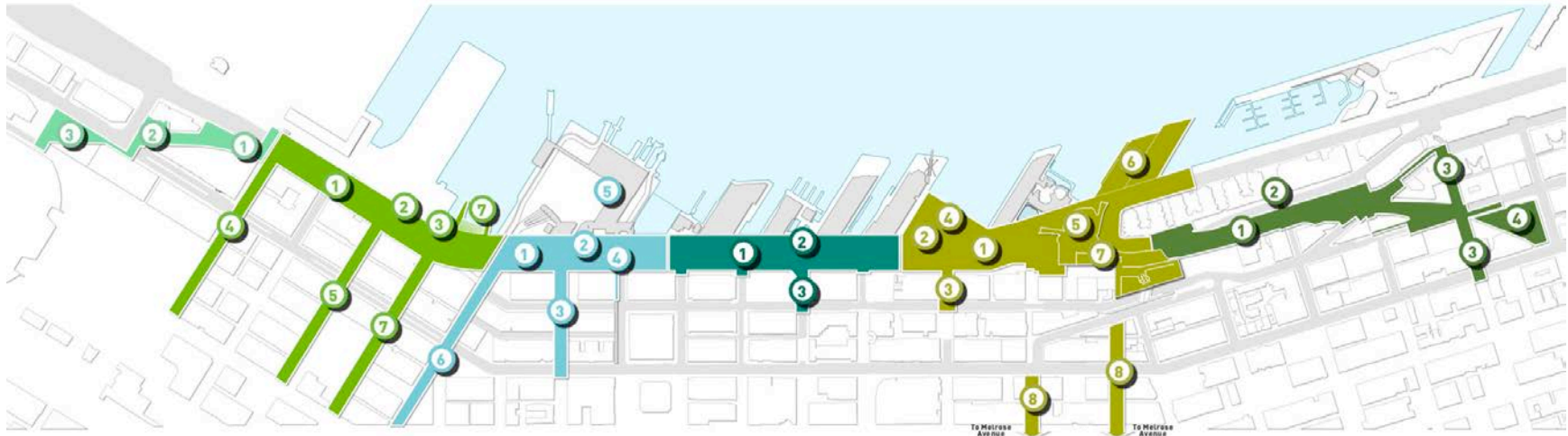
A site exists first as a place in our world, affected by the human hand and nature. Through site analysis one begins an understanding of place. It plays a vital role in determining context and developing a design. Design is the intervention to the site that can change the future of an area; it improves site function, access, usability, and ecological value. Instead of understanding the context of place prior to design, my school and work experiences lacked an emphasis on the site analysis process because of the urgency to begin a design or plan. The analysis process, in many ways, felt like an exercise of checking off the boxes: analyzing transportation modes, demographics, vegetation, and so on. But, I think using generative and explorative site analysis practices can provide increased value to each piece of the design. Reaching outside of these boxes, this thesis uses site analysis as a fascinating tool for designers; allowing us to depict our experience of place as well as add value to the site with a fully realized, cohesive design. This thesis explores the future potentials of the unplanned portions of the Seattle Waterfront using the tool of site analysis as a guide.

The Seattle Central Waterfront site is a 1.5-mile section of Seattle's waterfront stretching from the Belltown neighborhood in the north to the Pioneer Square neighborhood in the south. The Seattle waterfront I will be examining stretches from Pike Place Market north to a large corporate campus in the Interbay neighborhood. It has a rich history of redevelopment and is quickly evolving with an exciting new future ahead as a critical open space. The waterfront until 2019 was home to the Alaskan Way Viaduct, a 2.2-mile-long elevated highway system constructed in the 1950s as a major north/south highway. In 2001, the Viaduct was shaken by a 6.8 magnitude earthquake causing it to sink into the ground several inches.¹ The damage to the Viaduct raised questions about its long-term safety prompting a city-wide debate of it should be reinforced or demolished.

1 Mike Lindblom, "8-Lane Highway' on Seattle's Waterfront? Critics Challenge Post-Viaduct Plan," The Seattle Times, 2017, <https://www.seattletimes.com/seattle-news/transportation/8-lane-highway-for-seattles-future-alaskan-way-challenged/>.



Figure 1 - Viaduct Demolition Project.
Source: Seattle Pi



RAILROAD WAY	PIONEER SQUARE	TRANSIT HUB	HISTORIC PIERS	CENTRAL PUBLIC SPACE	BELLTOWN
1 WATERFRONT	1 ALASKAN WAY	1 ALASKAN WAY	1 ALASKAN WAY	1 ELLIOTT WAY	1 ELLIOTT WAY
2 PIONEER SQUARE	2 WATERFRONT PROMENADE	2 WATERFRONT PROMENADE	2 WATERFRONT PROMENADE	2 WATERFRONT PROMENADE	2 LENORA ST. PED BRIDGE RETROFIT
3 STADIUMS	3 WASHINGTON ST. BOAT LANDING	3 COLUMBIA ST.	3 SENECA ST.	3 UNION ST.	3 BELL ST.
	4 S. KING ST.	4 MARION ST. PEDESTRIAN BRIDGE		4 WATERFRONT PARK REBUILD	4 PORTAL PARK
	5 S. MAIN ST.	5 COLMAN DOCK TERMINAL REPLACEMENT		5 OCEAN PAVILION	
	6 S. WASHINGTON ST.	6 YESLER WAY		6 PIERS 62/63 PHASE 1 REBUILD	
	7 HABITAT INTERTIDAL ZONE			7 OVERLOOK WALK	
				8 PIKE/PINE STS.	

500 ft.

Figure 2 - Seattle Central Waterfront Design Elements.
Source: Friends of Waterfront Seattle

The earthquake brought the city government and stakeholders together to consider a new future for the Seattle Central Waterfront. After years of debate about keeping the Viaduct, putting a tunnel under its footprint, or constructing a tunnel under downtown. Ultimately, the decision was made to raze the Viaduct and a tunnel would be bored under downtown Seattle to replace the elevated highway. As the Viaduct decision was made, a new debate arose: what to do with the disjointed Seattle Central Waterfront? Designers, planners, and community groups such as the People's Waterfront Coalition rushed to propose design alternatives for the Seattle Central Waterfront.² Ideas with no replacement of the highway and a more significant portion of spaces dedicated to pedestrians were proposed. The city-selected conceptual designer for the project was James Corner Field Operations in partnership with CH2MHill, Shiels Obletz Johnsen, Berger Partnership, SHoP Architects, Mithun, Nelson / Nygaard, Parsons Brinkerhoff, Parametrix, Enviroissues, and Magnusson Klemencic Associates.³ Before selecting the design team, there was significant debate regarding the priorities of the waterfront; balancing the needs of freight shipments, car transportation, public open space, and transportation connections were among the considerations.

One of the particularly intriguing aspects of the Central Waterfront Design is the wide variety of social and political agendas advanced by the many stakeholder groups. The complexity of the wants and needs of this site design creates so much potential for creative thinking and problem-solving.

The Seattle Central Waterfront Conceptual Design was presented in 2012. Since then, Seattle's population has increased by 18.7%, placing it in the top 10 fastest growing cities in the United States. This change in demographics will shift the potential needs of the Seattle community.



Figure 3 - Vision for Alaskan Way
Source: The People's Waterfront Coalition

2 Interview with Cary Moon (Seattle, Washington, 2020).

3 American Society of Landscape Architects, "Honor Award, Waterfront Seattle," ASLA Awards, 2013, <https://www.asla.org/2013awards/501.html>.

The implementation of the design is beginning now, over eight years after the completion of the 2012 Conceptual Design. The project was put into motion when the SR 99 Tunnel opened on February 4, 2019, after the Viaduct closed permanently on January 11, 2019.⁴ The scope and content and their phases are listed below. The waterfront project in its entirety is projected to be completed in 2024.⁵

Projects Under Construction

Figure 4 - Alaskan Way is the surface street that wove under and adjacent to the Alaskan Way Viaduct. This project includes the reconstruction of Alaskan Way from S King Street to Pike Street and the construction of a new street, Elliot Way, from Pike Street to Bell Street. The two new streets will span a total of seventeen blocks from the Belltown neighborhood to Pioneer Square. The southern portion of the design includes dedicated bus lanes, ferry queuing lanes to Coleman Dock, and a two-way bike trail.⁶

Figure 5 - The Park Path and Promenade is a linear park spanning from Pioneer Square to the Seattle Aquarium. The pathway has raised buffers on both sides to separate drivers, pedestrians, and cyclists. The trail will create an improved bike connection between parks and link businesses to the biking community.

Figure 6 - Pier 62 will be the endpoint of the Overlook Walk. Currently under construction, the pier will provide a flexible park space with direct access to the water via the floating dock.⁷ The pier design features a sound-based art installation by artist Stephen Vitiello.



Figure 4 - Seattle Central Waterfront, Alaskan Way Design. Source: Waterfront Seattle



Figure 5 - Seattle Central Waterfront, Bike Path & Promenade Design. Source: Waterfront Seattle



Figure 6 - Seattle Central Waterfront, Pier 62 Design. Source: Waterfront Seattle

4 Washington State Department of Transportation, "Seattle's New SR 99 Tunnel," 2020.
5 City of Seattle Office of the Waterfront and Civic Projects, "Construction Overview - Seattle Waterfront," 2020.
6 Waterfront Seattle, "Program Overview," 2019, <https://waterfrontseattle.org/about/program-overview>.
7 City of Seattle Office of the Waterfront and Civic Projects, "Pier 62 - Project Status," 2020.

Figure 7 - The Habitat Beach at Washington Street Boat Landing will provide an access point to the water for residents living in downtown Seattle and Pioneer Square. Additionally, rocks and plantings will be added along the waterfront to enhance the salmon corridor. The Washington Street Boat Landing pergola, a landmarked structure, has already been restored: a feature of the waterfront since the early 20th century.

Figure 8 - Railroad Way will be opened as a new connection between Pioneer Square and the city's sports stadiums. Though serving as an active roadway, Railroad Way will feature plaza space, furnishings, lighting, and wider sidewalks to accommodate large crowds.

Projects in Design Development

Figure 9 - In 2017 a new portion of Pike Place Market opened, stretching the market out further towards the waterfront. The Overlook Walk will connect the waterfront to Pike Place Market without requiring pedestrians to cross Alaskan Way. The walkway will include play areas, public plazas, restaurants, and landscaping, as well as panoramic views of Elliot Bay.⁸



Figure 7 - Seattle Central Waterfront, Washington Street Boat Landing Design. Source: Waterfront Seattle



Figure 8 - Seattle Central Waterfront, Railroad Way Design. Source: Waterfront Seattle



Figure 9 - Seattle Central Waterfront, Overlook Walk Design. Source: Waterfront Seattle

8 Waterfront Seattle, "Program Overview."

Figure 10 - As part of the Pike + Pine Renaissance, design interventions will be used along the waterfront as well as along connecting streets. This project intends to improve east/west connections between the waterfront and the surrounding neighborhoods. The design goals include safety, comfort, and visibility, and will incorporate wider sidewalks, protected bike lanes, and lighting.⁹

Figure 11 - Pier 58, also known as Waterfront Park, has existed as a park since 1968 when a Forward Thrust parks bond passed. The design for the pier aims to create a public park and improve accessibility to the dock. The plan will emphasize spaces for families and young children with a play area and water features.

Figure 12 - Plans for Pioneer Square, developed in partnership with the Alliance for Pioneer Square and the City of Seattle, will include improvements Main Street, Washington Street, and King Street, including sidewalk improvements and increased plantings.¹⁰



Figure 10 - Seattle Central Waterfront, Pike + Pine Renaissance Design. Source: Waterfront Seattle



Figure 11 - Seattle Central Waterfront, Pier 58 (Waterfront Park) Design. Source: Waterfront Seattle



Figure 12 - Seattle Central Waterfront, Pioneer Square Design. Source: Waterfront Seattle

9 Waterfront Seattle, "Program Overview."

10 Waterfront Seattle, "Program Overview."

Figure 13 - Union Street is another improvement to the east/west connection on the waterfront. The upgrades will include a new staircase, elevator, and elevated walkway, creating better connections between Union Street, Western Avenue, and Alaskan Way.¹¹

Figure 14 - Similarly, Bell Street will improve east/west connections to downtown and the waterfront. The enhancements will include an extension of Bell Street Park from 1st Avenue to Elliott Avenue as well as new landscaping and lighting.

Figure 15 - The Marion Street Bridge is a connection from Western Avenue to Coleman Dock, primarily used by walk-on ferry passengers. The bridge will be rebuilt with a wider path for pedestrians and with additional lighting to improve night visibility and safety.¹²

The Seattle Central Waterfront project is impressive in scale and reach and will provide valuable infrastructure improvements to the Seattle community. My interest lies in the areas adjacent to the design, and what their current state and design potential could mean for an interconnected waterfront. These spaces of rich history and complexity deserve an equally rich analysis of place and possibility.



Figure 13 - Seattle Central Waterfront, Union Street Design. Source: Waterfront Seattle



Figure 14 - Seattle Central Waterfront, Bell Street Design. Source: Waterfront Seattle



Figure 15 - Seattle Central Waterfront, Marion Street Bridge Design. Source: Waterfront Seattle

11 Waterfront Seattle, "Program Overview."

12 Waterfront Seattle, "Program Overview."



Figure 16 - The Seattle Central Waterfront Design projects in relation to the three site focus areas of exploratory site analysis

PURPOSE

The Seattle Central Waterfront design and planning process began in 2001, with design development and construction planned through 2024. The design has provided the city with a foundation for a future waterfront that serves both citizens and visitors of Seattle alike. The purpose of this thesis is to explore the potential of the unplanned portions of the Seattle waterfront using the tool of exploratory site analysis. This in-depth analysis of sites on the central and northern Seattle waterfront may be used as a tool for future waterfront development in the City of Seattle. The theories grounding this work are in site analysis, graphic representation, and community engagement.

Gene Bressler defines site analysis as an armature of the planning and design process, which focuses on developing knowledge to recognize the dynamics of place and the basic understanding and delineation of existing site characteristics and elements.¹³ Graphic representation is the process of explaining an idea or characterizing data in a visually understandable way. Analysis of the site and graphic representation will play an essential role in understanding the waterfront site and its future potential for designers and the public.

The reimagining of the waterfront is an extraordinary opportunity for the City of Seattle to provide a more well-rounded waterfront that better serves the needs of the population of Seattle and its visitors. The challenge of this design is providing a space that suits the needs of potential users of the site not only today but for generations to come. How do designers and stakeholders provide a space for all users that's inclusive and equitable and long-lasting?

13 Gene Bressler, "Site Analysis Handbook: Prepared for Use in Conjunction with LA 361, Site Analysis" 2nd (1977): 5.

The Seattle Central Waterfront design proposal provides many ideas for the use of the waterfront but also includes plans that don't prioritize space for people walking and biking. The reconstruction of Alaskan Way includes, in some places, an 8-lane roadway accommodating transit, freight movement, ferry loading, and other vehicles. The eight-lane road with 101-foot crossing lengths doesn't prioritize the pedestrian experience.¹⁴

The complex demands of this waterfront property create a contentious political process around land use. What should be prioritized: public transportation like ferries and buses, businesses, movement of goods, recreational spaces, or wildlife habitat? The James Corner Field Operations design process began when Seattle looked very different than it does today in terms of density, income levels, and public space needs; it is time to re-analyze the site based on these changes. This thesis is a means of challenging conventional knowledge of this multi-faceted space and its potential using an on-the-ground approach to graphic representation.

There is an abundance of literature surrounding the history of the waterfront and its development from the time the native Coast Salish people settled here, to when the Denny Party founded the city,¹⁵ and the Klondike Gold rush boomed through the city,¹⁶ up to present day as Seattle's population continues to expand.¹⁷ While there is research in the topics of waterfront history, waterfront development, site analysis, and inclusive design separately, there is a lack of combined analysis.

The nexus between graphic representation, waterfront design, and site analysis literature can be used to inform the understanding of the site on a large scale.

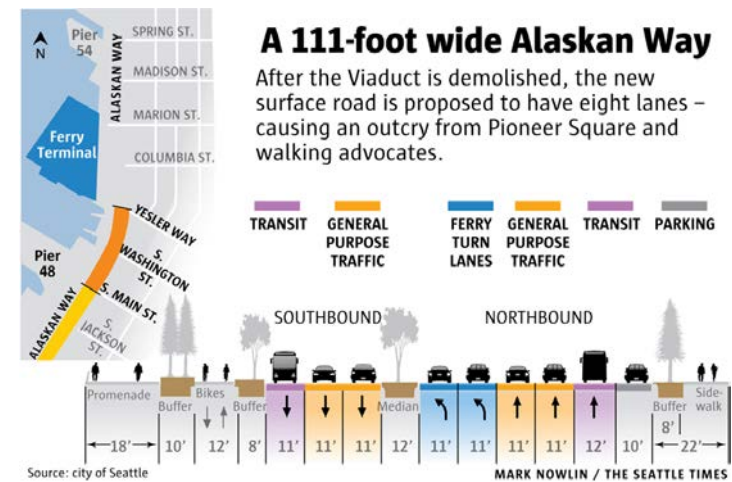


Figure 17 - The Alaskan Way Design Proposal Cross Section. Source: The City of Seattle

14 Lindblom, "'8-Lane Highway' on Seattle's Waterfront? Critics Challenge Post-Viaduct Plan."
 15 Stuart Eskenazi, "Denny Party Progeny Live Quietly among Us," The Seattle Times, June 17, 2001.
 16 National Parks Service, "History & Culture, The Klondike Gold Rush," 2018.
 17 Paul Dorpat and Walt Crowley, "Seattle Central Waterfront, Part 1: Overview," History Link, 2000.

I believe this research begins by understanding these processes and topics individually and then approaching the sites through an in-depth analysis of the existing elements to inform future design opportunities.

In this process, the research will be determined both by personal intuition as a designer and also by the prominent issues on the site. Intuition is what the designer is drawn to based on their experiences, such as colors or textures versus prominent issues any designer must confront, such as sea-level rise, public safety, and other design challenges. The combination can provide a cohesive understanding of the larger scale and how designers can leverage their skill sets to work in an interdisciplinary way to offer the public realm with great spaces.

I started my research by studying the history of the Seattle waterfront, the changes in Seattle since the design process began, reviewing case studies in waterfront analysis, and learning site analysis techniques. I have investigated the sites through on-site observation, which included data collection on surrounding land ownership, zoning, roads and paths, topography, views, future development, plant coverage and other important characteristics as described in my methods, using a combination of techniques in exploratory site analysis. Additionally, I interviewed professionals and community members involved in the waterfront design process since the early 2000s. From this data collection, I created graphics and written interpretations of the three focus areas. I then identified design opportunity areas and recommendations within each site about how we can use the tools of site analysis and graphic representation to create waterfronts with a comprehensive design that speaks to the existing landscape and infrastructure.

This thesis serves as a resource for learning and exploration of place as well as a documentation of existing site conditions.

I have selected three sites as my focus areas: a series of parks stretching from the site of a corporate campus on the north end to Olympic Sculpture Park to the south, another site that includes office buildings, a hotel, and condominiums along Alaskan Way from Lenora to Wall Street, and the third is the connection from Pike Place Market to Pier 62.

These sites offer a different look at urban form along the waterfront, including open green space, built space, and developable space. I've used methods, described in Dilip Da Cunha and Anuradha Mathur, particularly their book *Soak: Mumbai in an Estuary*,¹⁸ as well as Jack Alderman's Masters of Landscape Architecture thesis *Perception + Precision: An Exploratory Process Towards Generative Site Analysis*,¹⁹ as a guide for the analysis of the sites and to guide my recommendations for future design processes.

18 Anuradha Mathur and Dilip Da Cunha, *Soak: Mumbai in an Estuary* (Philadelphia, PA: Rupa Publications, 2009).

19 Jack Alderman, "Perception + Precision: An Exploratory Process Towards Generative Site Analysis" (University of Washington, 2018)

LITERATURE REVIEW

Introduction

Scholars in the fields of landscape architecture and urban planning have written extensively about site analysis and graphic representation. The Seattle Central Waterfront Design is a long-term project that will take more than 20 years to complete. In understanding the design process and analyzing the site, my research is inherently interdisciplinary. It is crucial to first frame the project design documents and their evolution and then to look at the literature surrounding site analysis, graphic representation, and waterfront design. This literature review is a means of understanding themes surrounding each of these topics and to better recognize their relationships to inform my research methodology.

Project Context – Plans and Documents

In 2004 after the Nisqually earthquake and damage to the viaduct, the Allied Arts of Seattle identified the viaduct as a "serious mistake" because it cut off the city from its waterfront.²⁰ With the demolition of the viaduct in mind, the Allied Arts of Seattle partnered with the People's Waterfront Coalition to published a report in 2006 identifying their priorities for the waterfront:

1. Reconnect the waterfront to adjacent neighborhoods
2. Create a great place for activities and people
3. Improve marine habitat
4. Find diverse transportation means for people and freight
5. Expand affordable housing
6. Enhance the waterfront as an economic engine
7. Create a place that is true to the values of the Pacific Northwest

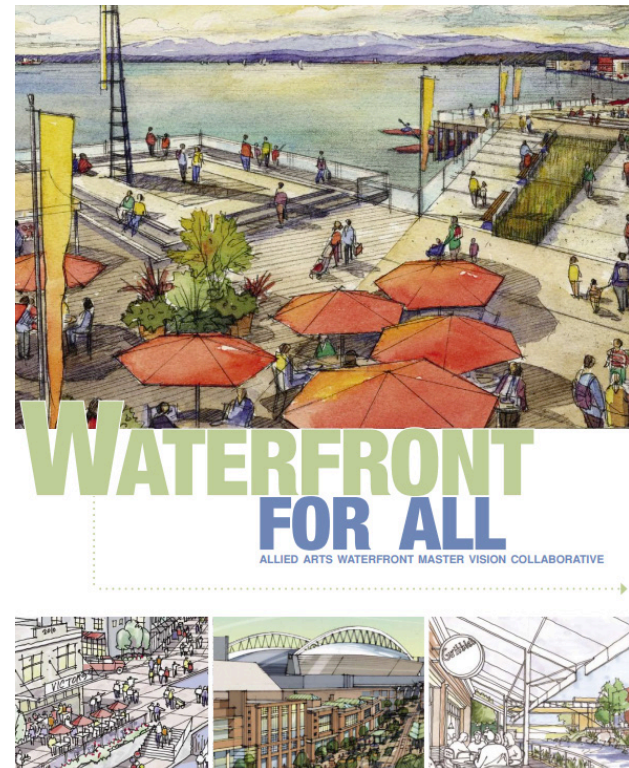


Figure 18 - Waterfront for All. Allied Arts Waterfront Master Vision
Source: Allied Arts of Seattle

20 Allied Arts of Seattle, "Waterfront for All: Allied Arts Waterfront Master Vision Collaboration" (Seattle, Washington, n.d.).

James Corner Field Operations, a landscape architecture firm based in New York City, began community engagement exercises for the waterfront in the early 2010s when the Mayor and City Council endorsed the conceptual design.²¹ In July of 2012, Waterfront Seattle, also known as the City of Seattle's Office of the Waterfront and Civic Projects, released the Conceptual Design for the Seattle Central Waterfront.²² The guiding principles of the document were as follows:

1. Create a waterfront for locals and visitors alike
2. Prioritize the education of people about waterfront ecology while preserving and enhancing maritime activities
3. Reconnect the city to the waterfront
4. Embrace Seattle's past, present, and future
5. Improve access and mobility
6. Create a bold and adaptable vision
7. Develop consistent leadership from concept to construction to operation

Both the Allied Arts of Seattle and the City of Seattle sponsored the conceptual design, which prioritized the reconnection of the waterfront to downtown, preserved the character and enhanced waterfront ecology. From the time the Allied Arts Waterfront Master Vision Collaborative was published in 2006 to the 2012 Concept Design, much of the focus on more public open space was lost. The 2006 proposal proposed pocket parks, plazas, and garden spaces but much of this was eliminated as the politics influenced the process.

21 Waterfront Seattle, "Program Overview."

22 James Corner Field Operations, CH2MHill, Shiels Obletz Johnsen, "Concept Design - Waterfront Seattle" (Seattle, Washington, 2012).



Figure 19 - The Waterfront Seattle 2012 Concept Design.
Source: Waterfront Seattle

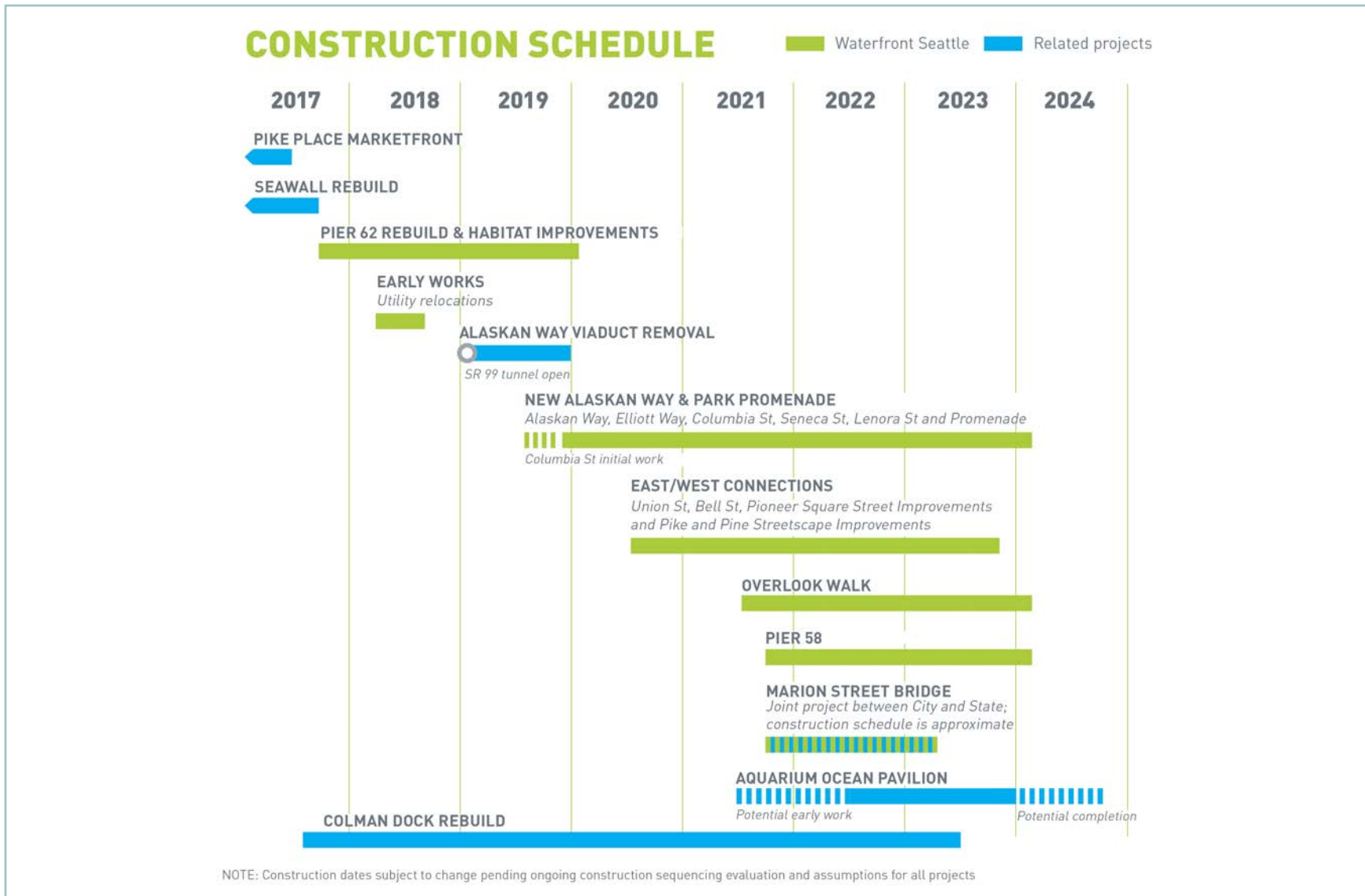


Figure 20 - Seattle Central Waterfront Construction Schedule.
Source: Waterfront Seattle

After the completion of the 2012 Conceptual Design, the City of Seattle and design consultants began further planning based on the ideas presented in the design.²³ From 2012 to the present day, the design has evolved based on the feedback of stakeholder groups, but the main design concepts remain. Of the stakeholder groups engaged in the design process, the Friends of Waterfront Seattle, a non-profit established in 2014, is leading site programming and fundraising for the project.

The Seattle Department of Transportation (SDOT) released a draft Environmental Impact Statement (EIS) in 2015, presenting two alternatives for Alaskan Way. The draft EIS released by SDOT received more than 450 comments; the main points of focus were transportation, design alternatives, parking, and construction.²⁴ Transportation concerns included access for pedestrian, bicycles, transit, freight, concerns about crossing the bike path and Alaskan Way, and ADA accessibility. Other comments from the draft EIS included an emphasis on evaluating road configurations that would reduce the width of the corridor as well as the importance of close coordination with nearby property owners.²⁵ Ultimately, the design selected was oriented towards the transportation of people and goods: prioritizing transit lanes and freight with less of an emphasis on decreasing crossing lengths.²⁶

The current plan for the waterfront contains a compilation of smaller projects to accomplish the overall vision. Two significant components of the plan include the reconstruction of Alaskan Way and an Overlook Walk – a connection from Pike Place Market to the waterfront via a pedestrian bridge. Alaskan Way reconstruction will stretch from S King Street in Pioneer Square to Pike Street near Pike Place Market.

23 Waterfront Seattle, "Program Overview."

24 Waterfront Seattle, "Final Environmental Impact Statement: Alaskan Way, Promenade, and Overlook Walk" (Seattle, Washington, 2016).

25 Waterfront Seattle, "Draft Environmental Impact Statement: Alaskan Way, Promenade, and Overlook Walk," 2015, 328

26 Waterfront Seattle.

The new roadway will include a two-way cycle track and a pedestrian pathway alongside an eight-lane road with two dedicated transit lanes and, in some places, two lanes dedicated to ferry loading.²⁷ The Alaskan Way project is currently under construction and estimated to be completed by late 2021.

In April 2018, the Seattle Design Commission also approved a 30% Design Proposal for the Overlook Walk from the new Marketfront at Pike Place Market down to the Seattle Aquarium and Pier 62. The Overlook Walk design includes nine acres of pedestrian open space. The structure will provide a connection with nearly 100 feet of grade change from 1st Ave to the water; to increase accessibility, the design also includes elevators to connect pedestrians down to Alaskan Way. The project is estimated to be completed by 2023, with a budget of \$688 million.²⁸ These two projects will be one of my three focus areas as I analyze the site and understand its built future.



Figure 21 - Seattle Central Waterfront Design Components.
Source: ETM Associates, LLC

27 Waterfront Seattle, "Alaskan Way Viaduct - Home," www.wsdot.wa.gov (Seattle, Washington: City of Seattle, n.d.),

28 Clair Enlow, "Seattle's New Waterfront Design Will Play to Your Instincts," *Crosscut.*, May 16, 2018.

Site Analysis + Graphic Representation

Site analysis provides us with a basic understanding of existing site characteristics and its elements in a framework.²⁹ The combination of site analysis elements provides a basis for perceiving how people interact with the site and how the site's complex layers inform the resulting design. The literature covers many ways of revealing the site and documenting information: predominant authors in site analysis include James Corner, Christophe Girot, James LaGro, and Denis Cosgrove. The ideologies of these authors have influenced many landscape architects and designers in their approaches to analysis. Corner claims that landscape is less quantifiable than our land or our environment.³⁰ As we construct our landscapes, we are revealing the interface between nature and culture. Corner also describes the landscape as an ongoing medium of exchange; as a landscape gains layers, it enriches our range of interpretation and possibilities.

The site is revealed to us, not in a moment but over time as we spend more time analyzing it. Christophe Girot describes this process as the Four Trace Concepts in Landscape Architecture. The primary purpose of this highly intuitive and experiential approach to working with sites is to draw as much as possible from the potential of any given plan and to access which existing landscape elements might be of real significance for the design yet to come.³¹

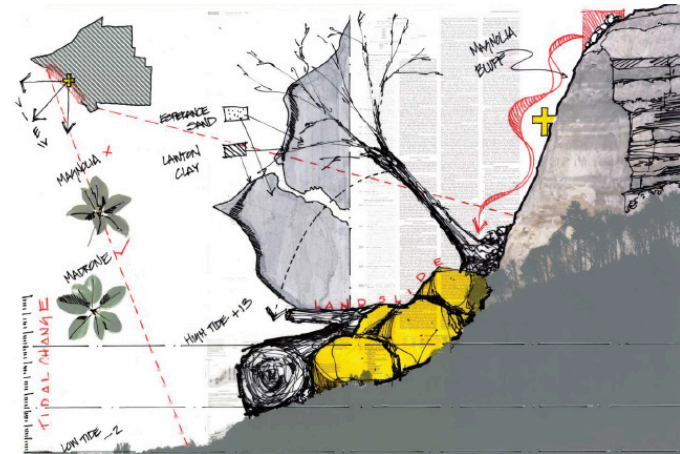


Figure 22 - Discovery Park Site Analysis Representation
Source: Jack Alderman

29 Alderman, "Perception + Precision: An Exploratory Process Towards Generative Site Analysis."

30 James Corner, ed., *Recovering Landscape: Essays in Contemporary Landscape Architecture*, 1st ed. (Princeton Architectural Press, 1999).

31 Christophe Girot, "Four Trace Concepts in Landscape Architecture," in *Recovering Landscape: Essays in Contemporary Landscape Architecture*, ed. James Corner, 6th ed. (Princeton Architectural Press, 2009), 58-67.

The Four Trace Concepts describe the process of engaging with a site from first reactions to design interventions. First is landing, the act of acknowledging the site, marking the very beginning of a project. Girot describes this phase as "feeling before thinking, a reaction."³² The second step is grounding, the orientation, and rootedness to the site; this phase is realized through careful research and analysis. The third is finding, or the act of searching and the outcome of that search; this includes the discovery of objects, experiences, ideas, places, and themes. The last step of the process is founding; this is the importing of something new into a space, a redirection, explicit in both approach and resolution. The Four Trace Concepts is a means of thinking about the design and site analysis process through steps of learning about a place, this approach is similar to this thesis exploration.

James LaGro outlines his approach to site analysis as a list of tasks or a checklist performed to analyze a site. His categories include physical, biological, cultural attributes, integration, and synthesis. Information relating to land use, topographic, climate, infrastructure, wildlife culminates in a list of site attributes but it lacks an overall interpretation of these attributes. LaGro and Girot both use lists to analyze site but Girot takes a more emotional and observant approach while LaGro is collecting only the facts. LaGro relates site inventory to knowledge; having data serve as the primary description of the site.³³

Katherine Jenkins uses a more dynamic approach to site analysis, saying it requires adaption as the site changes over time. A method or site analysis and exploratory representation comes from direct engagement in the field.³⁴ How do users of the site respond to landscape in their movement along with the site? Any design proposal founded on a site map should be responsive, temporary, and changeable.

32 Christophe Girot, "Four Trace Concepts in Landscape Architecture," in *Recovering Landscape: Essays in Contemporary Landscape Architecture*, ed. James Corner, 6th ed. (Princeton Architectural Press, 2009), 58–67.

33 James LaGro, *Site Analysis* (New Jersey: John Wiley & Sons, 2013).

34 Katherine Jenkins, "Field Exercises," *Journal of Landscape Architecture* 13, no. 1 (2018): 6–21.

Katherine Jenkin's ideas align with the views of Denis Cosgrove, who describes analysis as new and speculative techniques of mapping may generate new practices of creativity, practices that are expressed not in the invention of novel form but in the productive reformulation of what is already given.³⁵



Figure 23 - Stamped concrete exploration
Source: Katherine Jenkins

35 Denis Cosgrove, *Mappings* (London, UK: Reaktion Books Ltd, 1999).

Methods of Site Analysis

Jack Alderman, a recent graduate of the University of Washington Landscape Architecture program, maintains that it is most vital that landscape architects have a relationship to the places they work to understand and enhance them.³⁶ Alderman's beliefs align closely with the views of both Girot and Jenkins, by valuing both time on site and the evolution of space over time. Alderman's thesis examines the experiential and phenomenological qualities captured and expressed by landscape architects that are consistently lacking in site analysis. Alderman says that using both perceptive and precise modes of representation in site analysis achieves a better understanding of the site and a more accurate collection of data. Perception is defined as an understanding of how humans interact with the land and how the designs will affect users for years to come. Precise is defined as the observable data, including existing maps, aerial photography, as well as generated data through combining and interpreting of site data.

Alderman used his thesis to enhance his understanding of site analysis methods with Discovery Park in Seattle, Washington as his site; I will build upon this approach in my research using the Seattle waterfront as my site. This approach appeals to my thesis because it is a combination of precise and perceptive methods that provides a broad view of a site through both my observation and data.

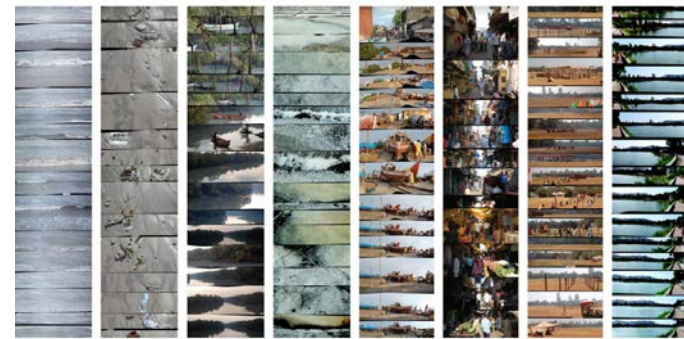


Figure 24 - Series of Site Photographs: Mumbai
Source: Soak: Mumbai in an Estuary

36 Alderman, "Perception + Precision: An Exploratory Process Towards Generative Site Analysis."

Dilip Da Cunha and Anauradha Mathur published the book *Soak: Mumbai in an Estuary* in 2009. It is a guide for the representation of site analysis for this thesis. The book combines artistic display with the conceptualizing of the landscape into a graphic language and creates visualizations of the existing problems in Mumbai.³⁷ The pages are full of a juxtaposition of maps, drawings, and photos that create a meaningful representation of Mumbai as the water moves in and out of the city. Da Cunha and Anauradha use an approach that influenced Alderman in his thesis.

Du Cunha's method divides the analysis into four phases: place, aggregate, armature, and notation. Place is the documentation of the site, including on-site data – the first reaction of photography, drawing, and writing. Aggregate is the gathering of data through sources such as Geographic Information Systems (GIS) data, US Census Data, and aerial photography. Armature creates the existing framework of the site, whether that be points of interest or existing pathways or roadways. Notation is the gap between place, aggregate, and armature: a summary of the large-scale analysis. This approach creates a graphic for each of the four phases, while Alderman divides his graphics into themes with the notation phase as the final graphic. I've created graphics for each phase and for each of the three focus areas.

The process of site analysis could be checking off the boxes. But if used as a process of embracing the complexity and unknowns of a place will produce higher quality outcomes. This thesis provides a more diverse and personal approach to site analysis, and representation will provide a new depth of understanding for the designer.



Figure 25 - Perspective: Rewa Fort
Source: *Soak: Mumbai in an Estuary*

37 Mathur and Da Cunha, *Soak: Mumbai in an Estuary*.

Waterfront Design and Mega Projects

In design, the edges are the most dynamic space of an ecosystem. Edges can generate an activity corridor or, in contrast, act as an impenetrable boundary.³⁸ In the linear experience of space, we create a sequence – varying in visual, tactile, and event-based moments. The visual cues of the landscape create legibility to allow navigation of the space. Kullman feels we don't need to make new in-between spaces in cities into economic drivers. The linear park should be more of a contemporary representation of urbanism, ecology, culture, and nature.³⁹ How do designers and planners address the unique spaces that waterfronts create?

Drahansky also finds edges of importance in the urban landscape, with water as a defining edge of the city. Our relationship with water in cities was interrupted by the industrial era, when cities used waterfronts for industrial activity, since then the idea of waterfront regeneration has emerged. Drahansky values the natural water source in urban areas because of its effects on humans, including visual, audible, tactile, and psychological effects.⁴⁰ We can also understand the waterfront from its functional effects: climatic control, noise control, circulation, and recreation potential. Drahansky thinks regenerations on urban waterfronts are happening because of the changing demographic, potential for residential development, increasing awareness of heritage, growing awareness of the quality of life, a desire to live closer to work, and rising importance of urban tourism.⁴¹

Waterfront regeneration became a significant focus of urban design in the early 1980s.⁴² With 100-year-old waterfront designs and the evolution of both urban and industrial form, many designers and public agencies have been working to prioritize open access along waterfronts.

38 Karl Kullman "Thin Parks/Thick Edges: Towards a Linear Park Typology for (Post)Infrastructural Sites," *Journal of Landscape Architecture* 6, no. 2 (2011): 70–81.

39 Karl Kullman

40 Martin Drahansky et al., "Urban Waterfront Regenerations," *Intech* i, no. tourism (2016): 13.

41 "Creating a New Model for Waterfront Revitalization," *World Landscape Architect*, June 17, 2017.

42 "Creating a New Model for Waterfront Revitalization."

The urban waterfront is not just about economic driven development but about creating spaces for the community to gather, play, and learn. World Landscape Architect states that the beauty and elegance of design must pair with contextual planning decisions around the site and its relationship to the urban fabric, movement systems, and ecology.⁴³ This emphasis on beauty does not come without thinking about the programming of the site. The pairing of both cohesive planning efforts for function and places that evoke feelings of comfort and beauty become essential to design.

As cities continue to embrace their waterfronts, a new planning model is needed. This new model should encourage a measured approach to real estate development, cultivating a lively public realm, embracing ecology, and emphasizing connections back into the city fabric through aligned planning efforts and beautiful design. This approach can continue to bring waterfronts to the people, and people to the water.⁴⁴

In many cases, waterfronts are cleared of outdated industrial spaces to make room for economic-driven and corporate projects, including housing and retail developments. The Seattle Waterfront has been envisioned as a space that prioritized open space and embraces connections to downtown. This new development could include affordable housing and public services. What makes Seattle's waterfront unique, and how can designers re-envision waterfronts at both a site-specific scale with the broader context and needs of the community in mind?

43 "Creating a New Model for Waterfront Revitalization."

44 Ellen Braae and Lisa Diedrich, "Site Specificity in Contemporary Large-Scale Harbour Transformation Projects," *Journal of Landscape Architecture* 7, no. 1 (2012): 20-33.

RESEARCH METHODS

The site was analyzed during a pivotal time for the city when the population was increasing quickly and the infrastructure was rapidly growing. In this thesis I examine three focus areas along the waterfront through an exploratory site analysis process. This process differs from the JCFO approach in that it creates space and time for the designer to spend more time on-site to analyze both precise and perceptive information. Using both design and qualitative-based methods, this research questions how designers can use an exploratory site analysis approach to represent three waterfront focus areas graphically. The methods used are both design and qualitative methods. I explore the core of the Seattle Central Waterfront design and waterfront case studies, while attempting to expand upon site analysis and graphic representation methods for landscape architects and urban planners. I have developed broad recommendations for the focus areas, identifying opportunities for underutilized spaces along the waterfront stretching further north than the 2012 Seattle Central Waterfront design.

I interviewed seven professionals and stakeholders involved in the process, including one from the City of Seattle Office of the Waterfront, two from the People's Waterfront Coalition, one person from the Friends of the Waterfront, and three citizens involved in the community engagement process. I asked these participants about their involvement in the design and decision-making process and the timeline of the process.

In my site analysis, I visited the three sites eight times varying in time of day and weather. I watched how people interacted in each focus area and thought about how the new waterfront vision will impact these behaviors. I observed where people walk, ride bikes, drive, or stop to spend time. I have based my site analysis and graphic representation methods from two main sources: Da Cunha and Mathur and Alderman. My study focuses on diagrammatic techniques and exploratory mapping. Da Cunha and Mathur's book *Soak* analyzes Mumbai as an estuary, rapidly changing and shifting.⁴⁵ This book was the result of an exposition of graphics focused on the island, coast, and rivers of Mumbai. The graphics are divided into four phases: site, aggregate, armature, and notation. This is the method I've used for graphic creation in my thesis. Each space I observed will produce four graphics representing the site, aggregate, armature, and notation phases of analysis.

Alderman's 2018 thesis looks at Discovery Park, a large park in northwest Seattle, Washington, adjacent to the Magnolia neighborhood.⁴⁶ His thesis adapts the Du Cunha and Mathur approach, using the same four phases of exploration but only showcasing graphics from the final phase. The notational graphics are created around themes Alderman found during his analysis. The methods I've taken from Alderman's approach are his dynamic graphics.

He clearly represents both how the user feels on site as well as data about the site. Alderman furthered the approach of Du Cunha and Mathur to make it more digestible, which then inspired my work. This work covers a breadth of literature surrounding site analysis and combines well-known methods of site analysis into a concise process for analysis.

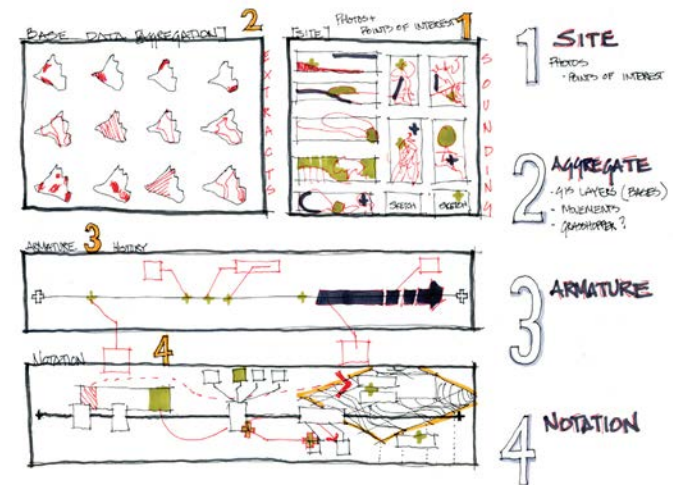


Figure 26 - Steps of Generative Site Analysis
Source: Jack Alderman

45 Mathur and Da Cunha, *Soak: Mumbai in an Estuary*.

46 Alderman, "Perception + Precision: An Exploratory Process Towards Generative Site Analysis."

During my site observations, I sketched, recorded human activities, and diagrammed my interpretations of the physical site. This approach allowed me to capture the ephemeral and experiential moments of the waterfront. I found this time on site valuable to understanding the armature of the site and how existing site uses can inform my future recommendations. This time was my basis for learning about the site when a designer can spend hours on site they notice how people are using the site, what animals are moving through the site, and how people are accessing the site. A typical site visit might be a quick walk-through, taking pictures, and heading back to the office. But there is value in sitting, watching, and learning an opportunity most designers don't give themselves, providing the designer with a unique perspective.

Research is abundant regarding waterfront design, site analysis, and graphic representation. This thesis aims to unify all three to create a better understanding of the processes behind this megaproject. Alderman's approach to site analysis has informed an analytical and dynamic representation process that is both iterative and creates an overall synthesis of the site. This approach differs from a typical site analysis because there is more time spent on-site, unique layering of information, and visual graphics push the limits of the story of the site.

The literature has assisted me in defining what site analysis techniques exist and what approach the City of Seattle took in designing the waterfront. The Seattle waterfront was an ideal choice for testing Alderman and Da Cuhna and Mathur's processes as the sites are full of complex layers needing definition. This thesis offers both a personal understanding of my process in analyzing the site and a look into ideal techniques for concisely representing large amounts of information. I've been able to understand each site from its history and cultural existence to its ecology and current human activity. In the next chapter three waterfront case studies are presented.

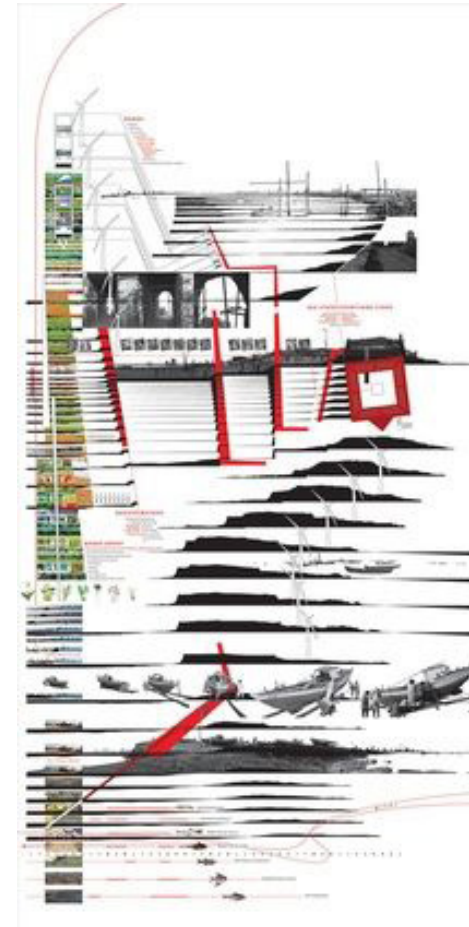


Figure 27 - Notation Phase Representation
Source: Soak: Mumbai in an Estuary

WATERFRONT CASE STUDIES

Across the nation communities are rethinking waterfronts and their everyday uses. Once spaces for industrial activity, including shipping of goods and manufacturing of supplies, waterfronts are now being re-envisioned as places that prioritize people. The opportunity to design open spaces that prioritize recreation and accessibility for all is a massive asset to communities across the country. The case studies I have examined are three waterfronts in San Francisco, California, New York, New York and Amsterdam, Netherlands.

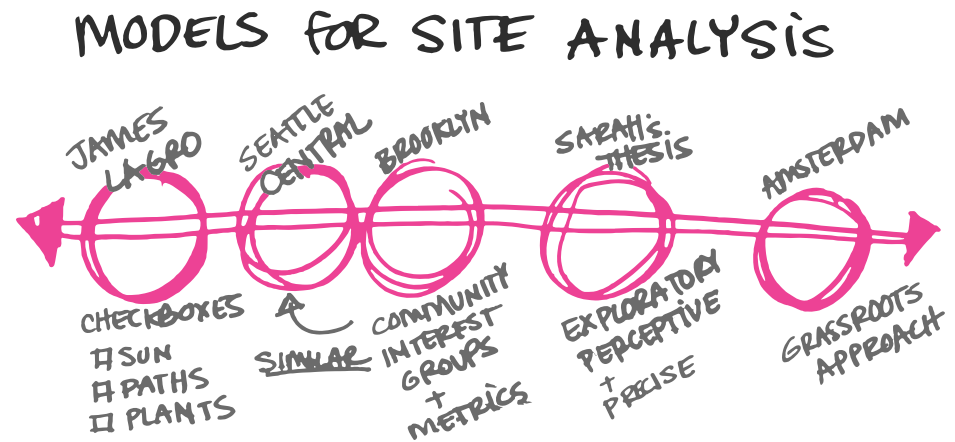
San Francisco has a similar background to the Seattle Waterfront. The Embarcadero Highway once occupied the waterfront separating downtown San Francisco from its waterfront. This highway created a visual and physical barrier similar to the Alaskan Way Viaduct. The case study was selected because of its similarity to the Seattle Central Waterfront, and there are lessons to learn from how San Francisco approached its waterfront redesign that can apply to the Seattle Waterfront.

In New York, the North Brooklyn Waterfront was selected because of its innovative design practices and public, private partnership. The project prioritizes public access to the waterfront and uses strategies in response to climate change. It's relevant to the Seattle Waterfront because of its complicated land ownership and development, as well as its similar development process. The master planning process and its outcome are the focus of this case study.

The Buiksloterham neighborhood located along the IJ canal in Amsterdam is an industrial site, undergoing a gradual transformation into a mixed-use urban area. This site is relevant to the Seattle Waterfront design because of its more radical approach. The neighborhood is using a grassroots decision-making process while living on site to develop a space that best fits the needs of the users.

While the product of these projects varies in magnitude and their impact on residents, these case studies focus on the design and planning processes. Each case study will look at the site analysis process, the timeline of development, community engagement process, and overall outcomes of the design. Each fall into different models for site analysis along the spectrum from grassroots in Amsterdam to dividing the analysis into categories similar to James LaGro.

The diagram on the right describes the different models of site analysis. On the left, LaGro takes a divided approach looking at each category of analysis separately. The Seattle Central Waterfront and Brooklyn Waterfront fall into a typical process for landscape architecture firms, spending some time on site but heavily relying on information from the web, restricting time on site because of project budgets. The exploratory site analysis process I engaged in falls somewhere between the Brooklyn and Amsterdam approach, prioritizing time spent on site. The most drastic is the Amsterdam approach, taking time to thoroughly plan each parcel taking decades to develop the neighborhood and thoroughly engaging with the community along the way.



THE EMBARCADERO

The Northeast San Francisco Waterfront, also known as the Embarcadero neighborhood, was formerly known for its industrial and maritime activities. The Embarcadero Freeway has a similar history to the Alaskan Way Viaduct in Seattle. In the 1940s, the elevated highway was built along the northeast portion of San Francisco's waterfront. By the 1980s, the highway route was serving 70,000 vehicles per day, as an access point to the Bay Bridge. In 1989 the Loma Prieta earthquake damaged the elevated road causing it to be closed to traffic indefinitely.⁴⁷ Once the highway was deemed irreparable, residents began to learn to live without it realizing how much of a barrier it was to the waterfront.⁴⁸ By 1991, the Embarcadero Freeway was demolished.

The highway was replaced with a six-lane, palm-tree-lined boulevard now known as the Embarcadero. The road was designed as a "complete street" serving bicycles, pedestrians, cars, and the vintage streetcar. The vintage streetcar transports more than 20,000 riders per day and operated along the median, flanked by bike lanes, and a broad promenade typically full of strollers and rollerbladers.⁴⁹ The parks and plazas that predated the highway were restored, and a few new open spaces were constructed. Since the demolition of the freeway, new neighborhoods have been established nearby, and the density has drastically increased. The Ferry Building has been restored and now features a gourmet food market. The ferry landings have been restored and are planned for further expansion.

In 2020, both the Seattle and San Francisco waterfronts are home to major ferry terminals and within walking distance of major tourist attractions.

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- 47 Congress for the New Urbanism, "Embarcadero Freeway, San Francisco, CA," n.d.
48 Edward Keenan, "San Francisco's Waterfront Freeway Was Removed 25 Years Ago. No One Misses It," 2015.
49 Congress for the New Urbanism



Figure 28 - Aerial view of the Northeast San Francisco Waterfront
Source: Google Maps



Figure 29 - The Embarcadero Freeway
Source: Livable City

They have both demolished their major highways with San Francisco's timeline 30 years ahead of Seattle's. From the Embarcadero Freeway, this case study can inform the importance of public transportation along the Seattle waterfront. Seattle was once home to a waterfront streetcar until 2005 when the Olympic Sculpture Park was built. The Embarcadero has a wide boulevard similar to the Alaskan Way design, creating less of a barrier to the waterfront than an elevated highway but has crossing lengths that are not ideal for pedestrian comfort.

Currently, San Francisco is continuing this redevelopment project and is acquiring funding to reconstruct the seawall to hold the buildings and land along the water in place. If a major earthquake were to hit the city again, the seawall would likely collapse, leaving the buildings and land, they are on to slide into the water.⁵⁰ The seawall replacement project plan includes a 10-year community engagement process.⁵¹ This growing neighborhood has seen changes similar to the Seattle waterfront but has put less of an emphasis on parks and open space in their design, prioritizing transportation and tourism instead. The project is an example of a significant amount of time it takes to redesign a waterfront and a look at what the Seattle waterfront could look like if tourism and economics are emphasized.

Major Takeaways:

1. Prioritization of transportation along the waterfront
2. Restoration of historic buildings
3. Maintaining and improving ferry terminals
4. Creating boulevards with visual connections to the water

50 Waterfront Resilience Program, "Embarcadero Seawall Program Overview," 2018.

51 Waterfront Resilience Program.



Figure 30 - The restored ferry building
Source: Ferry Building Marketplace



Figure 31 - Birds-eye view of the Embarcadero neighborhood today
Source: Pro Park

NORTH BROOKLYN WATERFRONT

The Brooklyn Waterfront in New York City has seen many redevelopment projects in the last few decades. In 2010, Michael Van Valkenburg Associates converted a shipping facility into an 85-acre park adjacent to the Brooklyn Bridge.⁵² In 2018, Domino Park was converted from an industrial site into a waterfront park by JCFO. By 2019, James Corner Field Operations and BIG, landscape architecture firms, produced a master plan for the North Brooklyn waterfront. The master plan emphasizes resiliency and a direct relationship to the health of the river. Planners estimate the project will require two years of public approval process before construction can begin.

Brooklyn Bridge Park stretched 1.3 miles along the East River. This former cargo shipping and storage facility was transformed into a large park in 2010. The park serves as a connector between adjacent Brooklyn neighborhoods and the riverfront. This park overcame a longstanding separation between the water and neighborhood, including a freeway and steep grade change similar to the Seattle waterfront.

Located just north of the Williamsburg Bridge is the old Domino Sugar Factory. The site has been converted into six-acre, Domino Park. The park was the result of a year-long community engagement process. The park draws on the history of the 11-acre industrial site by creating an esplanade along the East River with panoramic views of Manhattan interspersed with artifacts like factory machinery, building columns, and cylindrical tanks.⁵³ The city had been developing a plan for the site since 2010, when the developer, Two Trees



Figure 32 - Aerial view of North Brooklyn, New York City
Source: Google Maps



Figure 33 - Recreational wetlands along the river
Source: Archdaily

52 Eleanor Gibson, "BIG and Field Operations Design Resilient Park and Skyscrapers for Williamsburg Waterfront" (New York, New York, 2019).

53 "Domino Park: Domino Sugar Factory Redevelopment Plan," UrbanNext, n.d.

Management Company, bought the site in 2013, reimagining the existing plans to include 60% more public space along the water.⁵⁴

The master plan project builds off of the success of the Domino Park and Brooklyn Bridge Park. The master plan project offers public open space, below-market housing, and a YMCA community center.⁵⁵ The series of parks will include more than a mile of accessible waterfront with a series of structures allowing users to walk out onto the river. The project is climate change focused and is known as a model for coastal cities developing waterfronts in an era of rising sea levels and extreme weather events.

Each of these developments provides an example of focuses on post-industrial era design and site history oriented to create a community-focused place. Two of the three projects are public-private partnerships, a unique opportunity for the City of New York to leverage private funding to create more public spaces. The idea of linking together sites along the waterfront can be taken into the Seattle waterfront design. While the Seattle Central Waterfront Design focused a portion of the waterfront, it may become essential to consider the future of the waterfront as a whole.

Major Takeaways:

1. Cohesive planning efforts can lead to interconnected waterfront access
2. Public, private partnership as a tool for development funding
3. Waterfronts can prioritize open space and low-income housing

54 Katherine Flynn, "Private Money, Public Space," Architect Magazine, 2018.

55 Eleanor Gibson, "BIG and Field Operations Design Resilient Park and Skyscrapers for Williamsburg Waterfront" (New York, New York, 2019).



Figure 34 - Old Domino Sugar Factory Site Source: Dezeen



Figure 35 - North Brooklyn waterfront design competition Source: Dezeen



Figure 36 - Domino Park, 1,200 ft. promenade along the water Source: Dezeen

BUIKSLOTERHAM – AMSTERDAM

The Buiksloterham neighborhood is located north of central Amsterdam across the IJ river. The area is home to The Hackable City, a research project initiated in 2012. The site is a 188-acre reclaimed brownfield that once held an airplane factory, oil refinery, and shipbuilding spaces.⁵⁶ When the economy crashed in 2008, and the potential developers of the site pulled out, and a group of planners and urbanists came together to form "Experience Buiksloterham." The group created a living laboratory for a circular economy.

The city changed the zoning to mixed-use and allowed planners, urbanists, and residents to organize the area with bottom-up planning. This process involves long-term, public-private partnerships allowing the residents and small collaboratives to design the new development.⁵⁷ The collaborative efforts come to fruition in the form of apps teaching people how to build their own homes, collaborative management of energy and water, and involving all residents in the planning process of each parcel. Little by little, this neighborhood is turning into a lively area. The community is a testing ground for sustainable practices using renewable energy sources, rainwater storage, and green roofs.

An example of this approach is workspaces on retrofitted houseboats that have been up to the land. The boats are connected using elevated walkways to protect pedestrians from the polluted soil. In the contaminated soil, plants are seeded to absorb pollutants. The community hub is the waterfront café, a well-liked space for both residents and tourists.



Figure 37 - Aerial view of Buiksloterham

Source: Google Maps



Figure 38 - Proposed rendering of the future landscape Source: Metropolis

56 Matthijs Bouw, "The Tiny Amsterdam Neighborhood Is a Prototype for Grassroots Urban Planning," 2018.

57 Sebastian Dembski, "Case Study Amsterdam Buiksloterham, the Netherlands: The Challenge of Planning Organic Transformation" (Amsterdam, 2013).

The community has become so popular that people are camping on purchase plots of land in the neighborhood. The neighborhood is helping Amsterdam rethink its utilities and transportation by allowing more relaxed rules around utility hookups and parking requirements.⁵⁸ These incentivize residents to use more renewable energy sources for power and encourage public transportation usage.

This holistic approach to waterfront development could be a potential tool for the Seattle waterfront. The grassroots approach to this project, with funding from the city as well as private partners, has created a slow-moving and intentional planning process. The residents can learn from their development choices and adapt to the needs of the community in real-time.



Figure 39 - The 188-acre brownfield before development Source: Metropolis



Figure 40 - Community members from Buiksloterham gather at local Café de Ceuvél Source: Metropolis

58 Matthijs Bouw, "The Tiny Amsterdam Neighborhood Is a Prototype for Grassroots Urban Planning," 2018.


HOW HAS SEATTLE CHANGED SINCE THE CENTRAL WATERFRONT DESIGN?

The Seattle Central Waterfront conceptual design was completed in 2012, since then Seattle has changed in significant and meaningful ways. This chapter will take a look at what those changes are and what they could mean for the future of the waterfront. These changes are critical to this thesis because the waterfront design was based upon analysis done before 2012. Social and financial issues have evolved since the design process began. Cities are dealing with a tremendous rise in homelessness, more reliance on public transportation, and increased cost of living. This section challenges the role of designers to offer design-based solutions to the issues Seattle is grappling with.

This data is taken from the US Census Bureau from the 2010 Census and the 3-year 2019 American Community Survey. The comparisons from 2010 to now include unhoused people, households without access to a vehicle, age of the population, racial identity, homeownership, unit types, rent spending, and median home values. This data left me to consider how site analysis and emphasis on these changes can impact the future design of the Seattle waterfront. How can the waterfront address homelessness, transportation access, and create safe spaces for all?

SEATTLE 2010 HOW MANY OF US WERE WITHOUT HOMES?

2,759

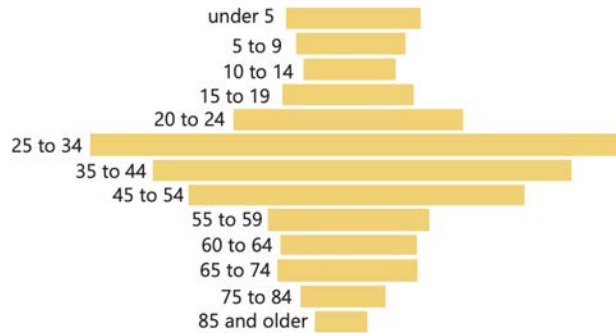
 15.7% of households had no access to a vehicle

SEATTLE NOW HOW MANY OF US ARE WITHOUT HOMES?

11,199

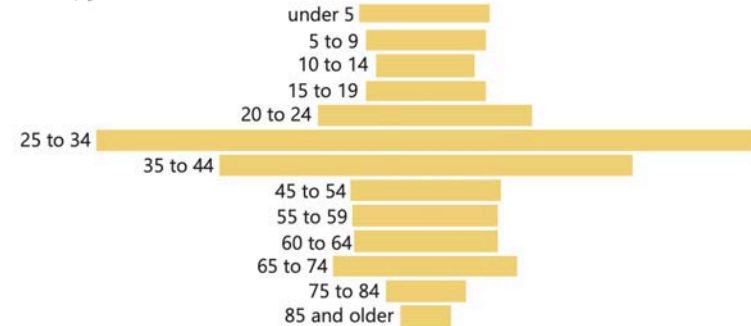
 18.8% of households have no access to a vehicle

SEATTLE 2010 HOW OLD WERE WE?



median age - 36.1
total population - 595,240

SEATTLE NOW HOW OLD ARE WE?

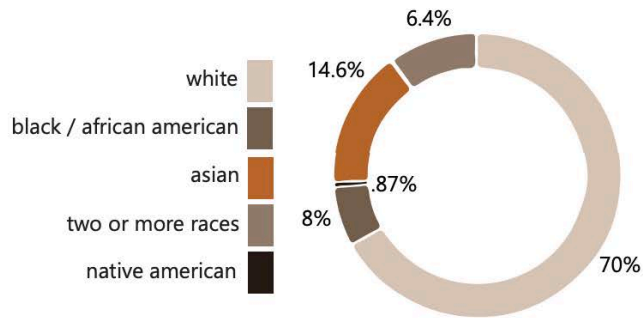


median age - 35.7
total population - 744,949

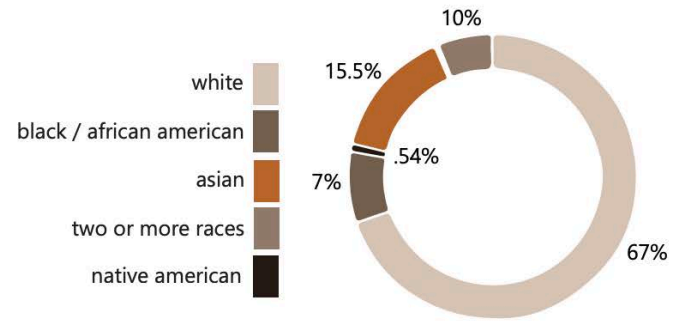
- 30.9% increase in population from 2010 to 2019
- 50,000 people are moving to Seattle from outside of Washington each year
- In 2019, 1 in 3 city residents was between the ages of 24 and 39
- The amount of people experiencing homeless has increased by 305% since 2010

- There are more cars on the road than in 2010 but a smaller proportion of the population is driving alone
- 44% of the population was still driving to work alone in 2019
- 38,000 more people rode transit every day in 2019 than in 2010

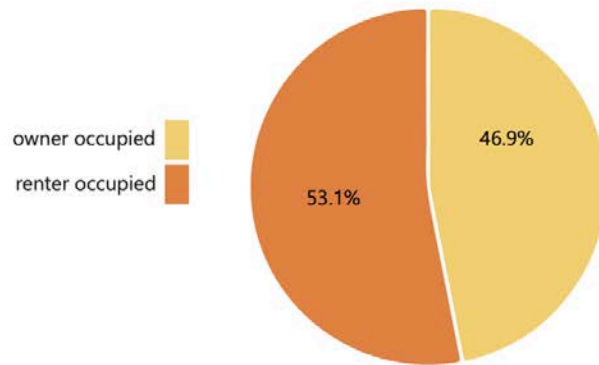
SEATTLE 2010 WHAT WAS OUR RACIAL IDENTITY?



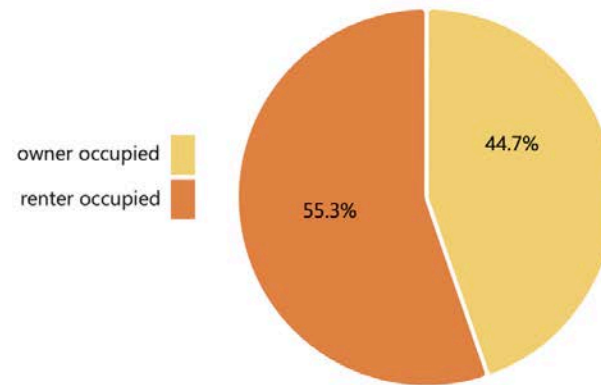
SEATTLE NOW WHAT'S OUR RACIAL IDENTITY?



SEATTLE 2010 DID WE RENT OR OWN OUR HOMES?

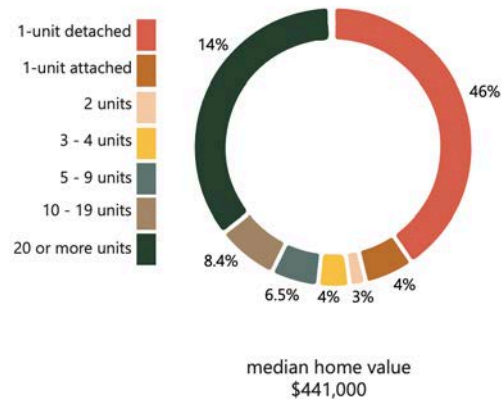


SEATTLE NOW DO WE RENT OR OWN OUR HOMES?

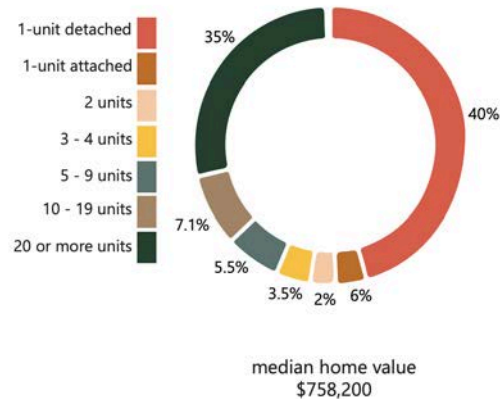


- From 2010 to 2019 more residents moved into large apartment buildings with 20 units or more
- Unemployment has decreased from 6.6% to 3.8% from 2010 to 2019

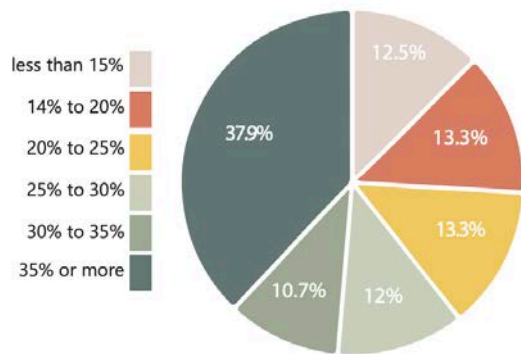
SEATTLE 2010 WHAT TYPES OF UNITS DID WE LIVE IN?



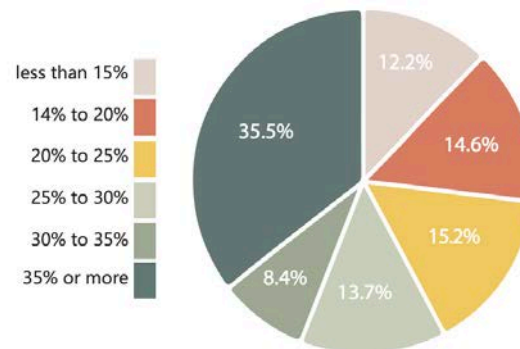
SEATTLE NOW WHAT TYPES OF UNITS WE LIVE IN?



SEATTLE 2010 HOW MUCH OF INCOME DID WE SPEND ON RENT?



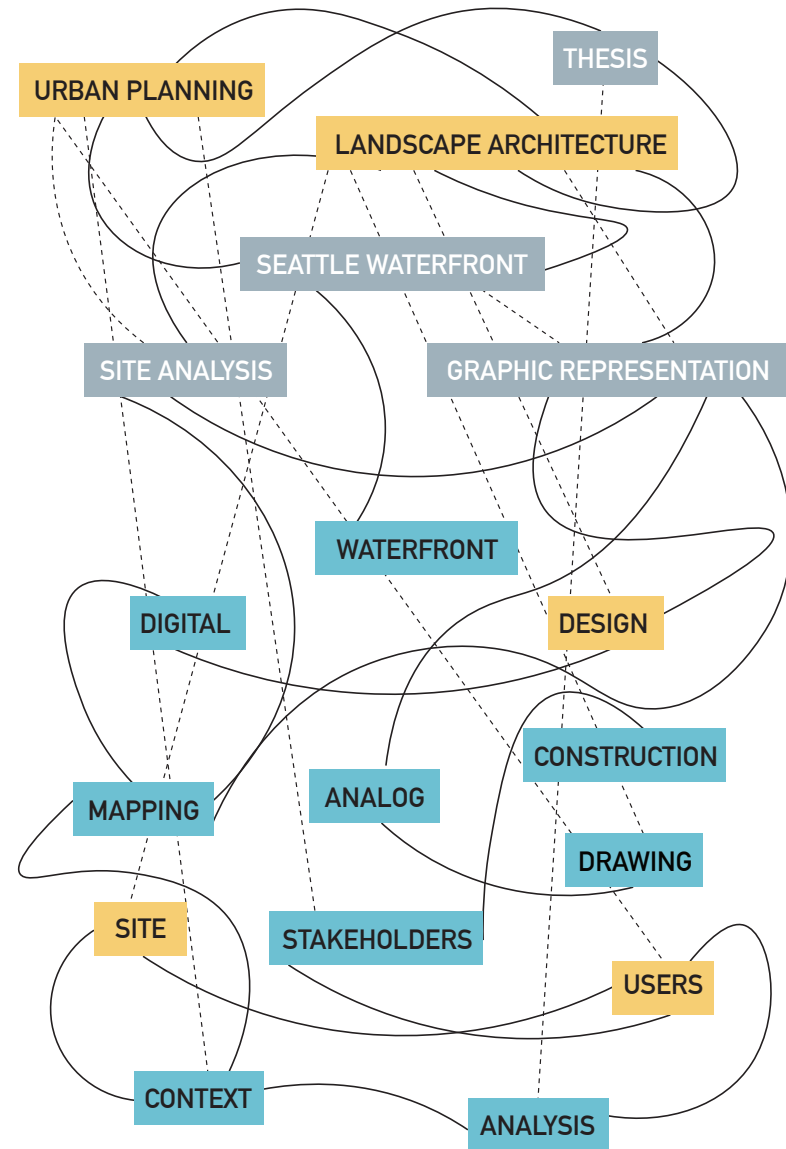
SEATTLE NOW HOW MUCH OF OUR INCOME DO WE SPEND ON RENT?



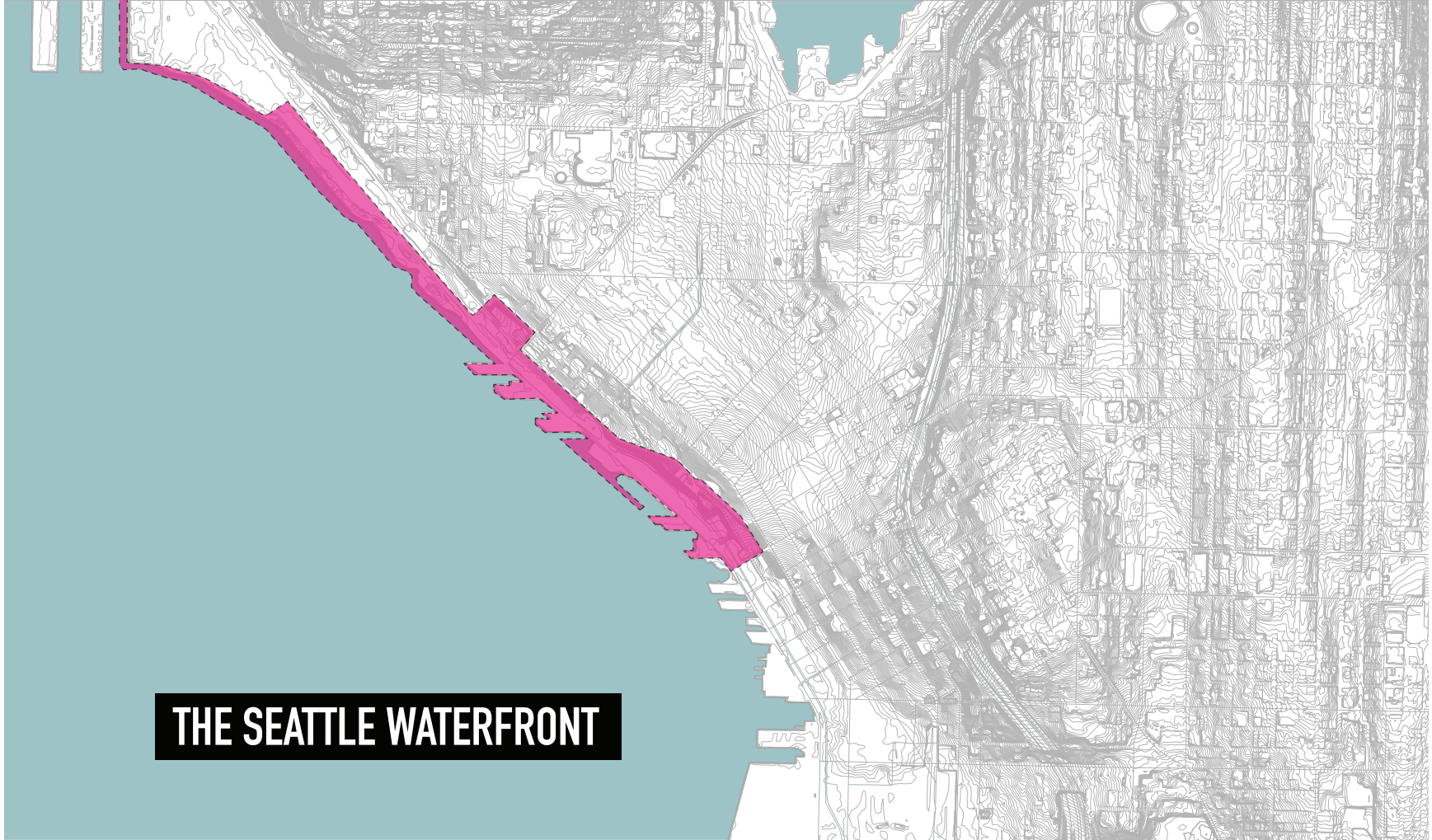
- Median home values have risen by 72% since 2010
- Household income has increased by an average of \$33,000 per household since 2010
- Average rent for a one-bedroom apartment has increased from \$925/month to \$1,857/month in the last 10 years
- Median income has risen from \$61,794 to \$75,034 since 2010

APPLYING METHODS

Applying the theories and imagined analysis to reality and a physical site can be difficult but provides a means of proving the conceptual thinking. This exploration offers a better understanding of site analysis methods and provides examples of graphic representation that work to embody the findings. The Seattle Waterfront was an optimal choice for this application and to test my process as a designer as the site is rapidly evolving as I examine it. The process allows for an exploration without hierarchy, creating time and space for conditions of the place to be evaluated and connected.







THE SEATTLE WATERFRONT

WATERFRONT ACCESSIBILITY

The Seattle Central Waterfront is adjacent to downtown Seattle on the Puget Sound. The site is accessible by bus, bicycle, car, light rail, ferry, train, and on foot. Visiting the site throughout the preparation of my thesis was easy because of the variety of transportation options. The portion of the waterfront I examined has a diverse range of influences and factors to analyze.

The Seattle waterfront, like many Seattle neighborhoods, has no agreed-upon boundaries but extends roughly from Pioneer Square to the Belltown neighborhood along the Puget Sound. The waterfront is separated from downtown by Alaskan Way, a major freight route for the region connecting the Interbay and Duwamish manufacturing and industrial centers on either side of downtown.⁵⁹ The waterfront is also home to Colman Dock, a major passenger ferry terminal for the Washington State Ferry system connecting riders to the Bainbridge Island and Bremerton.⁶⁰ Paralleling the waterfront is the Burlington Northern Santa Fe main rail line carrying freight as well as Amtrak passengers from California to Canada.⁶¹ The Sounder, a regional commuter train between Seattle, Everett, and Tacoma, also utilizes these tracks.

There are only a few connections between downtown and the waterfront because of the steep grade change. These connections are the Harbor Steps at University Street, the Pike Street Hill Climb connecting the aquarium to Pike Place Market as well as the Lenora Street and Bell Street Bridges. In many places, the grade change is more than 100 feet between 1st Avenue and Alaskan Way, making it difficult for pedestrians and cyclists to access the waterfront from downtown.



Figure 41 - Grade change from Pike Place Market to the Seattle Waterfront
Source: The Urbanist

59 Seattle Department of Planning and Development, "Mayor's Recommendations: Seattle's Central Waterfront Concept Plan" (Seattle, Washington, 2006).

60 WSDOT, "Washington State Department of Transportation: Seattle Ferry Terminal," 2020.

61 Seattle Department of Planning and Development, "Mayor's Recommendations: Seattle's Central Waterfront Concept Plan."

SITE ANALYSIS INVENTORY



As the exploration began, a list was created of site elements to examine. These were categories I found relevant to the site and essential to the analysis process. This list became helpful as the images were developed for each phase of the exploration.

As each graphic was created, I would refer back to the list, which provided ideas of how to move forward and what to explore next. The amount of information available for each focus area was more than what needed to be included in the exploration. The inventory list kept the expectation of the exploration clear and assisted in staying on course.

DIVISIONS OF ANALYSIS

The idea of separating the site analysis into divisions comes from both the book *Soak: Mumbai as an Estuary* and Jack Alderman's thesis exploring Discovery Park through Generative Site Analysis. The divisions separate the exploration into various phases of the project, each overlaying the last. The divisions, while differing in definition, can blend in the information they gather and can overlap in sequence. Starting with site, moving to the aggregate, and armature phases but moving between them as the designer learns more about the site.

The process of separating site analysis into divisions allows the designer to create consistency and legibility in the exploration of the site and the graphic outcomes of the research. The divisions also encourage mixing of media types. The designer may start with photography and hand drawing but transition into data mapping and digital collage to represent information. Each division challenges the designer to approach the site with different forms of representation. This creates an overall composition where through the view of the analysis one can understand how elements of the site can affect other aspects of the site. For example, how vegetation and plantings can buffer loud noises of roadways or how speed limits and crosswalk designs affect pedestrian behavior.

The culmination of the site analysis should exhibit the process of representation and how the final forms of representation came to be.⁶² During this exploration I was intentional about taking notes as I created graphics in order to record my thought process and reasoning behind each representation of the site.



62 Alderman, "Perception + Precision: An Exploratory Process Towards Generative Site Analysis."

SITE

The first division in this process is Site, a technique used to introduce the space through representation. This division relies on time spent on-site to provide the designer with the context of the surrounding area, as well as to understand both the ephemeral and experiential qualities of the space. By being on the ground, the designer can create a mental view of the existing site and develop an initial perception of the place.

The Site phase focuses on familiarizing the designer with the site by spending as much time as possible in the place and observing the everyday happenings. The time spent on-site assists the designer in developing educated opinions about the site as opposed to making assumptions. During site visits, the designer should prioritize documenting the visual and experiential elements of the site. Techniques for recording these elements include documenting changes on the site through writing, photographing the site, and mapping the movement on site.

The outcome of these visual representations helps the viewer to develop a feeling of what it's like to be on site. For example, noting that the site is usually very windy and next to a busy road creating feelings of stress and representing those feelings through the visual graphics. A site brings many complexities, each complexity a distinct character worthy of the designer's interest, concern, and maybe even affection.⁶³



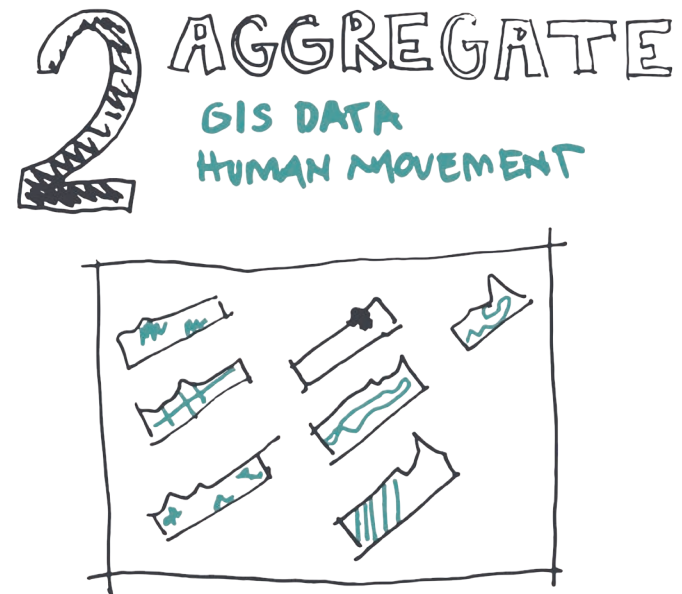
63 Kevin Lynch and Gary Hack, "The Site," in *Site Planning*, ed. The MIT Press, 3rd ed. (Cambridge, MA: Maple-Vail, Inc., 1989), 30.

AGGREGATE

The Aggregate phase of the analysis is similar to Christophe Girot's Grounding phase in his Four Trace Concepts of Landscape Architecture. The Grounding or Aggregate phase is about orientating and rooting yourself in the site.⁶⁴ This rooting calls for developing a deeper understanding of the site using resources other than observation and experience.⁶⁵ The data used for aggregate pulls from secondary sources, including mapped data and information.

The emphasis is on site data, for example, topographic contour data from the City of Seattle GIS data portal, bus maps from King County Metro, or US Census data on the median income in the area. This data by itself provides facts about the site, but it is the designer's job to tell the story of why it matters. This investigative process takes careful research and analysis and less individual imagination like what was used in the site phase.⁶⁶ Girot implies there are many layers of the site to unveil, and designers must capture them and decide how they associate with one another.⁶⁶

The last step of the Aggregate phase is giving a form to the layers of data and the findings from the first division, site. The culmination of these two divisions helps the designer understand patterns and relationships between the different types of data. These patterns and links are interpreted through the layering of data to identify relationships that could not be seen without looking at them simultaneously. This process connects the two forms of analysis from the site and aggregate phases before moving into the next division. It allows the designer to organize their ideas and begin to develop a narrative about the site.



64 Girot, "Four Trace Concepts in Landscape Architecture."

65 Alderman, "Perception + Precision: An Exploratory Process Towards Generative Site Analysis."

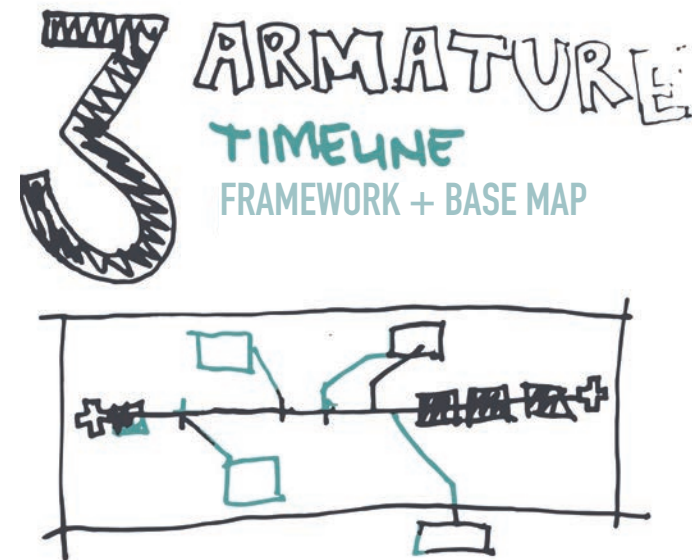
66 Girot, "Four Trace Concepts in Landscape Architecture."

ARMATURE

Armature is the development of the existing framework of the site. It's an exercise in understanding the significant structures already in place. This exercise helps the designer to know what the site's essential functions are and the movements that must be maintained. For example, the pathways connecting people to their place of work or roads that allow cars to board ferries.

The mapping of the urban form creates a basis for comparing the data from the first two divisions, providing it with a structure. The armature is like defining the architecture of a building, where you can enter and exit, how a user travels through the space, and how each area is programmed.

This step reiterates the framework for the analysis, situating the exploration.⁶⁷ The framework becomes the basis for comparing the data through relationships, connection, and linking points of interest. For example, the base map for design is only useful when there is context. This is a familiarizing process to create a structure or framework for the exploration.



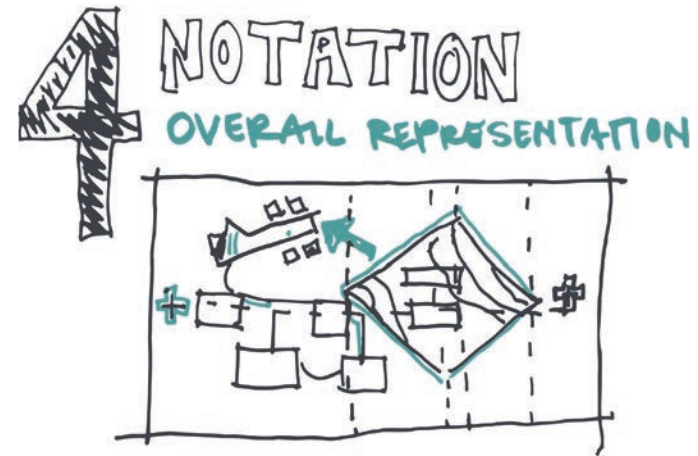
67 Alderman, "Perception + Precision: An Exploratory Process Towards Generative Site Analysis."

NOTATION

A Notation is defined as any system of graphics and abbreviated expressions used in artistic disciplines to represent technical facts facilitating communication in a field of study.⁶⁸ Systems of notation are essential in the field of urban design because they are a combination of experience, movement, and time.⁶⁹

The combination of site, aggregate, and armature into the form of notation fills the gap between data and perception by combining them. The difference is the designer's perception of the site from site visits and documentation and the data interpreted from resources not found on site. The notation phase of the process creates a robust analysis of place through the combination of graphics and information into an overall graphic composition. This tool allows the designer to represent the site analysis process and conclusions of the process while shifting both scales of time and space. For example, a designer may use a graphic to communicate sea level rise over the last 50 years while also demonstrating what sea-level rise will affect across different scales.

This graphic representation of analysis allows for the designer to represent what is most important through visual hierarchy and visual connections. The process of notation requires an iterative approach, repeatedly generating the graphic until it tells the story the designer would like to show with clarity. The method of Notation creates a graphic composition that is not only a culmination of site analysis but also is a representation of the designer's skills to represent with looser forms of media such as hand drawing and collage as well as the rigid data of mapping and research.



68 Wikipedia, "Notation," 2020.

69 James Corner, *The Landscape Imagination: Collected Essays of James Corner, 1990 - 2010*, ed. Alison Bick Hirsch (New York, New York: Princeton Architectural Press, 2014).

ANALYSIS PROCESS

This thesis was an opportunity to engage with site analysis in a new and different way. Designers and planners have been evolving the site analysis process continually. The complexity and scale of the site was motivating, but it became challenging to decide what type of information was important. I conducted eight site walks, each covering different portions of the site. purposely modifying the start and endpoints of the site walks, each site varied in length, ranging from less than a mile to over two miles of walking.

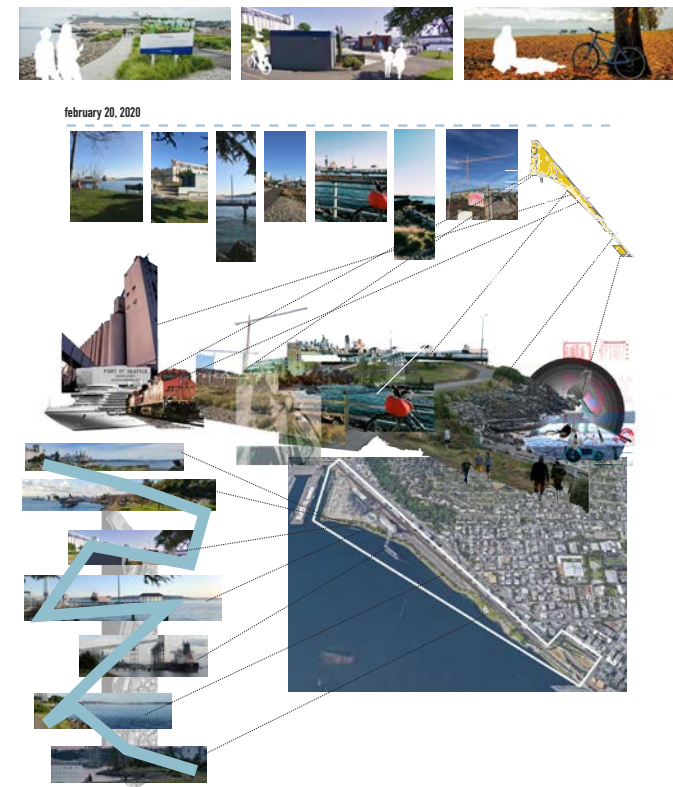
My visits were focused on drawing, photography, and observation of activity. I tracked each of my walks using a GPS tracking app called Strava. The phone application tracked my walk path, distance, speed, and elevation change. After turning on the GPS tracker, I walked the site, taking pictures, and sitting down to draw.

From these eight site visits and my collection of drawings, observations, and photographs, I created graphics in each phase of the exploration (site, aggregate, armature, and notation) to represent each focus area (the park, the office, and the market). The first representations of the focus areas in the Site phase include sketches, aerial imagery, a map of each site, and a collage of the most distinctive features. In the second phase, Aggregate, I layered information regarding topography, property ownership, and surrounding development. The Armature phase provides an aerial overlay of existing infrastructure, including roadways, paths, railroads, and the shoreline's edge.

The notation representations are a culmination of the previous three phases weighing the importance of information into a visual hierarchy. The process of creating each image was time-consuming and thought-provoking, making decisions on what information was essential and what was not made for a difficult process. Creating final images in the Notation phase required distillation of the previous phases while maintaining an accurate representation of the site as well as staying true to my vision as a designer. In practice, this process was taking all the information collected and creating a storyboard of what information told the most compelling story about the site. I enjoyed the challenge of choosing what material was appropriate for each image and each focus area. The strongest images combine the information in unique ways that portray new relationships and patterns that don't exist in the base data.

The sites I selected varied vastly in their uses, from open space to office buildings to tourism oriented. The first site, "The Park," is made up of a series of parks along the Puget Sound, each owned by various entities including Expedia, the Port of Seattle, Seattle Parks and Recreation, and the Seattle Art Museum. The second site, "The Office," is along Alaskan Way and includes a mix of office and condo buildings with a small amount of intrigue for pedestrians. The last site, "The Market," is the location where a large portion of the Seattle Central Waterfront design will be implemented and will create a connection from the existing Pike Place Market down to the waterfront.

In researching each site, there was information about its history, ownership history, land value, topography, zoning, weather patterns, tidal changes, sea-level rise, etc. Instead of focusing on finding all available precise information on each focus area, the research concentrated on developing themes for each of the sites. The themes defined how it felt to be there, what people are doing on site, and who uses different parts of the site.



I found it challenging not to represent the obvious and to shift my focus to be more exploratory and perceptive. As designers were taught to look for specific things similar to LaGro's list, this research pushed beyond those initial instincts. My representations started in the digital mediums, with the assumption that digital graphics would provide more clarity. Still, I found that the hand drawing portions added character and feel to each representation. The end product is a combination of both hand-drawn and digital work using programs like Photoshop, Illustrator, ArcGIS, and InDesign. This compilation was most successful in representing my site analysis process.

While I knew this process was going to be demanding and iterative, I found it hard to feel like my representations were complete. The translation from theory to the application was tedious, pushing a reflective process and quickly transitioning back and forth from theory to application. This process involved looking at the theory and the phases of the exploration, beginning a graphic, reading through the theory again, and then continuing to develop the graphic through completion. While the concepts and themes I developed were intriguing and resonated with me, I found them time-consuming to accomplish. This frustration is a normal part of the analysis process, and without an iterative approach, these innovative forms of representation presented in the exploration would not exist. Through these iterations, the end product became much more valuable and thoughtful. These iterations pushed to improve how the information is represented to the viewer in concise ways.

The easiest way through the process was to maintain an open mind and continue to iterate the information as time allowed. This exercise created a messy method similar to the overall design process but kept the realm of possibilities open to new and unique content. This messiness allowed for a lack of attachment to each piece of information included in the representation.

The representations revealed relationships and patterns I wouldn't have seen otherwise, informing how I saw the dynamics and systems of the site—for example, layering the existing site with the Central Waterfront design and surrounding developments to reveal the plans for the site. The base data I gathered didn't reveal these themes and relationships by itself.

But when the base data was compiled as part of the exploratory process, new ideas were connected and uncovered. Two designers may look at the same site and have two entirely different outcomes. Each may represent their analysis differently and with varying degrees of detail. This approach pushes for more time spent on site, allowing each designer to gather more knowledge about the place and its context. But each analysis could look different; for example, I was particularly interested in property ownership in each focus area. I decided to show each parcel of land on an aerial map when another designer may have shown this through photographs of each site. This analysis presents the same information but changes the viewer's perception of what's important in the hierarchy of the image. This choice will often vary by firm, each having different priorities as designers. For example, one firm may always put ecology first in analysis and design, while another may be more oriented toward pedestrian access and user programming. This idea implies that developers seek out firms based on how their priorities align with each other.

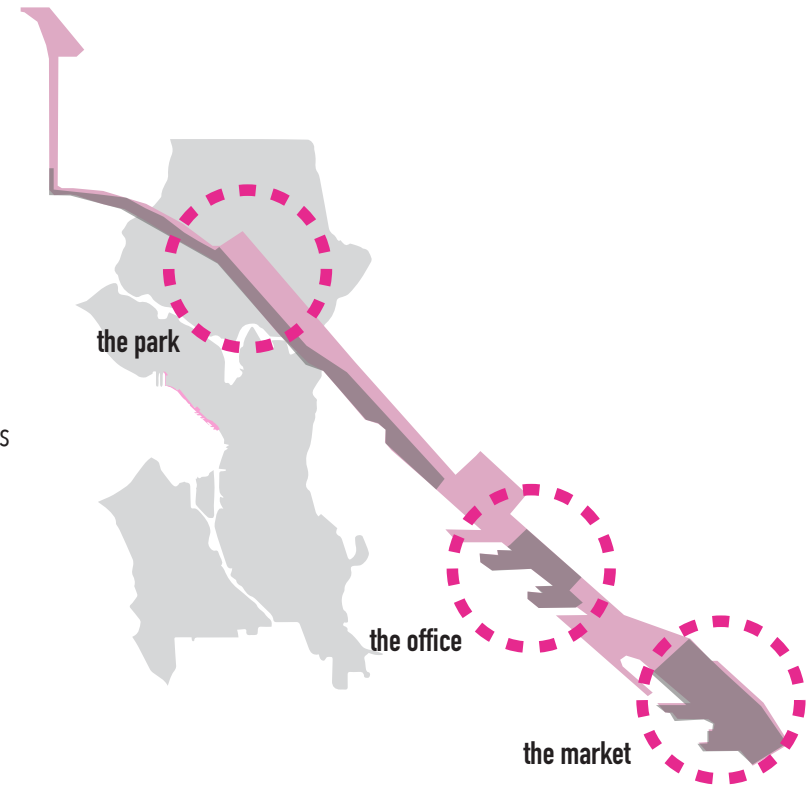
The site and armature phase of the exploration pushed me to use both perception and precision in my methods. In the site phase, I was more focused on representing the feeling of what it was like to be on site, and in the aggregate phase, I represented data about the place that could not be readily found in the field. The aggregate and site phases worked off of each other while the armature phase built an overall framework for the site representing the physical site.

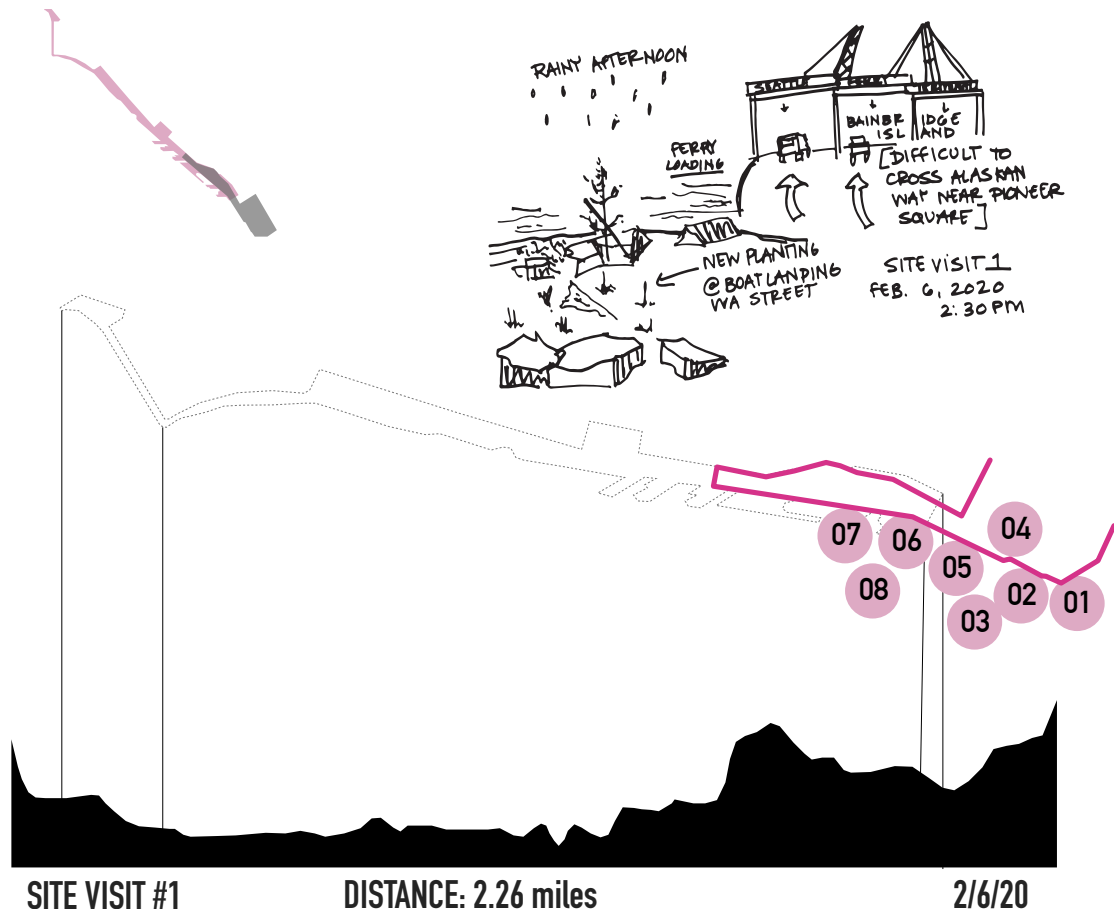
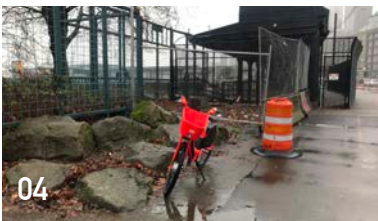
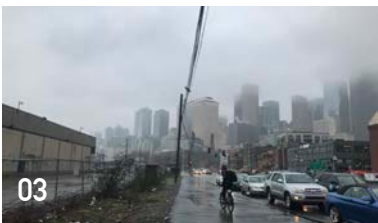
The most challenging piece was combining my findings into the notation. The notation phase pushed me to layer information in new ways and make choices about what needed to be shown and what was unnecessary. In the notation phase, I asked myself what would be valuable to someone proposing a design on this site, and what unique information might change or persuade their site design and process? This is what I considered a high-quality deliverable for the future designers of the site.

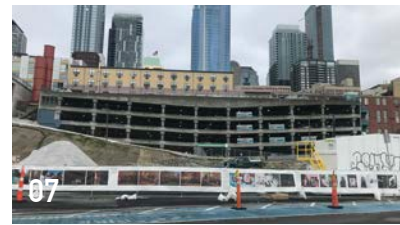
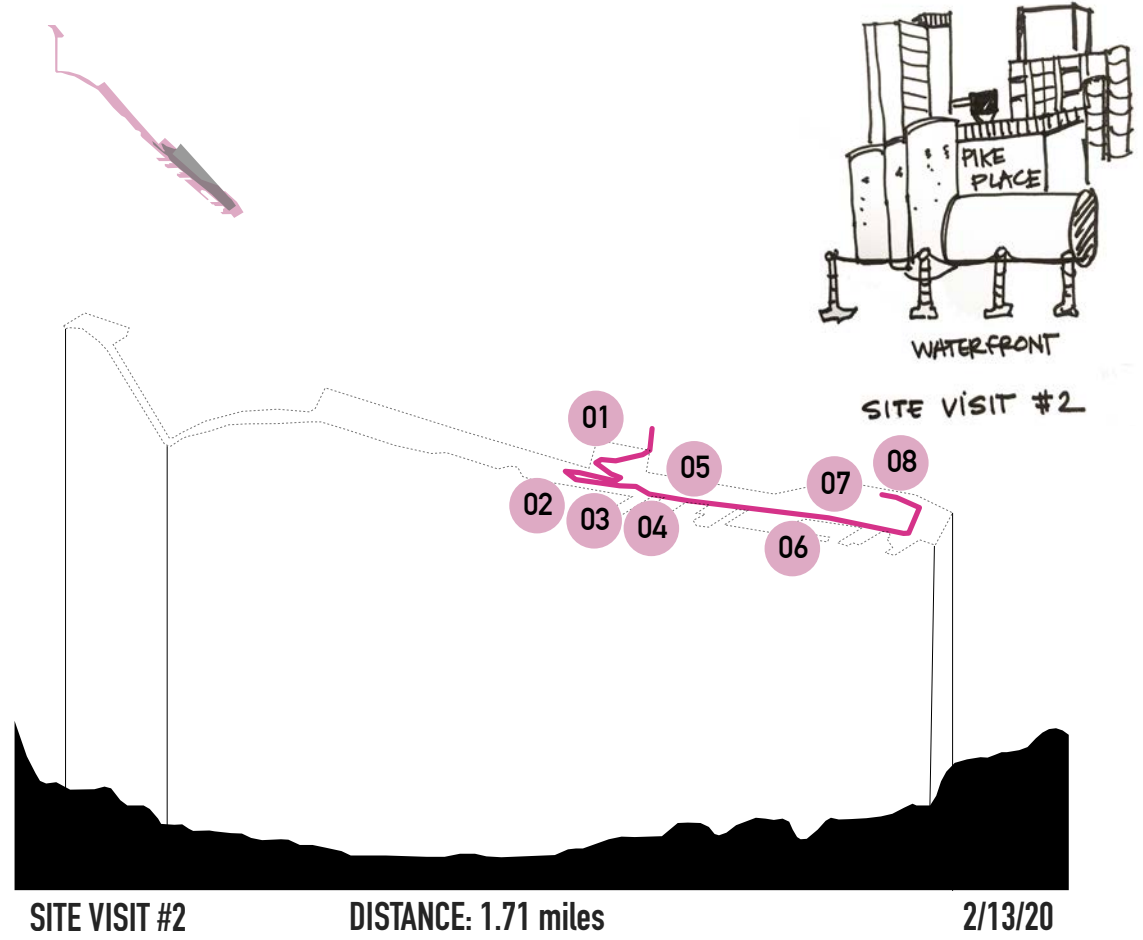
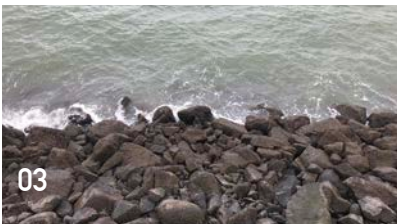
THE EXPLORATION

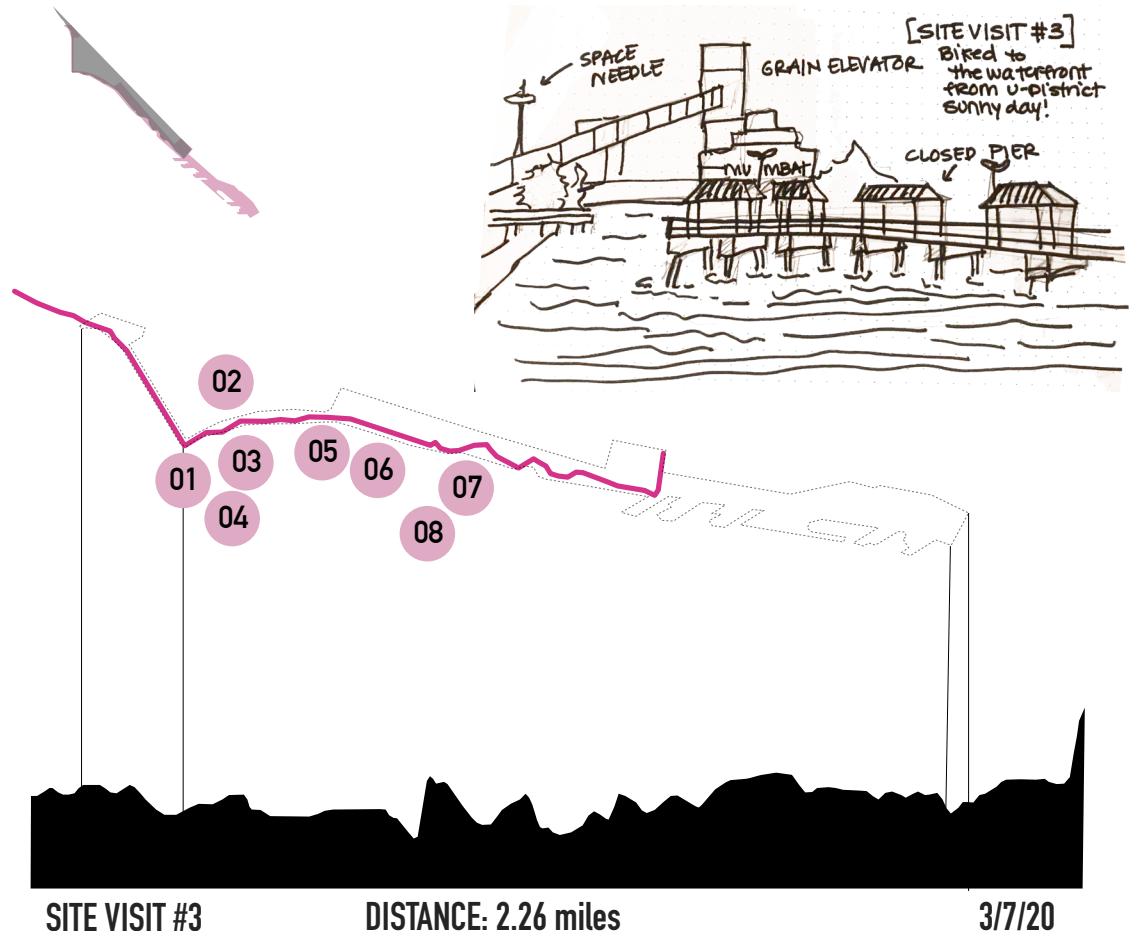
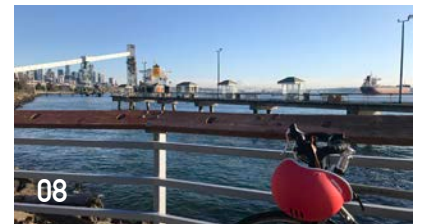
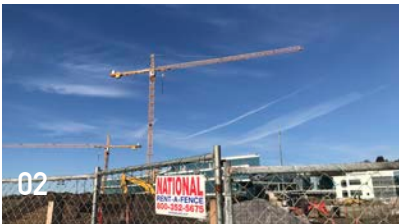
The exploration is the process of applying the methods of the four divisions; site, aggregate, armature, and notation. Through this thesis, I conducted eight site visits between February 6, 2020, and April 19, 2020. Each site visit increased the understanding of the site, creating familiarity with the pathways, roads, and environments.

Because of my pre-thesis familiarity with the site, I was able to be intentional about the places I visited. There were eight site visits conducted, each with a new route providing a look at three focus areas. The areas of focus were the park, the office, and the market. The park looks at recreation spaces and public spaces north along Elliott Bay. The office focused on Alaskan Way between Olympic Sculpture Park and Pike Place Market, home to many office buildings and condominiums. The last focus area was the market; this examined the central waterfront development around Pike Place Market. The site walks varied in length from less than a mile to almost three miles. The site visits were categorized by their length and elevation change and presented in chronological order. Each site visit was looked back upon before planning the next, to more evenly distribute time spent on site between the three focus areas. The profiles of the site walk elevations are relative to the length of the route, meaning the shorter the path, the less drastic change in elevation.











01



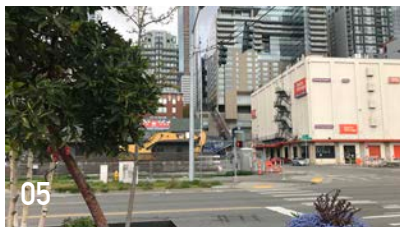
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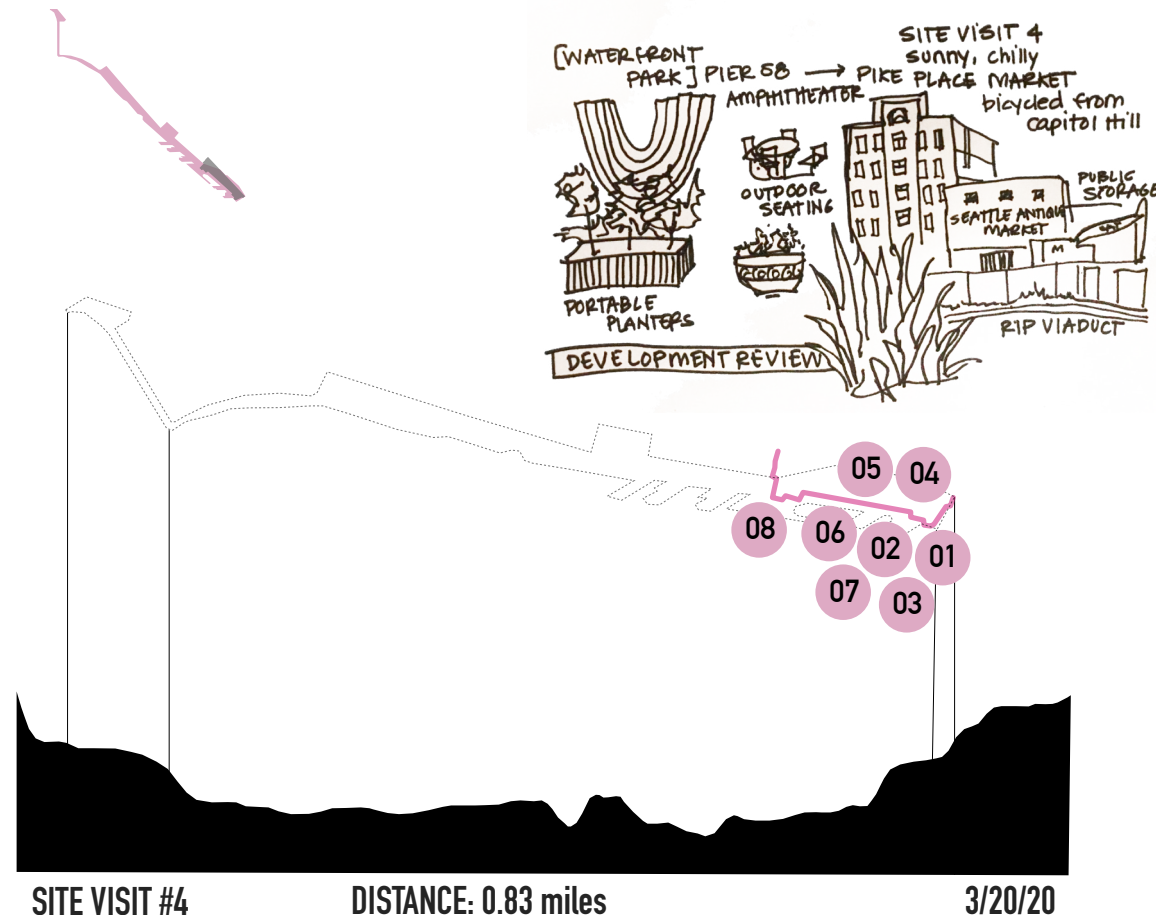
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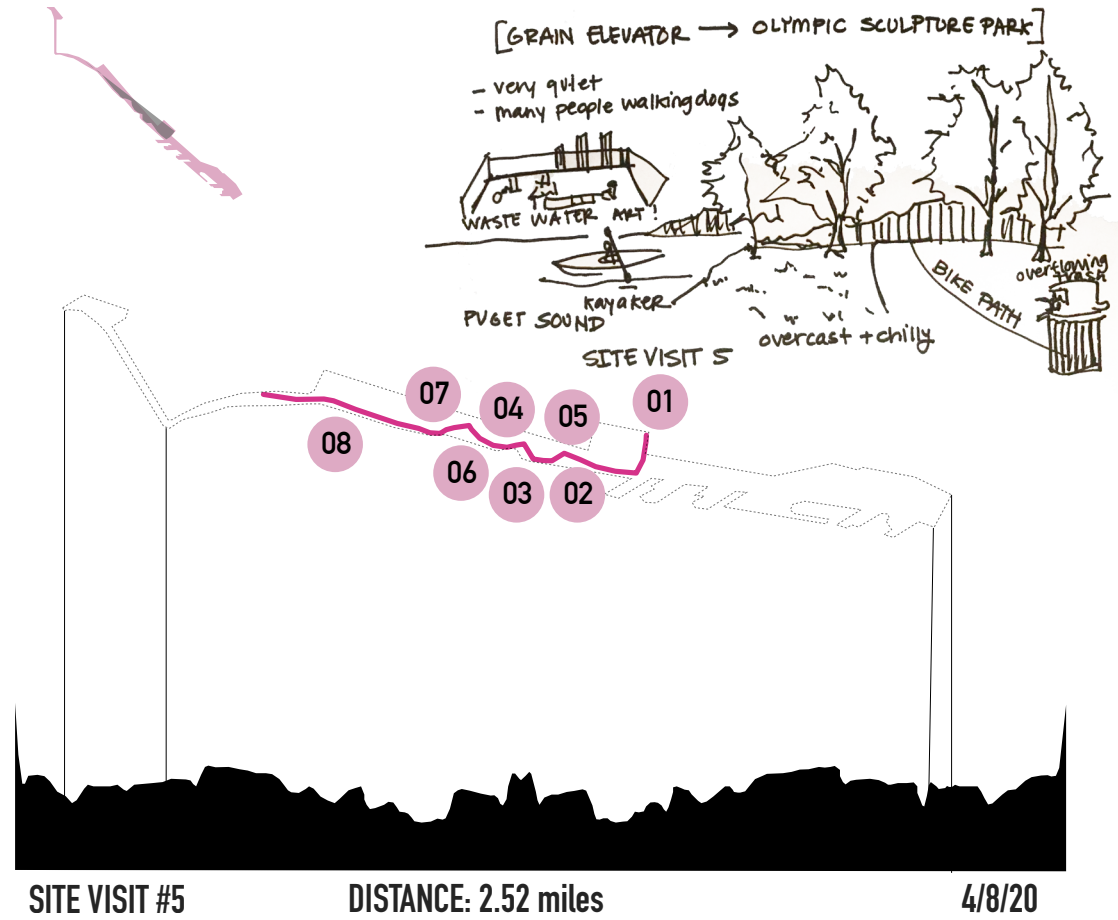
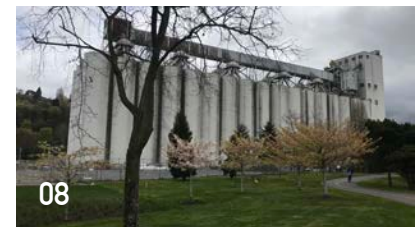
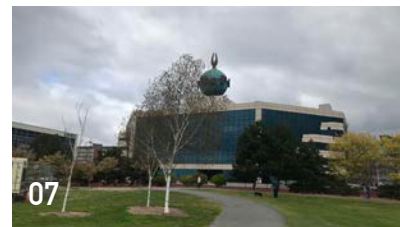
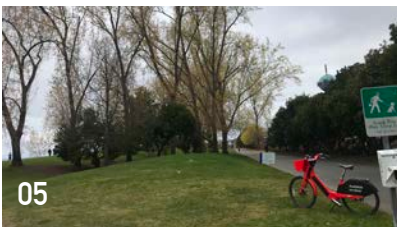


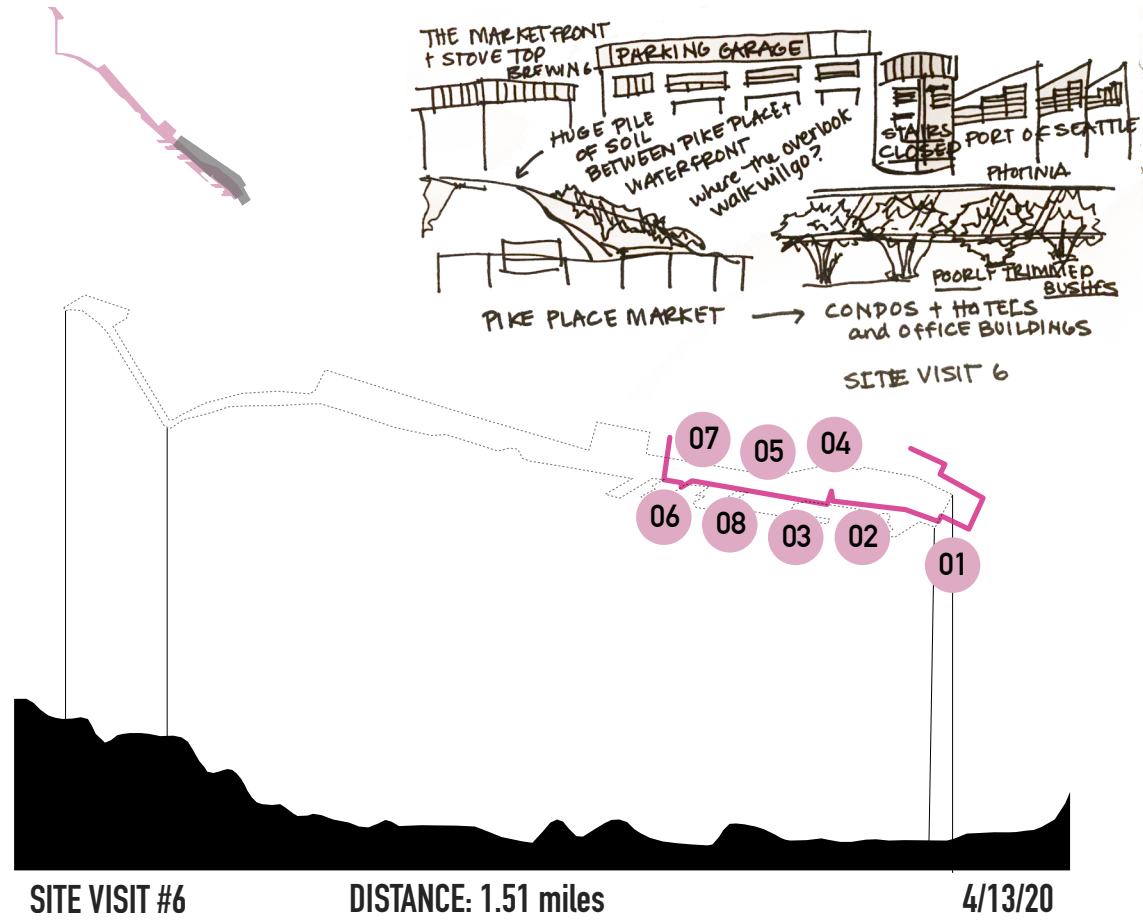
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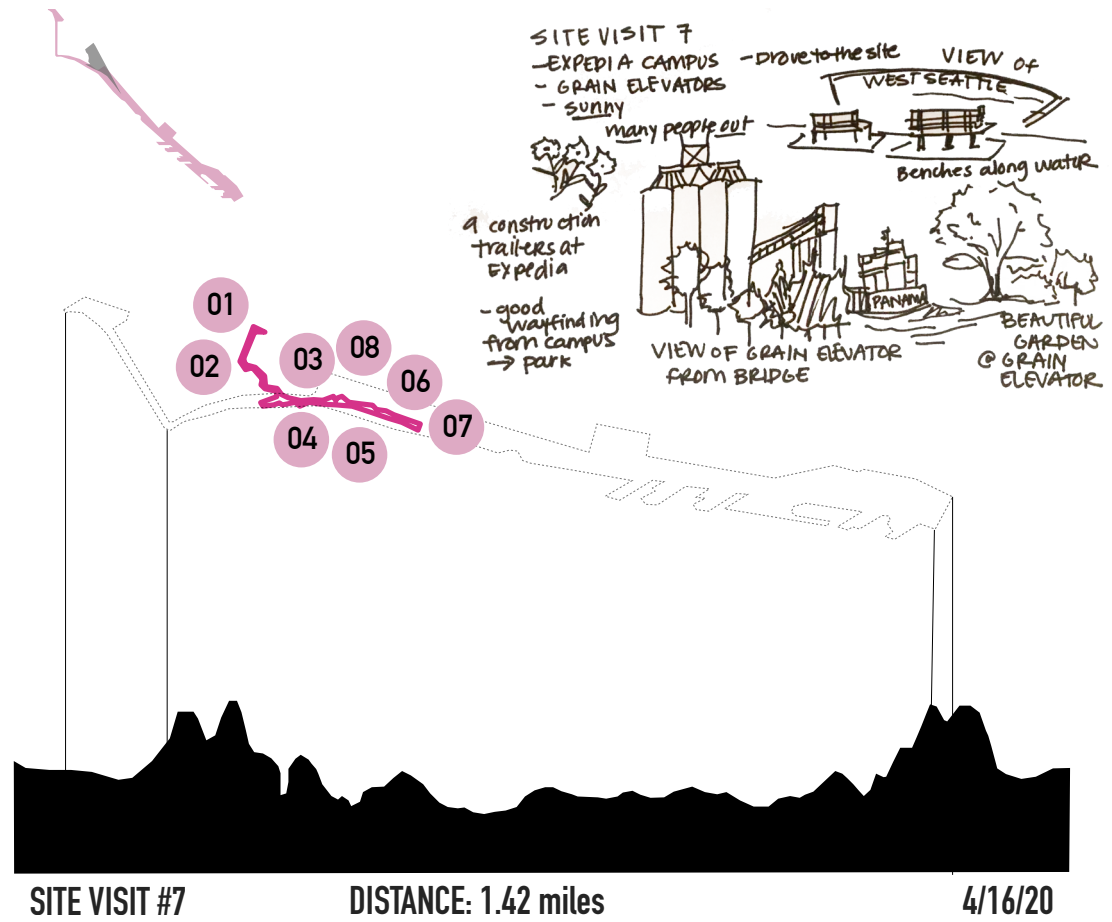
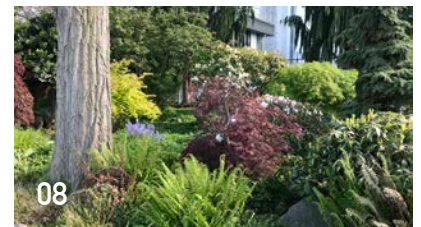
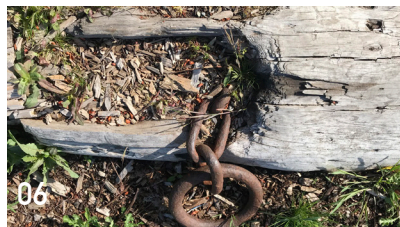


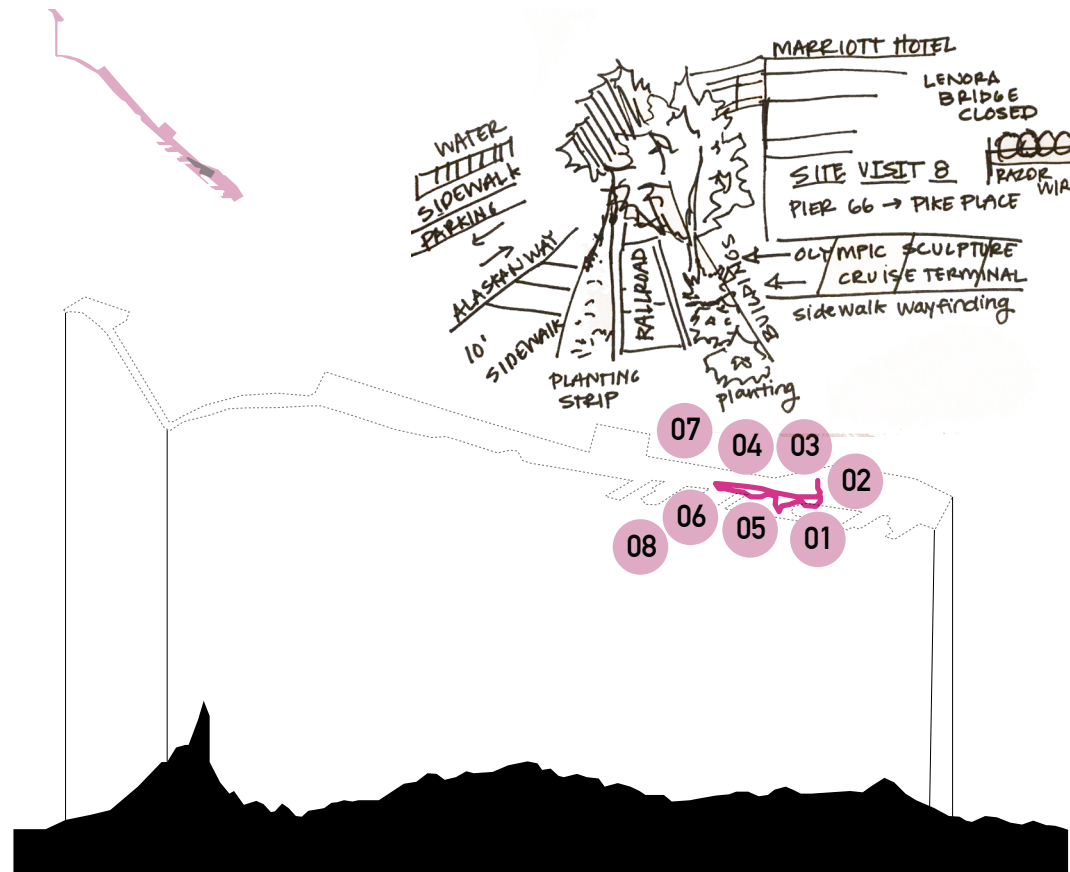
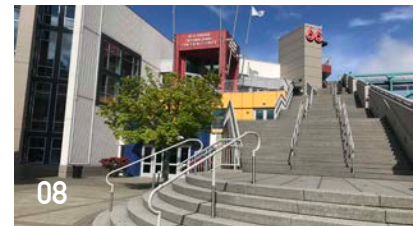
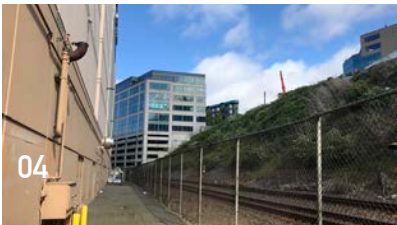
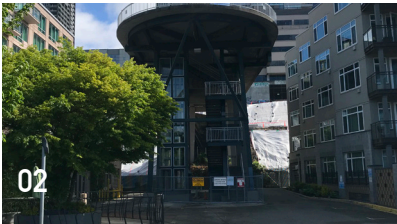
08











SITE VISIT #8

DISTANCE: 0.93 miles

4/19/20

HISTORY OF THE WATERFRONT

To understand the Seattle waterfront today, designers must understand the history of the place. This section examines the history of the waterfront from when the glaciers retreated to the present-day development. Historical documentation was important to this thesis in determining recommendations for future design of the Seattle waterfront.

Early History

About 17,500 years ago, the glaciers retreated north from the Puget Sound region carving out the Puget Sound waterways, including the Seattle waterfront. The first people to occupy Seattle were the Coast Salish many years before the European settlers arrived in 1792. The Coast Salish hunted, fished, and gathered along Elliott Bay during their journeys back and forth between Lake Washington and the Puget Sound.⁷⁰ The European settlers built the first substantial structure, a sawmill, and wharf, in what is now known as the Pioneer Square neighborhood in 1852. In 1889 with Seattle's population at 40,000 people, the Great Fire of Seattle destroyed most of its buildings. The city rebuilt as the Klondike Gold Rush hit Seattle in 1897. The Gold Rush attracted headed to the Alaskan Yukon stopped in Seattle to gather supplies for their journey.

Seattle's connection to the rest of the country grew when it became part of the Great Northern Railway in 1893.⁷¹ In 1911 the Port of Seattle was established, generating trade with China, Japan, and the Philippines. At the same time, the steep slopes of Seattle evened out to infill the tide flats down near the waterfront to make room for development. The Lake Washington Shipping Canal was completed in 1917, allowing watercraft to travel from the Puget Sound to Lake Union and into Lake Washington. After World War II, the city built the Seattle Tacoma International Airport. The ease of access to Seattle by train, airplane, and water made Seattle a centralized hub for economic activity.

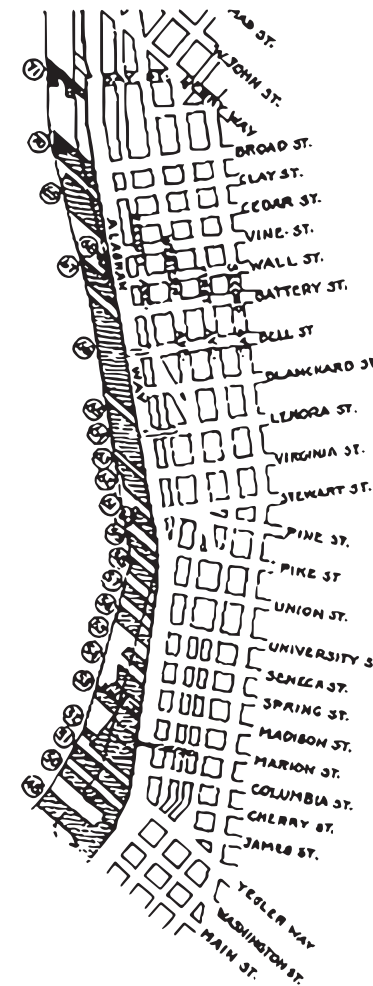


Figure 42 - Seattle Central Waterfront, undated map
Source: HistoryLink

70 Dorpat and Crowley, "Seattle Central Waterfront, Part 1: Overview."

71 Dorpat and Crowley.

History of the Seattle Waterfront

+ 17,500 years ago a glacier retreated North



+ 1792 EUROPEAN SETTLERS ARRIVE



+ INFILL OF TIDE FLATS 1908-1911



+ 1911 PORT OF SEATTLE ESTABLISHED



+ COAST SALISH PEOPLE INHABIT LAND + HUNT, + FISH + GATHER



+ 1897-98 KLONDIKE GOLD RUSH



+ GREAT FIRE DESTROYS the city 1889



+ 1950S ALASKAN WAY VIADUCT CONSTRUCTION



1970s PORT MOVES SOUTH TO HARBOR ISLAND



1990s BELL STREET CRUISE TERMINAL OPENS



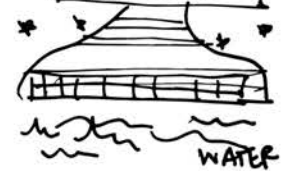
2001 NISQUALLY EARTHQUAKE



2004 VISIONING CHARRETTE



2024 SEATTLE CENTRAL WATERFRONT COMPLETE PIKE PLACE



1970s PIER SHEDS OPEN BUSINESSES + NEW OPEN SPACES



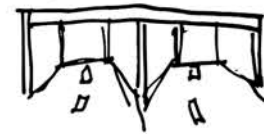
1990s NEW CONDOS + CONSTRUCTION OF WORLD TRADE CENTER



2007 OLYMPIC SCULPTURE PARK OPENS



2019 SR-99 TUNNEL OPENS



From Transport Hub to Tourist Destination

In the early 1950s, the Alaskan Way Viaduct was constructed as a central north/south highway along the water. The Viaduct created a barrier between downtown Seattle and the waterfront. This was a limitation as the port activity on the waterfront dwindled as the Port of Seattle became more oriented toward containerized cargo moving its facilities down to Harbor Island along the Duwamish River. When the port moved south in the 1970s, more recreation and businesses moved into the old pier sheds and the open spaces but were still disconnected from downtown Seattle.⁷² During this time, Pike Place Market and Pioneer Square were improved with new park spaces, including Occidental Park, Myrtle Edwards Park, and Waterfront Park.⁷³

In the mid-1990s, the Bell Street Cruise Terminal opened at Pier 66, bringing more tourists into the area and providing vacation cruises to Alaska. This was when many new condo units were constructed along Alaskan Way as well as the World Trade Center, creating a concentration of housing and office spaces just north of Pike Place Market. The largest attractions on the waterfront today include the Great Ferris Wheel, Pike Place Market, Waterfront Park, Minor's Landing, and the Seattle Aquarium.

In 2007 Olympic Sculpture Park opened and this brought the interest of the waterfront further north towards the string of linear parks north of the Bell Street Cruise Terminal. The park is well known for its ability to connect pedestrians from Western Avenue down to the waterfront without having to cross the railroad tracks or Elliot Avenue, a major road.



Figure 43 - Viaduct under construction
Source: WSDOT

72 Jennifer Ott, "Shaping Seattle's Central Waterfront, Part 2: From 'Back Alley' to 'Front Porch'" (Seattle, Washington, 2013).

73 Dorpat and Crowley, "Seattle Central Waterfront, Part 1: Overview."

The Design History

In 2001, the Nisqually earthquake shook the Seattle waterfront damaging the Alaskan Way Viaduct, a double-decked freeway running along Seattle's waterfront. The Washington Department of Transportation was able to stabilize the structure, but it remained vulnerable to collapse.⁷⁴ This initiated the conversation of redesigning the Seattle Central Waterfront. In 2004 the city began developing a Waterfront Concept Plan kicked off by a 300-person Visioning Charette.

There were several options proposed by Seattle leaders; (1) the city could bore below the Viaduct to create a double-decker tunnel below ground, (2) replace the Viaduct with another elevated highway, (3) remove the Viaduct and replace it with a surface street, or (4) replace the Viaduct with a deep-bore tunnel underneath downtown.⁷⁵ In 2009 the design was approved for a 4-lane wide, 2-mile long, deep bored tunnel. The boring of the tunnel began in 2013 using the world's biggest tunnel-boring machine named Bertha, after Seattle's first female mayor, Bertha Knight Landes.⁷⁶

In 2019 the Alaskan Way Viaduct was demolished, and the new tunnel was opened to cars. The demolition of the Viaduct made room for the redevelopment of the waterfront known as the Central Waterfront Design. The Central Waterfront construction is estimated to be completed in 2024.⁷⁷

74 Nossaman LLP, "Reshaping Seattle's Waterfront with a Two-Mile-Long Tunnel," 2020.

75 Andrew Garber, "Tunnel in Place of Viaduct: A Deal, but How to Pay?," The Seattle Times, January 13, 2009.

76 Yerkon KeDeena, "Bertha Starts Digging: Tunneling Underway in Seattle," Washington State Department of Transportation, July 30, 2013.

77 Waterfront Seattle, "Program Overview."

00 THE BEACH AT EXPEDIA GROUP

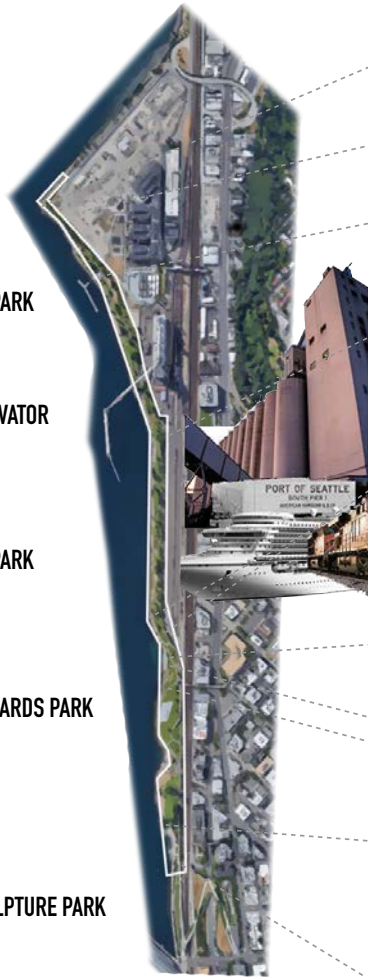
01 ELLIOT BAY PARK

02 ACTIVE GRAIN ELEVATOR

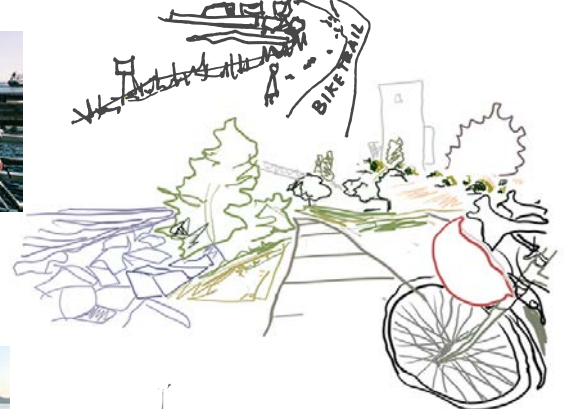
03 CENTENNIAL PARK

04 MYRTLE EDWARDS PARK

05 OLYMPIC SCULPTURE PARK



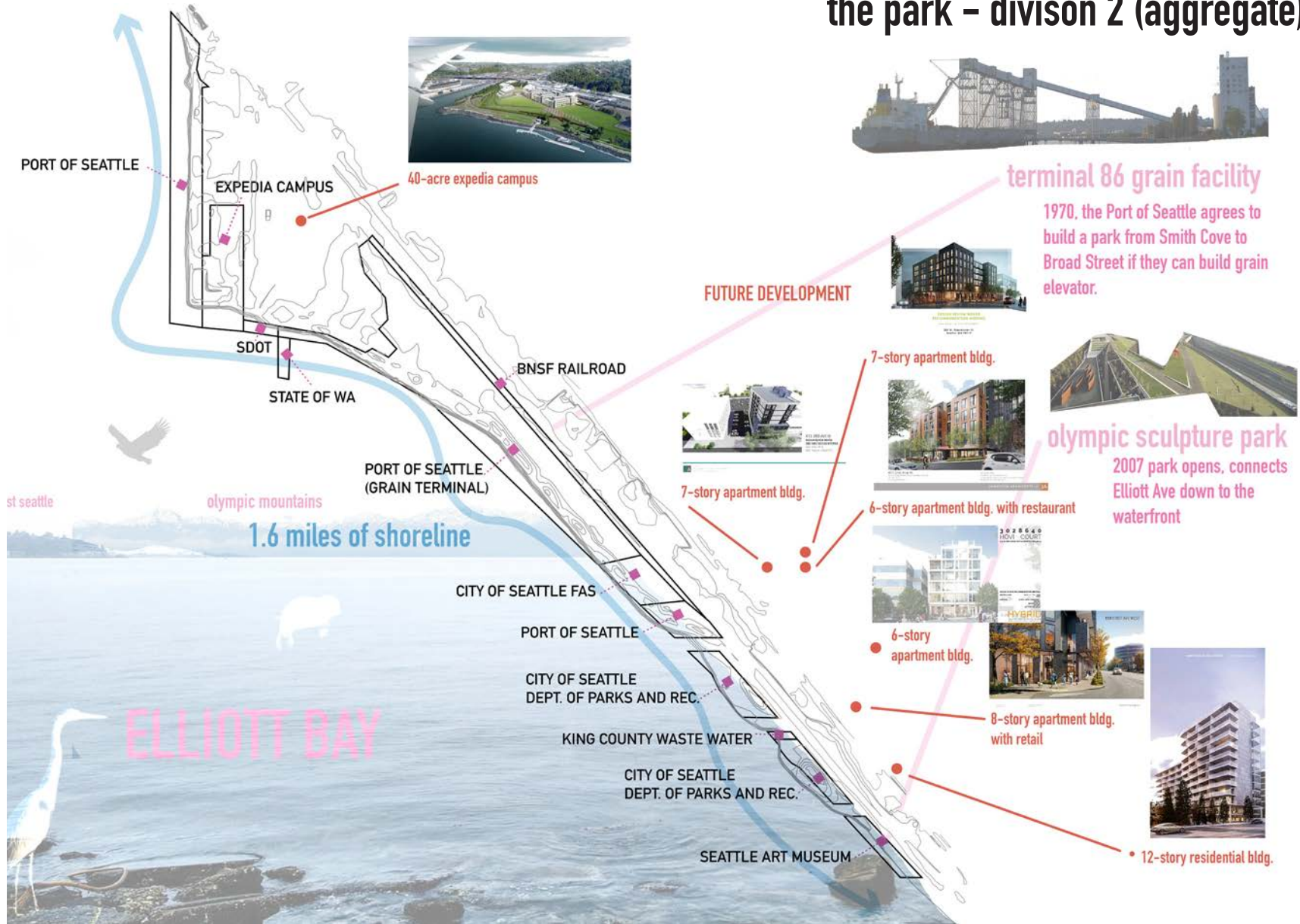
2 "NATURAL BEACHES at SCULPTURE PARK + MYRTLE EDWARDS

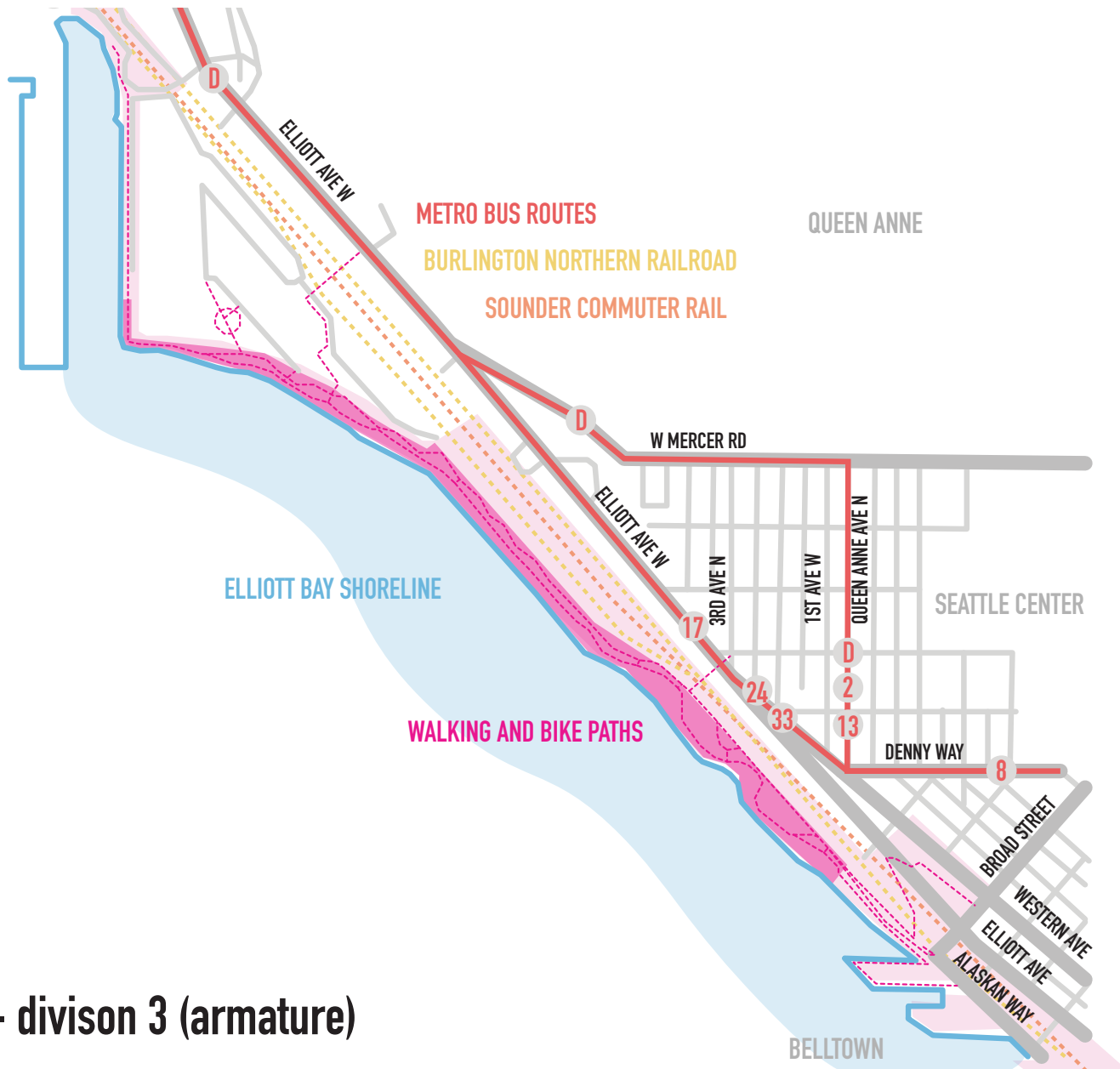


- HUMAN INTERACTION
- LINEAR PARK
 - PEOPLE WALKING / RUNNING / BIKING
 - PEOPLE DRAWN TO PLACES WHERE THEY CAN TOUCH THE WATER
 - SEATING = BENCHES + DRIFTWOOD

the park - divison 1 (site)

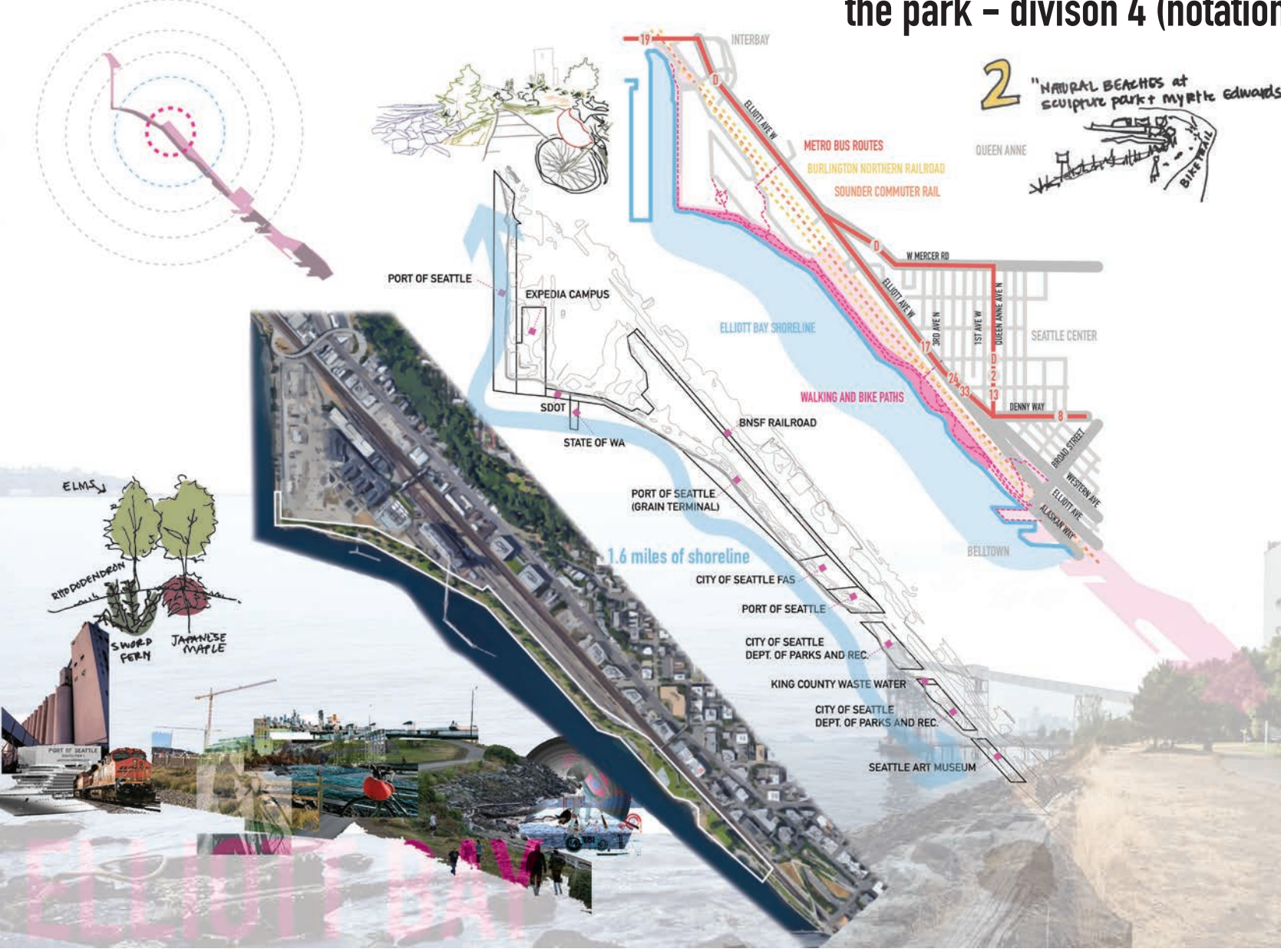
the park - divison 2 (aggregate)

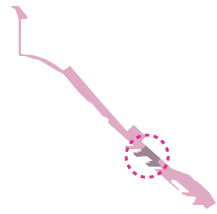




the park – divison 3 (armature)

the park - divison 4 (notation)





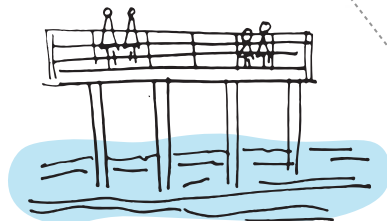
00 OLYMPIC SCULPTURE PARK

01 PIER 70

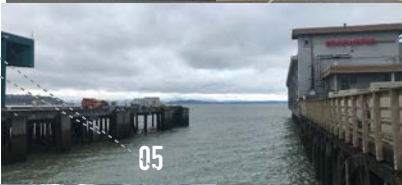
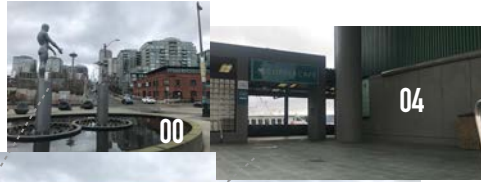
02 PORT OF SEATTLE

04 CLIPPER DOCK

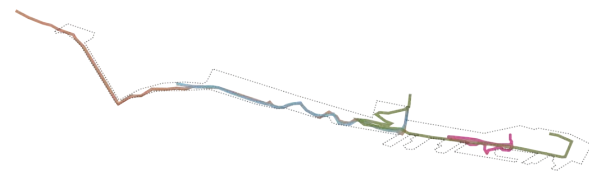
05 EDGEWATER HOTEL



RAISED PIERS
DISCONNECT FROM WATER



CONSTRUCTED 1962



empty
a few people walking
activity very weather dependent
POST-COVID-19
what will this look like?
CRUISE TERMINAL + HOTELS?

the office - divison 1 (site)

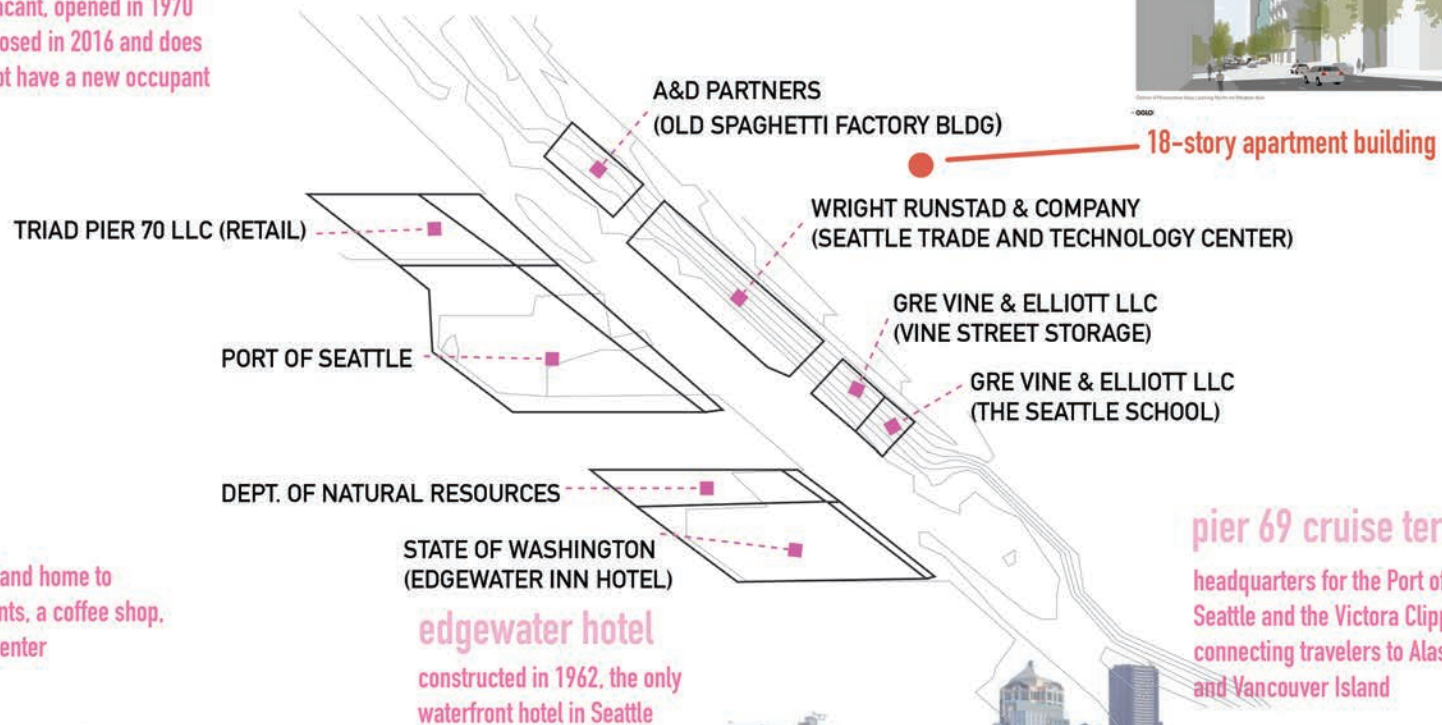
the office - divison 2 (aggregate)

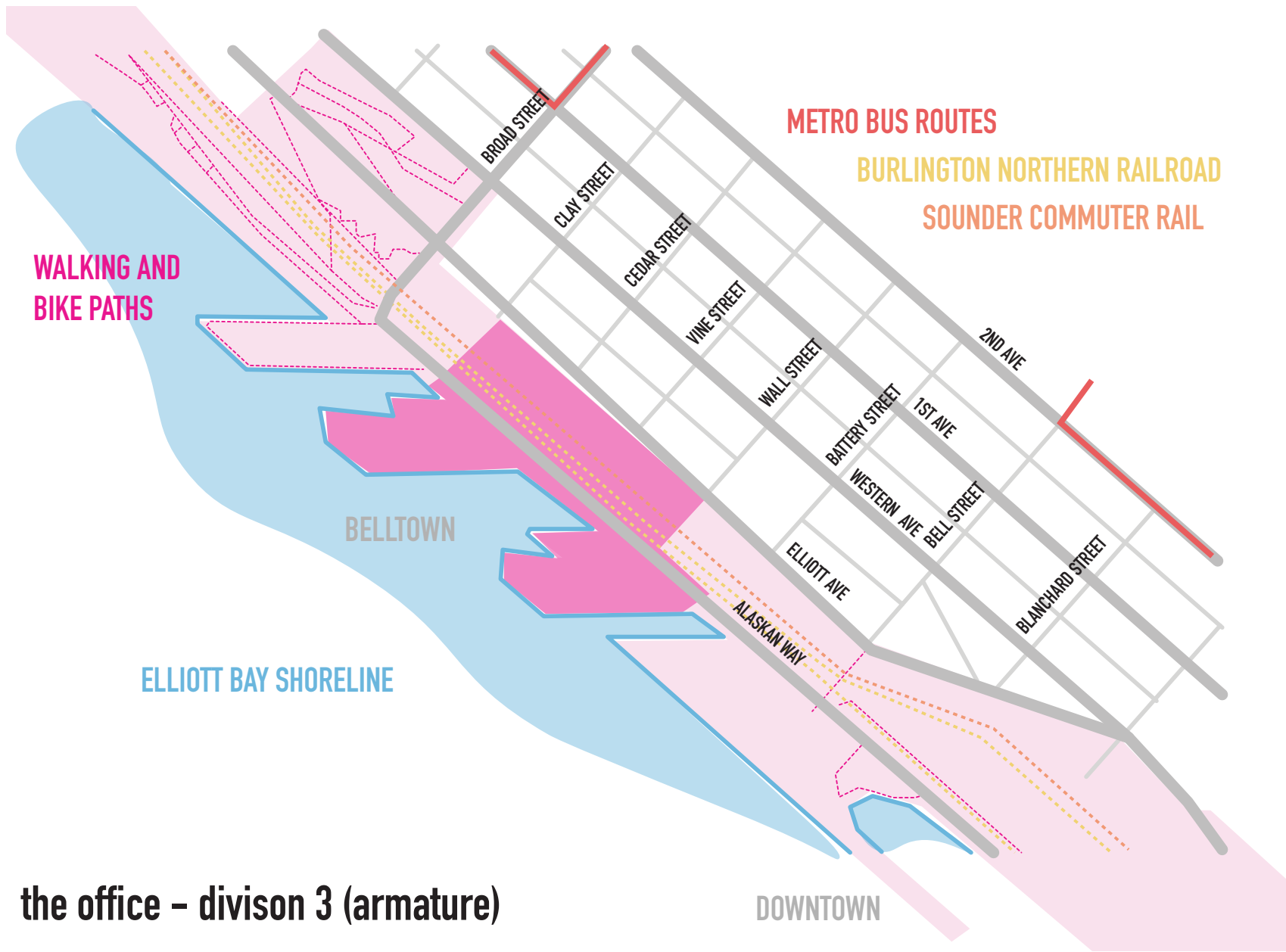
old spaghetti factory

vacant, opened in 1970
closed in 2016 and does
not have a new occupant

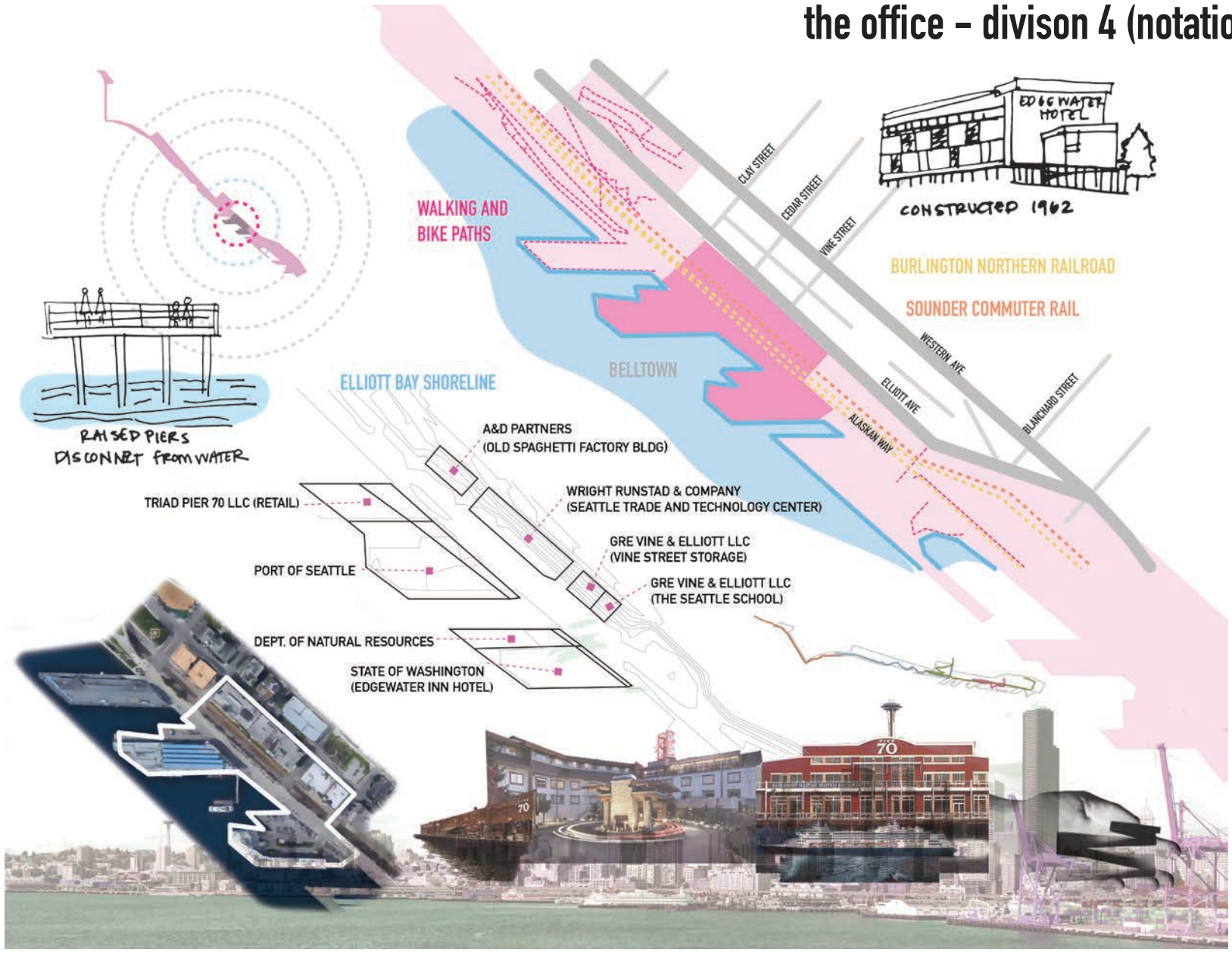


18-story apartment building





the office - divison 4 (notation)



the market - divison 1 (site)



00 VICTOR STEINBRUEK PARK

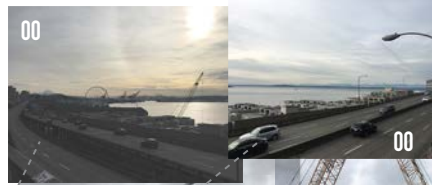
01 PIERS 62 & 63

02 PIKE PLACE MARKET

03 SEATTLE AQUARIUM

04 WATERFRONT PARK

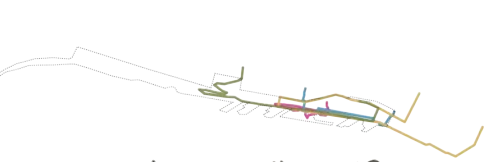
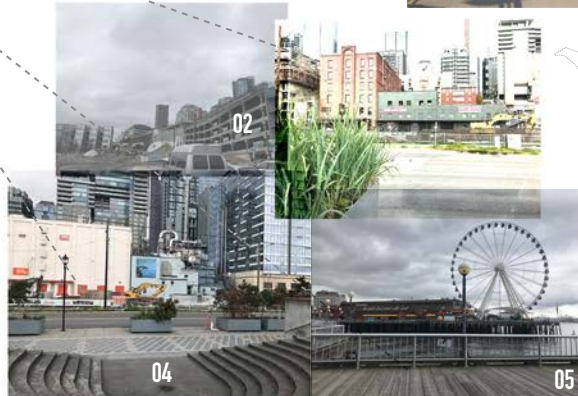
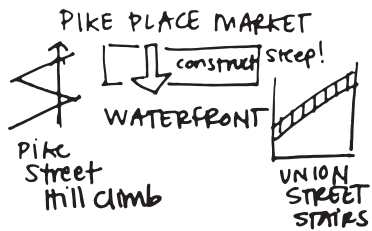
05 THE GREAT WHEEL



SO MUCH SPACE!



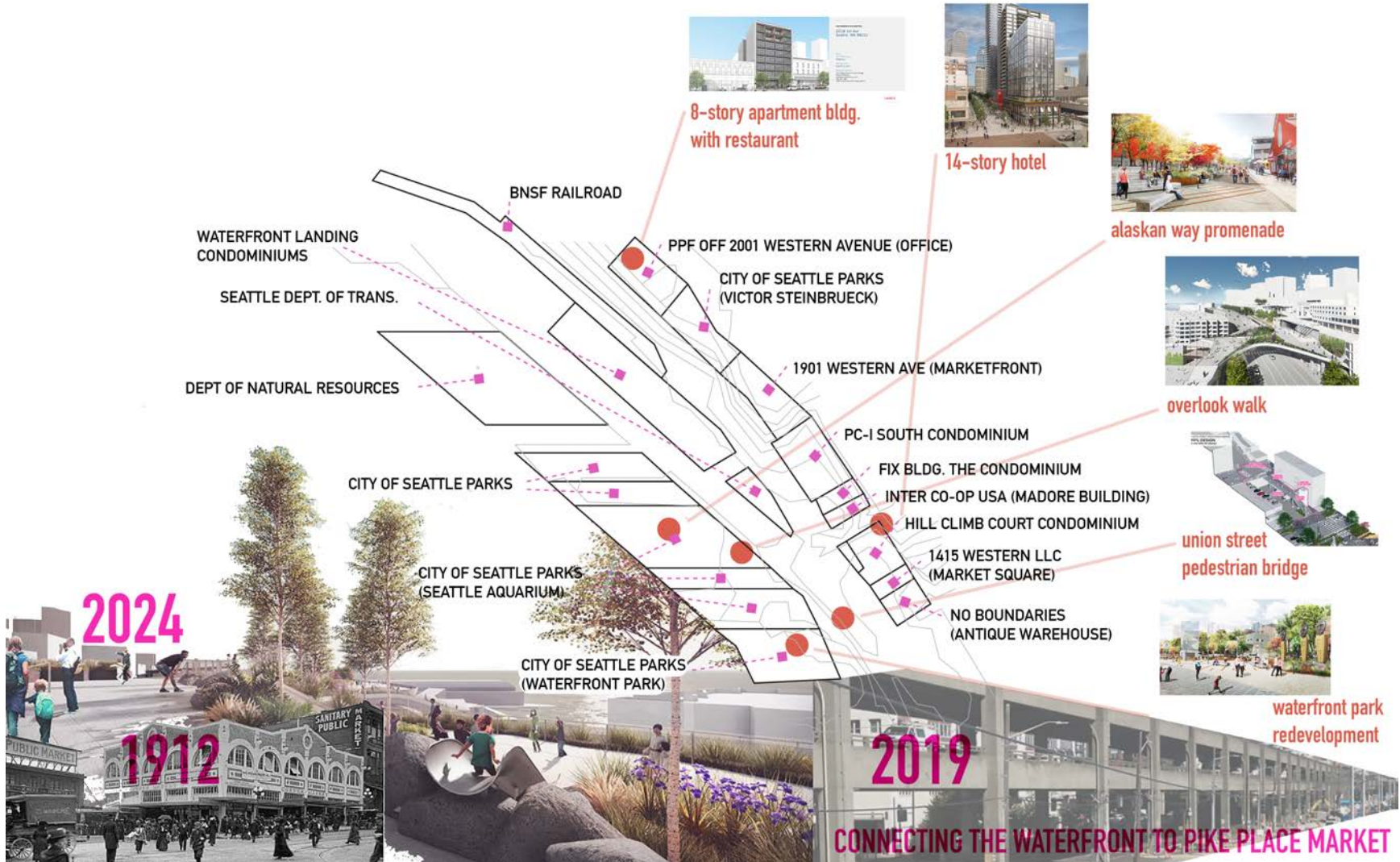
PLANTERS ALONG ALASKAN WAY

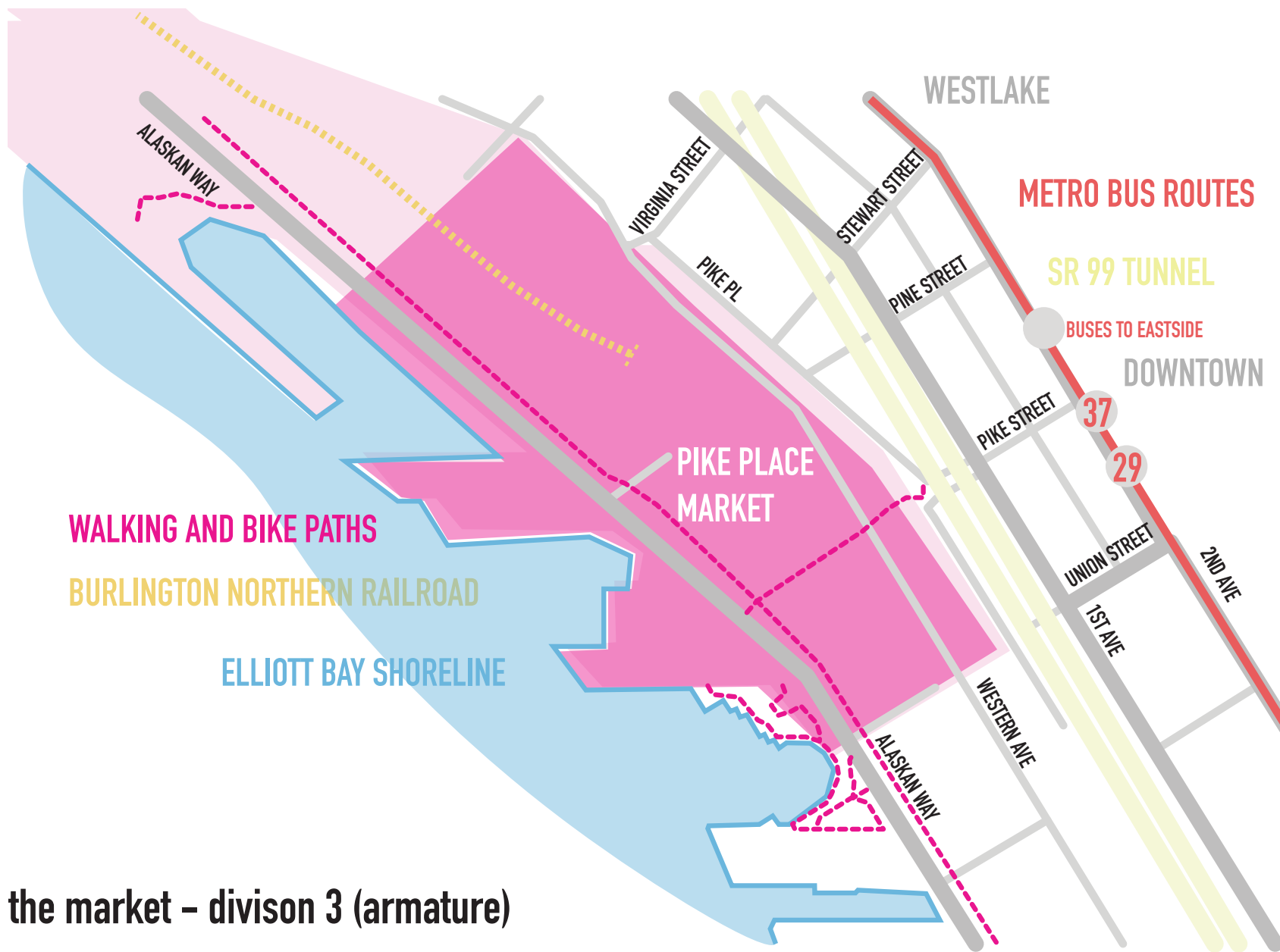


How do I cross the street?



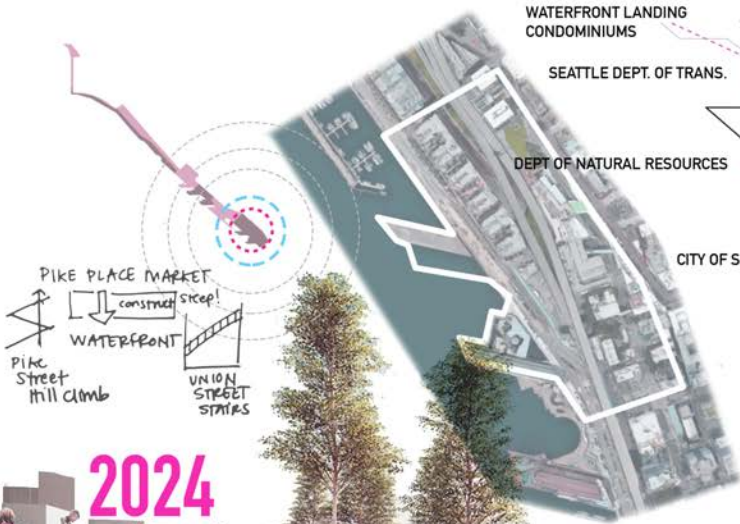
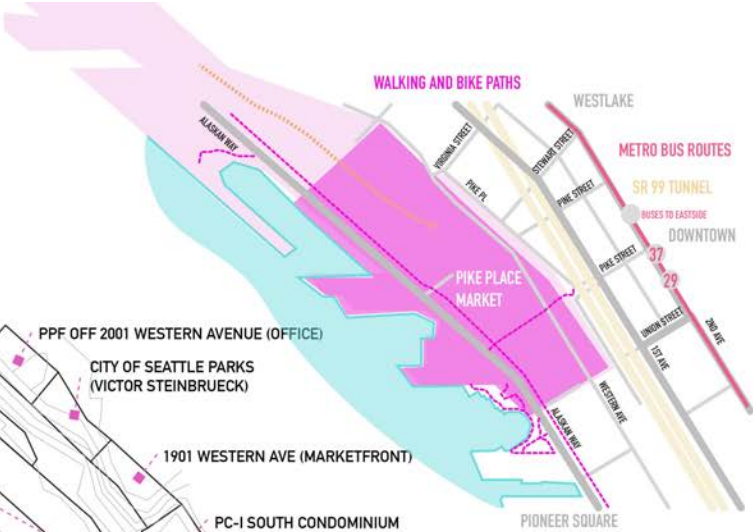
the market - divison 2 (aggregate)



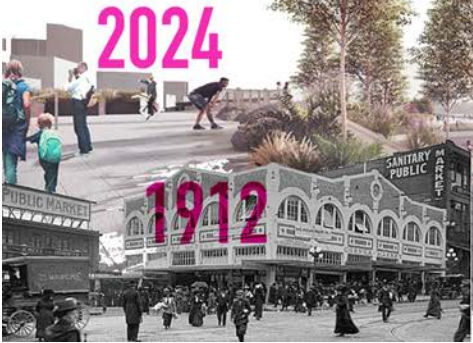


the market – division 3 (armature)

the market - divison 4 (notation)



SO MUCH SPACE!
PLANTERS ALONG ALASKAN WAY



RECOMMENDATIONS

The creation of each graphic has helped my understanding of the on-site relationships and provided me with the information to expand the on-site narrative of each focus area. These recommendations are meant to augment the existing site not to comprehensively redefine the space. The recommendations are broad ideas based on my findings during the site analysis process to steer the direction of further site design and redevelopment. The ideas engage new design concepts for the site focusing on prioritizing pedestrians, educating site users, and creating an inclusive in the planning process. Each recommendation is represented by a conceptual diagram and rendering the application as it would be applied to the site.

PRIORITIZE



SEATTLE WATERFRONT



EDUCATE



INCLUSIVE



1 PRIORITIZE



1 prioritize

Prioritize is the idea of considering people traveling without a car first. This concept would focus on connecting people to transportation via walking paths, trails, bike routes, ferries, and trains in an accessible manner. Each of these modes of transportation would provide connections to and from the waterfront, and the easier it is to access the more people that will use this asset to the city. During my analysis of the waterfront, I noticed how uncomfortable the pedestrian experience is along Alaskan Way and how it can be challenging to access the waterfront using transit without walking for approximately 10 minutes.

This prioritization could take form in many ways. New bus routes that come all the way down to the water with nicer waiting areas, including lighting, cover, and seating. More pedestrian connections down the steep slopes from downtown and the 1st Avenue corridor. Sidewalks could be widened and provide a planting buffer between the road and the sidewalk. Cohesive wayfinding signs could be installed connecting people from downtown to the waterfront. This concept could result in more visitors to the waterfront and better navigation by residents and tourists alike.

2 EDUCATE



2 educate

Educate is an intervention that illuminates the history and ecological functions of the site. The site had seen drastic changes from when the Coast Salish people first occupied it up until the demolition of the Alaskan Way Viaduct. These changes from settling the land, to port and industrial activity, and then a recreation space isn't revealed on the surface of the site. The City of Seattle has also created salmon habitat along the waterfront seawall and there will be planting Washington native plants along the waterfront as part of the Central Waterfront Design.

The educate intervention proposes to provide users of the site with a walk through the history and ecology of the Seattle waterfront. This could take form in many ways, including signage describing and visualizing the history and ecology but also in more creative ways such as playful relics of the past along the water. This recommendation would engage site users in an exploration of the site through visual and sensory representations of the past, present, and future. This could lead visitors around the waterfront, letting them experience the site as a whole, with the eventual goal of rooting it in its history and ecology.

3 INCLUSIVE



3 inclusive

Inclusive would be an initiative to ensure all future planning processes for the waterfront are inclusive and comprehensive. This would provide people with the opportunity to see development along the waterfront that better serves the needs of not only the people who can afford to live in the area but people visiting and using it as open space.

This could take form in a variety of ways. More affordable housing units could be a priority as new buildings are built along the waterfront. This could be done through zoning codes that require a higher percentage of affordable units. More public restrooms and public hygiene stations could be provided for people on the site. This intervention would make the waterfront a welcoming place for all by offering users of the site with more comfortable places to spend time in the public realm.

CONCLUSIONS

This thesis confirmed how vital the site analysis process is to design. When I began this thesis, I was interested in graphic representation that pushed my limits as a designer. I have been intrigued by different representation techniques since the beginning of the Master of Landscape Architecture program. I am interested in the process of creating graphics that are clear and concise and how people react to them. How do people perceive graphics, and how can they better tell a story?

The focus of this process was to push the norms of my design exploration. Throughout my graduate school experience, I was provided with many opportunities to design a site or space. Still, I wasn't able to thoroughly develop my site analysis process in the ways that I hoped to through my graphic representation. I was constrained by time and by moving to the next step of the process. In this exploration, I focused on the process of exploratory site analysis to better understand what makes me successful in communicating graphically. This exploration required analysis of other works to develop a scope for the investigation and idea of how to use different modes to represent something uniquely. These other works included the research of Da Cunha and Mathur as well as Alderman in conjunction with many other design voices, including LaGro, Jenkins, Cosgrove, and Girot. This project varied from previous research in that it applied a combination of both Alderman and Da Cunha's approach, furthering the research of this kind of analysis and using this thesis as testing grounds for future research and application of site analysis.

While the exploratory site analysis process was fun and challenging, I ask other designers to think about how this method can be used in practice. As an academic exploration, it was an opportunity to push my limits of creativity and analysis.



Still, in the professional world, it may take time to justify this process to the design community and to create efficiencies to go through this exploration. Projects like the Seattle Central Waterfront design have limited budgets, and professional designers and planners likely aren't prioritizing the time it takes to commit to this in-depth and perceptive process. In places like research-based firms, these ideas can be explored further to push the design outcomes with this varied approach to the site analysis. This exploratory process can be seen as valuable to provide increasingly better design outcomes. As firms and academia look to the future of site analysis, they must consider new methods for engaging with the site. This site analysis process allows designers to take the time to develop deeper understandings of the patterns and relationships of the site, implying higher quality and long-lasting designs.

To further this thesis, I would be interested in incorporating other media forms into my processes, such as video, model-making, and mixed media. This could take shape in video series of the same places on a site, collages using only found materials from the site, or simulating site activities using a 3D physical model. I would also be interested in looking at an ecologically complex site in a rural location. This application of the exploratory process could lead to a vastly different outcome than the urban waterfront application.

I also believe that community engagement could play a more significant role in this process. Site analysis does not have to be defined only by the site but also by its users. The people who exist in a space have the most in-depth knowledge about that space. It will also be essential to hear from the voices that don't currently have access or feel welcome to the site to understand what their needs are to make it possible for them to visit the site.

I look forward to continuing to push the boundaries of site analysis and research as I begin my professional career in design and planning. I challenge designers and planners to question their existing methods and to push for constant improvement in their processes. These methods will require a willingness to listen to new perspectives and test the limits of creativity and time.

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