

THE FLUID CITY

THE INTEGRATION OF ARCHITECTURE AND URBAN DESIGN TO
RECONNECT THE CITY OF ERIE TO ITS POST-INDUSTRIAL
WATERFRONT AND THE TEMPORAL ENVIRONMENT BEYOND

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ABSTRACT

The Fluid City | The Integration of Architecture and Urban Design to Reconnect the City of Erie to its Post-Industrial Waterfront and the Temporal Environment Beyond

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As a physical edge, urban waterfronts have historically provided both margins and thresholds between city and nature. As the foundation of transportation, trade, and industry, America's ports led to growth and prosperity along its waterways. However, as further settlement and industrialization spread through the United States along with the birth of the rail system, trade shifted from water to land. Since the mid-1970s, cities waterfronts have been re-evaluated and identified as prospects for urban renewal after years of neglect. Often attempts to re-imagine the urban waterfront in the twenty first century lead to one of two strategies: demolition or preservation. These approaches employ either a "carnavalesque" or "mummified" attraction for the interim tourist that further disconnects the city from the water. Thus, urban waterfronts that once served as the catalyst of growth and source of identity of America's cities are now in a state of jeopardy as gentrification erases their fabric and history. In response, this thesis rejects the notion of large-scale waterfront redevelopment. In order for the future adaptation of American ports to be viable and authentic, they must first be appreciated and understood.

This thesis proposes to explore the potential of layering time, terrain, and infrastructure to reveal the intrinsic quality of the post-industrial waterfront of Erie, Pennsylvania and its unique position within the natural harbor of Presque Isle. Through a deep analysis of the connection between the port of Erie, its developed city, and the temporal landscape beyond, this thesis will catalyze the city's existing cultural core and utilize it as the anchor of a continuous seam through the waterfront's edge. It will do so through the development of a new public promenade from the city to State Street pier in the form of a series of activated public spaces that will both celebrate and engage the last remaining relics of the port's memory. By utilizing the integration of urban design, landscape design, and architecture to both analyze and engage the layers of place, this urban waterfront intervention activates and reconnects the city of Erie to the water and the temporal landscape beyond.



fig. 1 intersection of port and city
fig. 2 view ports from city port to landscape

T H E F L U I D C I T Y

*the integration of architecture and urban design to reconnect the city of Erie
to its post-industrial waterfront and the temporal environment beyond*

A THESIS BY KELLY MCCAIN

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fig. 3 Erie harbor | topographic and geological survey

1

INTRODUCTION

*"For whatever we lose (like a you or a me),
It's always our self we find in the sea."
E.E. Cummings*

The waterfront is a liminal space. Situated at the edge of the city, it functions as both a boundary and a threshold. The water's urban edge expresses the tensions between land and water, industry and nature, and past and prospect. As both a boundary and a threshold, Tricia Cusack expresses its edge as "a marginal territory or borderland that becomes invested with layers of cultural and historical meanings."¹ The urban waterfront can thus be seen as an accumulation of time, terrain, and memory: a gradual layering of landscapes of place and infrastructures of past. Because of this, re-visioning the city's waterfront is often indefinable as they are neither within the fabric of the city nor embedded in the natural landscape. It is this in-between quality of urban ports that makes its future in a post-industrial landscape so hard to define.

The urban water's edge served as the path to prosperity for America's port cities. As the foundation of transportation, trade, and industry, the United States waterways served as the highways to growth and development through the industrial revolution. However, as further settlement and innovation spread inland through the birth of the rail system, trade shifted from water to land. As a result, Richard Marshall notes in *Waterfronts in Post Industrial Cities*, "former industrial waterfronts of many cities now exist as underutilized parcels, separated from the physical, social, and economic activity of the rest of the city."² Thus, urban waterfronts that once served as the catalyst of growth and identity of America's ports now stand as voids between past industries and future use, awaiting a new identity as the threshold between the city and the water.



fg. 4 "carnavalesque" demolished urban waterfronts

bilbao | sydney darling harbor | chicago navy pier

fg. 5 "mummified" preserved urban waterfronts

savannah | brooklyn

PROBLEM

*"The inhabited edge of the sea gains its identity
by being contrasted with the uninhabitable ocean."
Tricia Cusack*

Since the mid-1970s, cities abandoned urban ports have been re-evaluated and identified as prospects for urban renewal. Port cities of all sizes in dire need of revitalization look to their waterfronts as beacons of a new attraction, identity, or industry. Urban design policies have routinely approached the redevelopment of post-industrial waterfronts through the implementation of two strategies: demolition and preservation. Port cities looking to re-brand their identity have often demolished their historic infrastructure to rebuild the waterfront anew. Spotting their shores with a series of disjointed cultural attractions, urban waterfronts seeking rejuvenation through the "Bilbao Effect" consequently achieve a fringe of detached carnivalesque structures. Conversely, historic ports tied to the legacy of their past implement preservation as mummification, encapsulating the remaining fabric as it stands; thus "freezing" it in time. Despite the difference between of these urban approaches, both strategies have proven to further isolate the waterfront from the city as well as the natural environment beyond.¹ By building attractions for the interim tourist rather than a public connection between the city and the water, waterfront redevelopment strategies continue to sever the city from its geographical place and social identity.

Often such attempts to re-image the urban waterfront in the twenty-first century have accomplished nothing more than creating a new identity through the falsification of "place". What urban policies continue to reject is that the waterfront is a liminal space: it is a margin that is neither within the city fabric nor immersed within the environment. It is the threshold between man and nature that established the very location and prosperity of the developed city. In order for waterfront redevelopment to be viable and authentic, it must first be appreciated and understood as an accumulation of tangible and intangible layers, unique within every post-industrial port. Thus, we must first emphasize Richard Marshall's stance that, "The waterfront is an expression of who we are as a culture."²



fg. 6 layering of urban waters edge
city of Erie | dobbins landing | presque isle

APPROACH

*"At every instant, there is more than the eye can see,
more than the ear can hear, a setting or view waiting to be explored.
Nothing is experienced by itself, but always in relation to its surroundings,
the sequences of events leading up to it, the memory of past experiences."
Kevin Lynch*

The project begins with a place. Erie, Pennsylvania, a rust-belt port located along the southern shores of Lake Erie is of notable significance not only for its advancements as one of the most important Great Lake harbors, but also its unique position within the glacial peninsula of Presque Isle. Erie, like many post-industrial port cities, is in the process of redeveloping the waterfront in search of a new identity. The city has begun to create "places" or public attractions along the waterfront through demolition of an industrial past, but it lacks any notion of the city and the port as a cohesive "place". Through the implementation of strategies of both preservation and demolition, Erie's sporadic waterfront development is erasing its memory and identity. Thus, the city and the waterfront are on the threshold of either an innovative rebirth or a treacherous divide.

In an attempt to imagine the Erie Waterfront as an authentic and activated space, this thesis will approach its redevelopment as a *Fluid City*. Kim Dovey introduces this concept by stating, "The Fluid City is fundamentally about a city becoming "unsettled". We generally approach cities as settlements, as sites or places where forms and identities have become stabilized... the focus here is on understanding urban change as a confluence of flows of different forces."¹ Dovey's approach stresses that there is no ideal urban or architectural ideology. Rather, she acknowledges the city as a unique accumulation of layers of memory, terrain, and infrastructure that changes and adapts over time. The Fluid City thus appreciates the past as the foundation and memory of place while understanding that its form is not final but open-ended: a continuous construction of layers that reveal who we are, where we have come from, and where we are going.

Thus, this thesis is introduced through the layering of time, terrain, and infrastructure to reveal the intrinsic quality of the waterfront of Erie, Pennsylvania and its unique natural environment. Proposed as a seam between the city, the port, and the landscape, the interventions are realized through the discovery and understanding of the layers of place. Programmatically, this thesis will catalyze the city's existing cultural core and utilize it as the anchor of a continuous seam through the waterfronts edge. It will do so through the development of a modest public promenade supported by two transit pavilions to further connect the city to the port and the port to the peninsula.

Architecturally, the problem is one of designing a seam of transition through the in-between qualities of the post-industrial waterfront. By viewing the promenade as a new layer upon the site's construction, the architecture serves as a means of access to understand and embrace its depth. Thus, the pedestrian's procession through the site is sequenced by a series of activated public spaces which engage the last remaining relics of a lost industry. This sequence will reveal the infrastructure of a man made landscape, frame the view beyond, and anticipate the transition from the built city of Erie to the natural Peninsula. The design of this new public realm will serve as a model for demonstrating the potential for architecture to mediate, respond, and contrast the existing site's history and memory as a new layer in time. By integrating urban design, landscape design, and architecture, this urban waterfront intervention is an argument for an activated discovery of place by reconnecting the city of Erie to the water and the temporal landscape beyond.

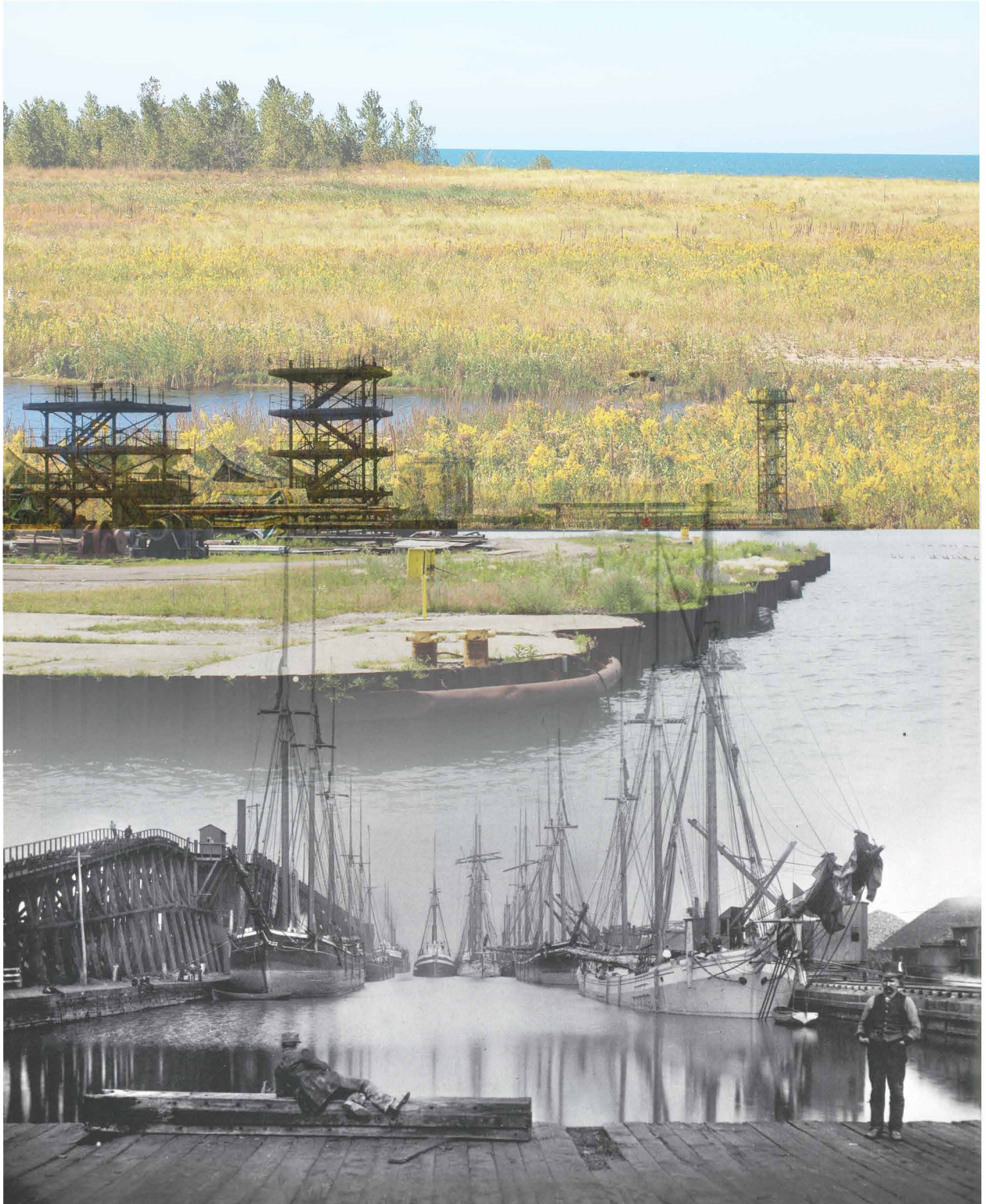


fig. 7 layers of time, terrain, and infrastructure
anchor line | port of Erie | presque isle



fg. 8 The Deluge, John Martin
fg. 9 Seascapes, Hiroshi Sugimoto

2

IDENTITY AT THE WATERS EDGE

*“Water is the driving force of all nature.”
Leonardo da Vinci*

SYMBOLISM AND THE WATERFRONT

The Utilitarian and Symbolic Nature of Water

Water is the source of life. As the dominant element encompassing over 71% of the Earth’s surface and 65% of the human body, it is both a vital necessity and a power of force that sustains all living things. Since the beginning of time, human fascination with water has been symbolic and utilitarian.¹ Stephen McCool notes in *Water and People*, that “There is simply a presence of water: it has a magical quality that attracts and moves the spirit like no other element.”² The physicality of water is animated and full of motion; a tangible force that flows, pours, absolves, cleans, and renews both the landscape and the soul. Of the four basic elements, water has the appearance of being most human and alive as French philosopher, Blachelard describes it as “a complete being, with body, soul, and voice.”³

Throughout time, people of all cultures have attributed to water a beauty, mysticism, and power beyond compare. Reserved for its life-giving properties, water holds a sacred significance for many cultures. The consideration of water as a preeminent symbol associated with creation, fertility, rebirth, renewal, good harvest, and natural forces can be traced to the mythology of ancient civilizations. From Sobek, the ancient Nile River god, to the Native American “hop snake” rain dance, to the modern-day Christian baptism, the spiritual dimensions of water can be seen as mans attempt to understand, rationalize, and control both our human existence as well as the lawless forces of nature.⁴

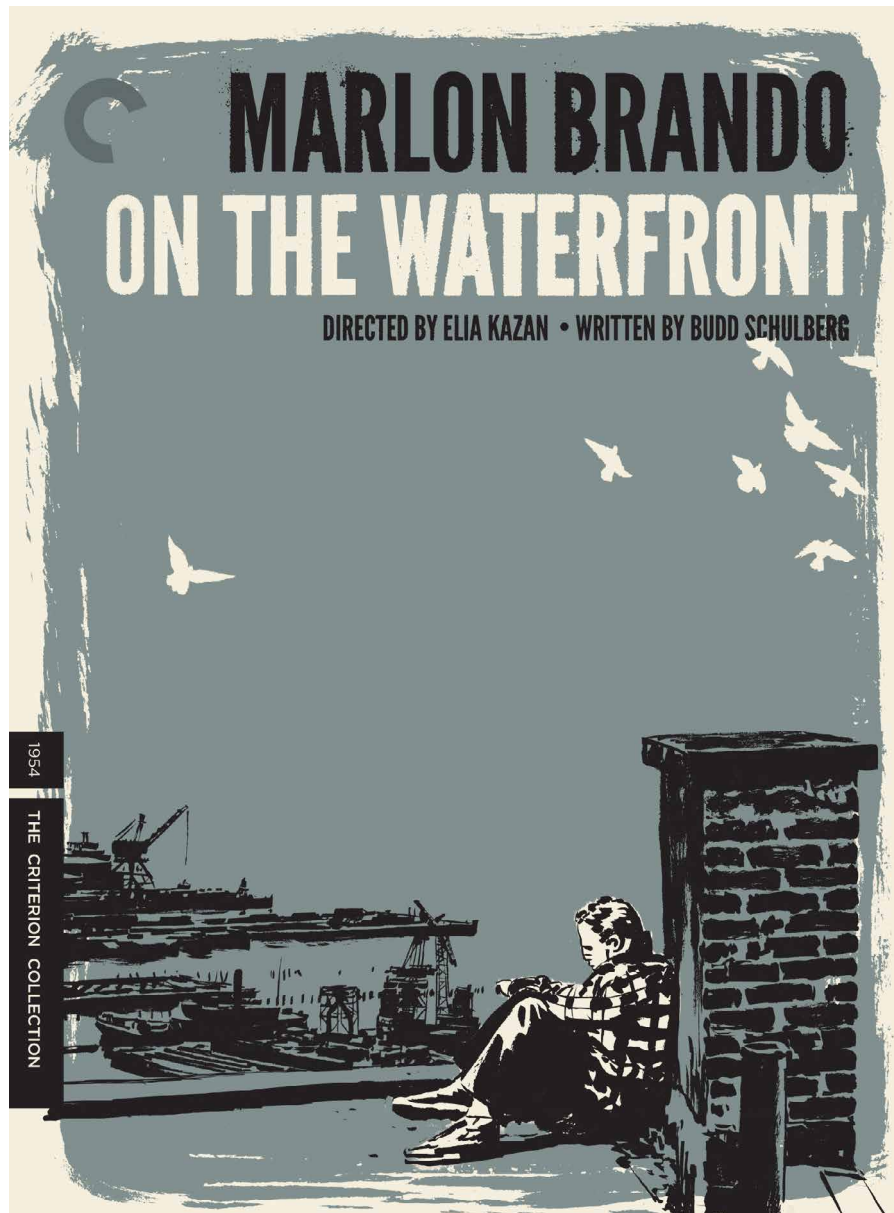
The utilitarian aspect of water, foremost as the primary human resource, was the foundation of the beginnings of ancient civilizations throughout history.⁵ Thus, the presence or absence of water has long shaped human society and infrastructure. As the foundation of civilizations were built on the shift from hunting and gathering to a need for an established system of agriculture, industry, and society, the waters edge acted as the catalyst of growth and development. The earliest of civilizations were founded and nurtured along the fertile flood plains of the Tigris and Euphrates Rivers. The Romans, removed from the waters edge, deployed advanced methods of aquatic engineering through the infrastructure of aqueducts, reservoirs, and public baths to sustain life. In modern times, human exploration and development of the majority of the Western World was influenced by the pattern of water availability; it affected the location and size of settlements and created a network and infrastructure of trade and industry.⁶ Thus, the presence of a sizable body of water spawned the American port through the landscape of trade and surplus of natural elements and amenities.

Dual Identities of Historic Waterfronts

As the most visible part of the landscape, historic ports provide a city with a rooted sense of character and the unique opportunity to chart the evolution of public history for a more meaningful social attachment to its landscape and identity.⁷ Through this visibility and palpable quality of place, theorist Alice Mah explains that “port cities are noted for being different, they have their own particular identities, their notions of: independence, freedom, dissent, and cosmopolitanism, {as well as}....their own perceptions of: work, justice, politics, and culture.”⁸ Further, the waterfront is identified through contradictions; it is both inward and outward, local and global, physical and transcendent. This duality provides port cities with a formulated sense of place, as their location within the landscape is fixed and defined while their outward global connection is limitless, embodied by the emptiness of the horizon. Tricia Cusack personifies the waterfronts duality in *Art and Identity at the Waters Edge* by “[the sea] is the place where observers can look out on an apparent void, beyond which lie other lands, other nations; conversely, looking back at the coast from a boat, one has the illusion of seeing the native land as a complete entity.”⁹



fg. 10 Great Lakes Excursion Steamer "Tashamoo"
fg. 11 Union Ship Canal, Buffalo NY



fg. 12 On The Waterfront, film, 1954

At its core, the working waterfront has been the staging point for the import and export of goods. Adjacency to the waters edge was an immeasurable advantage to the development and sustenance of the city and the vitality of industry. Richard Marshall explains this as, "The edge between city and water, between the production site and its transport basing point, was the most intense zone of use in the nineteenth-century city."¹⁰ As the wealth and growth of cities on the water was streamlined through trade and manufacturing, the identity of place was thus formulated through the working waterfront. The intersection of man and nature provided the opportunities and amenities for port cities throughout history, and as places of industry they were inherently messy. To some they were places that were to be avoided at all costs.¹¹ Thus, Richard Marshall further notes that the collective memory of the city and the waterfront has "tensions and insecurities with this identity: port cities are rebellious, creative, fiercely independent, and outward-looking, but they are also marginalized and in danger of being left behind."¹²

Theorist Alice Mah personified the dual character of port cities through the identification of their opposing nature, lying on the edge between "blue and black". She notes, "For centuries, writers have described port cities as exotic places of cosmopolitanism and vibrant cultural exchange, connected to the blue of the sky and of dreams. Port cities are surrounded by blue, the blue of water lapping at the shores, extending out into distant horizons... But port cities are also represented as black places of crime, violence, poverty, and social exclusion."¹³ Mah contests that the symbolism of blue and black personifies the social history of American waterfronts as the colors have dichotomous meaning in popular culture, representing the contrasts between reality and imagination, death and life, and night and day. The "blue" of the waterfront was a place of opportunity and adventure; the intangible presence of water and boundless edge of the horizon invigorated the port with a sense of life and prospect as an outward entity. However, the "black" nature of the waterfront responds to its marginalization from the city. Historically, the city port was a place for the working class: fisherman, tradesman, and laborers. Consequently, the urban waterfront was cast as the back door of the developed city; cracks within the fabric allowed for illegal activity, violence, and crime. Thus, Alic Mah notes that local memory and cultural representations of the historic waterfront "have a crucial impact on how cities are imagined politically as places to live, work, and visit. The act of imagining places connects deeply with collective memories, identities, meanings, and values... {port cities} show nostalgia and pride for the former era of bustling waterfronts, and regret over the poverty and deprivation that have followed in the wake of decline"¹⁴

DEFINING THE WATER'S EDGE

The Shifting Waterfront as a place of Transition

The waterfront occupies the edge of the city as both a boundary and a threshold. Defined by both the urban and the natural, the waterfront is layered with a multitude of edge conditions and sense of transitions. Due to the complexity of the characteristics of the waterfront, we must first understand the concept of "the edge". Kevin Lynch defines such edges in his book, *Image of the City*, as "the boundaries between two phases, linear breaks in continuity: shores, railroad cuts, edges of development, {and} walls. Edges may be barriers or they may be seams."¹⁵

As lateral references, edges are experienced as an allied union rather than an isolating barrier; the edge acts as an attraction by being ambiguously characterized as either a node or a threshold.¹⁶ In regards to the changing conditions of the edge between city and water, the breadth of the urban port can be understood wholly as a site of liminality. Cusack further explains that "{the water's edge}, often the site of social-cultural as well as a geographic divide, whether between countries, regions, or within a city, may function as liminal spaces."¹⁷

Liminal spaces are those that are in-between. They are neither one way nor another; they are in a state of transition and exist as both a boundary and a threshold. Waterfronts, in their essence, are liminal spaces. The word *liminal* comes from the Latin word *limens*, meaning "threshold", and is defined as such a place "beyond which a sensation becomes too faint to be experienced." As a liminal space, the waterfront can be experienced as layers of transitions and thresholds between both the tangible and intangible elements. The water's edge is both a place of physicality and transcendence that draws one inward and focuses one outward. Richard Marshall states that the liminality of the waterfront creates "spaces not only on the margins but also in transition and encompassing considerable ambiguity...They are on the edge in more ways than just their physical location. And they are de-territorialized spaces in that their identity is constructed by relations within a complex network of flows, but also territorialized by the particularities of the many fixities that exist in and on them at any historical moment in time."¹⁸



fig. 13 conditions of waterfront's edge
steel sheet pile pier | gravel infill | wood dock | presque isle

The urban waterfront is always changing, a place of tensions between man and nature and fixity and flow. Thus, the waterfront is in a constant state of motion and fluctuation, both physically and sociologically. Tricia Cusack conceptualizes the waterfront as a network of "fixity and flow" as "the physical territories of cities are considered to be the relatively fixed nodes of a network, whereas the flows of people, energy, and information connect these nodes in a network of relations."¹⁹ Thus, the fixed and yet shifting landscape between land and water is filled with tensions and contradictions. Man's built environment is fixed and consequently contradicts the flowing tides its rigidity breaks. Further, the temporal fabric of the port fluctuates with the flows of people, industry, and time. This tension between fixity and flow is what makes the urban waterfront an energized edge that is characterized as a unique space of opportunity and possibility. Thus, Kim Dovey states that urban waterfronts are the "warehouses of memory, always haunted with a myriad of possibilities for meaning and behavior... In opposition to the ways in which space becomes place through the construction of territory and identity...{thus} urban spaces becomes fluid through the practices of everyday life."²⁰

The Tensions between Industry and Nature

The waters edge, whether shore or riverbank, can be broadly defined as a mutable space between land and water. As a temporal edge, it is in a constant state of change and transition as the waters momentum both sculpts and erases its definition with each passing day.²¹ Tricia Cusack's *Art and Identity at the Waters Edge* depicts the edge's temporality by stating "The seas edge varies from level areas of sand or pebbles to cliffs. It lends itself to ambiguity and unpredictability as it erodes and shifts with the action of flowing water."²² The waters edge is arguably undefined as it is in a constant state of change. Thus, tensions arise between industry and nature as the static city counteracts the fluidity of the environment. Gene Desfor, in *Transforming Urban Waterfronts*, states that "On the waterfront, material forms of nature, such as water and land, intersect with each other with great fluidity. And human attempts at manipulating the complex relationships among these components have left urban waterfronts not as pristine places, but as prime examples of how socio-nature has been produced through inseparable human and biophysical processes."²³

Throughout history, the manipulation of the landscape into spaces for industrial production and manufacturing defined the notion of progress.²⁴ Though the exploitation of the environment was the catalyst of many port cities in America, it has also caused the degradation of the natural environment that served as its lifeline for hundreds of years. Thus, the post-industrial waterfront, though full of memories and nostalgia, is an accumulation of centuries of filth and misuse. Thus, Kim Dovey concludes that “The waterfront is a boundary, an edge condition between the stable striations of the city and the smooth flows of water. It is a spatial “between” condition that mediates a series of dialectic oppositions... It is the mediation of these oppositions which lends the waterfront a good deal of its experiential potency, the occupation of the between zone.”²⁵



fg. 14 industry and nature
Erie sand and gravel | presque isle



fg. 15 The High Line, James Corner, New York
fg. 16 Danish Maritime Museum, BIG, Helsingør
fg. 17 Quilotoa Shalalá Overlook, Zumbahua, Ecuador
fg. 18 Olympic Sculpture Park, Weiss/Manfredi, Seattle

3

INSPIRATION

A primary objective of this thesis is to neither demolish nor preserve the existing fabric of the post-industrial waterfront. Rather, it strives to exemplify how a new layer of architecture can both respect and respond to the port's remaining structures, creating a dialogue between the past and the present. In *Narrating the Urban Waterfront*, Hurley stresses that urban ports "present an opportunity to chart the evolution of public history in the context of broader redevelopment strategies and assess their potential for a more meaningful social attachment to landscape and place."¹ Thus, the architecture must act as a new layer upon the past to begin to provide an identity between the city and the waterfront.

Based on the complex scope of the land, city, and memory of Erie, Pennsylvania, the design must draw inspiration from urban, landscape, and architectural typologies. The selection of precedents was chosen to represent the varying conditions of design interventions identified within the needs of the site. The precedents and their application will thus act as a guideline for the intervention to:

REVEAL
ENGAGE
FRAME
ANTICIPATE

The precedents were further selected for their complex layering of public spaces. In both plan and section, these projects exemplify how the combination of architecture, urban, and landscape can work together to bring new life to the public realm. The precedents not only act as a guide to formal design strategies, but further realize material, contrast, scale, and program. Thus, these design applications will allow the thesis to sculpt the connection from the city to the water through a dynamic layering of formal and informal spaces.

REVEAL

The High Line

James Corner Field Operations & Diller Scofidio + Renfro

New York City

2009

Part architecture and part landscape, the High Line public-park has created a dynamic engagement between past and present through a unique oasis within the chaos of New York City. The 1.45 mile-long elevated park occupies the former West Side industrial railway used for freight trains from 1930 – 1980 and has quickly become one of the most beloved and well-utilized public spaces within the city. The design of “Agri-tecture”, a term coined by Corner, is the synthesis through agriculture and architecture and was inspired by the overgrowth of the self-seeded railway as it was found in the early 1980s after years of abandonment.² The blurring between paving and plantings creates a ‘pathless landscape’ and encourages the public to meander the elevated park as they wish. Thus, the “unsettled” nature of the High Line is not only a response to the vibrancy and energy of New York, but an appropriate design approach to allow the new layer of urban engagement to change and develop overtime.³

With over twenty entrances to the elevated park, the High Line not only provides an oasis for residents and visitors to New York, but seamlessly connects neighborhoods together while initiating a spark in development and real-estate along its edges. Mayor Bloomberg noted that the project's success had created somewhat of an urban renaissance: by 2009 over 30 projects were planned or under construction nearby. Thus, the ever-growing and adapting High Line stands as a test to designs capabilities to not only inspire a new social realm, but spark authentic development and rejuvenation within our cities.



fg. 19 collage of the high line

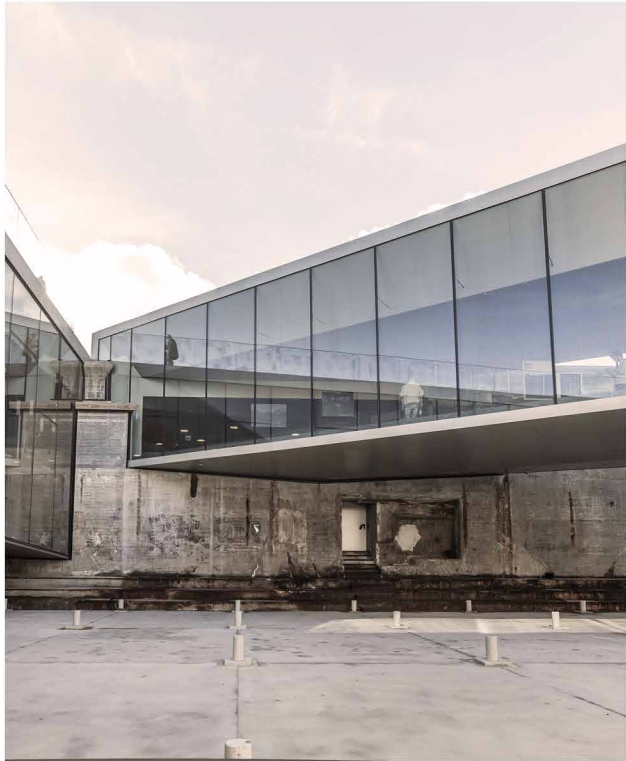
ENGAGE

Danish National Maritime Museum

BIG
Helsingør, Denmark
2013

The Danish National Maritime Museum stands as one of the most innovative architectural adaptive reuse projects to date. Located in Denmark near the fifteenth century Kronborg Castle, the new museum had to “find its place in a unique historical and spatial context.”⁴ Rather than creating a new structure within the historic landscape, the museum is submerged below ground and arranged in a continuous loop around a 60-year-old dry dock. A series of glass bridges through the dock’s “void” provides a rich understanding of the left over infrastructure; the interior structure not only bridges between galleries but “floats” within the dry dock while the exterior creates a new urban connection between the castle and the harbor.

The Danish National Maritime Museum’s rich layering between public and private and old and new creates a subtle yet bold layer within the historic landscape. The simple engagement between the light glass bridges and the heavy concrete shell not only preserves the memory of a maritime settlement, but allows the community to experience the infrastructure at varying levels of understanding. Thus, the new layer of infrastructure is both bold and sensitive in the creation of a new civic engagement through a privatized structure. Bjarke Ingles, the founding partner of BIG attributes the buildings success to leaving, “the dock as an urban abyss...the museum with an interior facade facing the void at the same time offers the citizens of Helsingør a new public space sunken eight meters below the level of the sea.”⁵ Thus, the layered engagement of the Danish Maritime Museum stands as a test to creation of a heightened understanding to our built history through a new layer of engagement.



fg. 20 collage of the danish maritime museum

FRAME

Quilotoa Shalalá Overlook

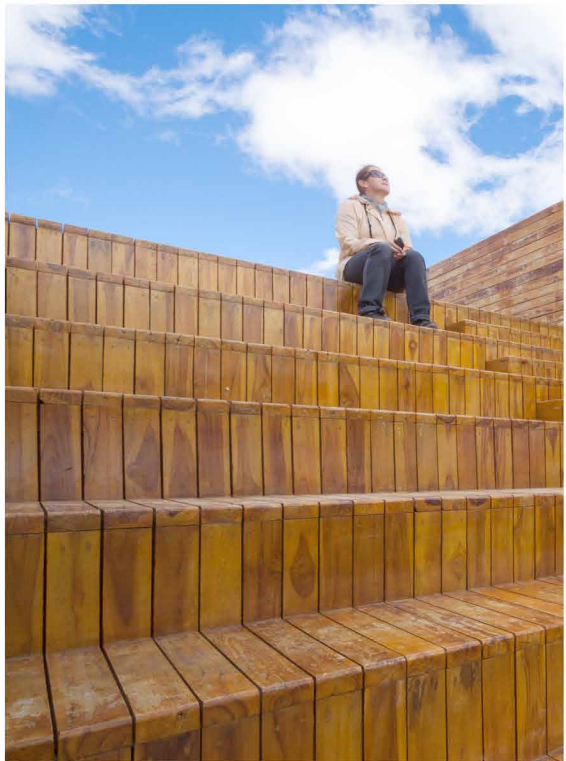
Jorge Javier Andrade Benítez + Javier Mera Luna + Daniel Moreno Flores

Zumbahua, Ecuador

2013

The Quilotoa Shalala Overlook, though a mere viewing platform within the landscape, utilizes its structure to not only engage, but enhance its surrounding environment. Nestled within the Quilotoa Crater in the Andes Mountains, the active volcano at 3,974 meters above sea level has become a touristic site of growing popularity in Ecuador. In response to the increasing foot traffic, the Ecuadorian Tourism Ministry commissioned the overlook to not only provide a point of refuge for the tourists, but to create a guided path to preserve the natural wildlife of the area.

The concept of the viewing platform was conceived through the attempt to provide visitors the opportunity to see the landscape in a different way. Thus, constructed amongst the low grasses along the ridge of the crater, the steel-framed wooden platform is realized through the intersection of both an extended and submerged experience. The top platform remains at grade with the crater's edge and is projected into the landscape, providing the visitor the opportunity to "fly" over the crater. At the same time, a series of bleacher-like steps follow the sloping of the crater's pit, providing an experience of "contemplation and introspection."⁶ Thus, the success of the simple viewing structure is not in its design, but in its ability to provide un-precedented view of the natural landscape that was not attainable beforehand. The framed views of the panoramic crater and the submerged lake are thus an test to architecture's subtle ability to transform how we view the world around us.



fg. 21 collage of the quiltoa shalala overlook

CONNECT

Olympic Sculpture Park

Weiss/Manfredi

Seattle

2007

Weiss Manfredi's Olympic Sculpture Park stands as one of the greatest forms of urban landscape as a means of rejuvenation and connection within our cities. Conceived as a simple continuous parkway from the city of Seattle to the waterfront, the urban engagement not only transitions pedestrians from the city to the water, but provides an uninterrupted path over a forty-foot grade change, an arterial road, a series of train tracks, and a former brown field. Layered over the existing site and infrastructure, the continuous "Z" formation invites pedestrians to meander the landscape as they please and allows them to not only engage with large-scale art, but enjoy stunning views of the Puget Sound and Olympic Mountains in the distance.

The main pedestrian route is anchored by an 18,000 square-foot exhibition pavilion, descending from the urban fabric to the natural waters edge. The first armature of the "Z" formation stretches across a highway, offering views to the Olympic Mountains; the second crosses the train tracks, connecting views from the city to the port; and the last descends to the water, opening views to the newly created beach. Thus, Weiss Manfredi's city landscape not only stands as a new precedent of an outdoor sculpture park, but how the intersection of urban design, landscape design, and architecture can work in unison to activate a new typology of urban living. The Olympic Sculpture Park has thus been an oasis within the cities gridlock, connecting Seattle to art, culture, and the surrounding environment.

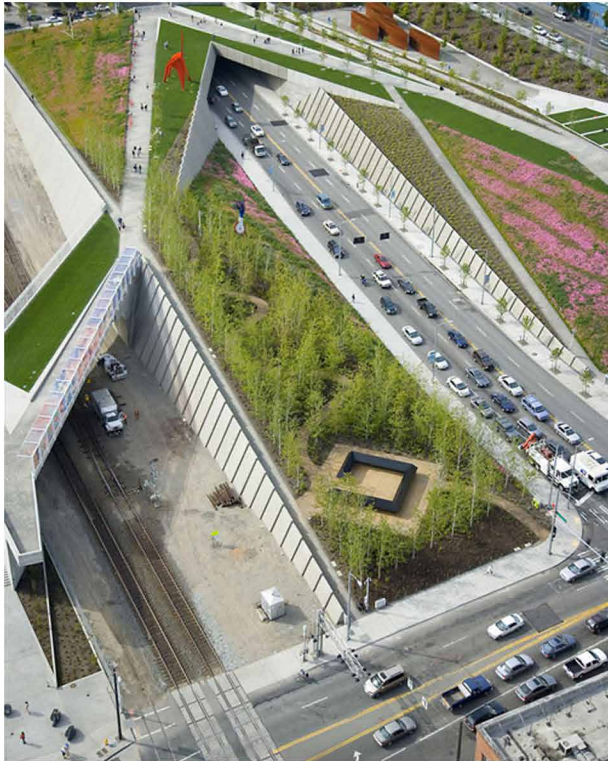
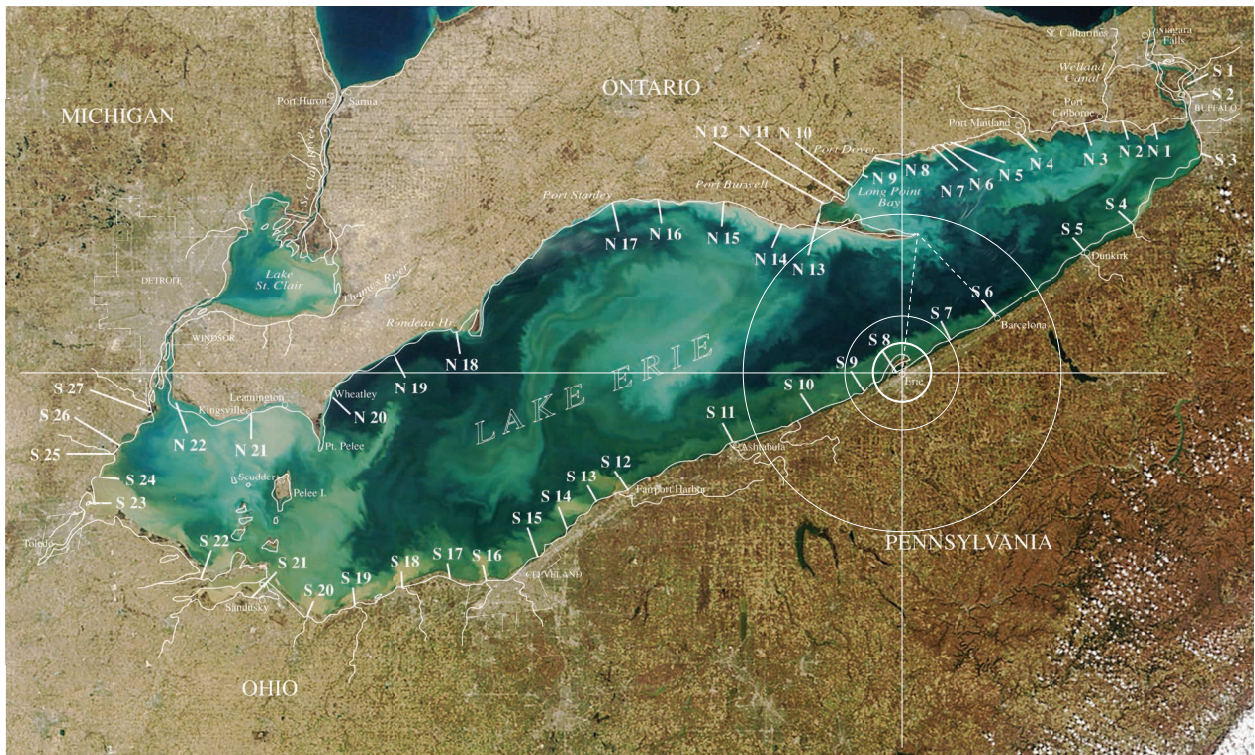
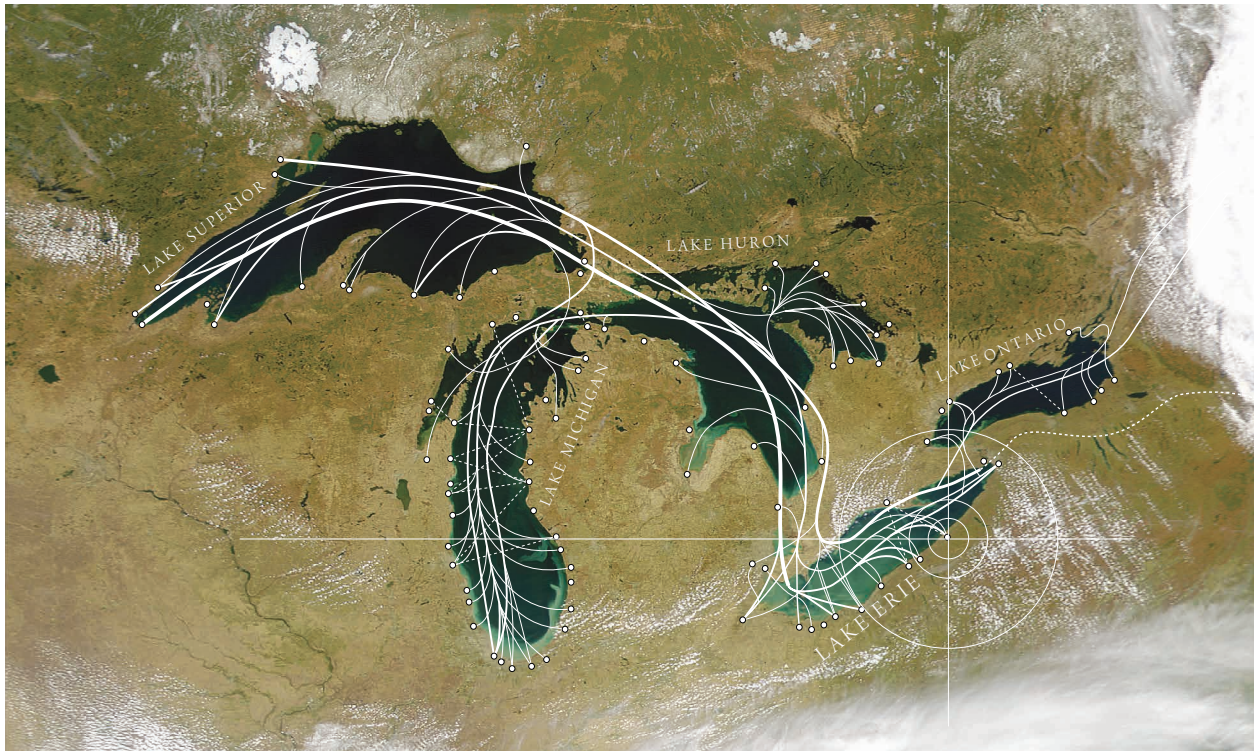


fig. 22 collage of the olympic sculpture park



fg. 23 great lakes waterways of trade
 huron | ontario | michigan | erie | superior
 fg. 24 lake erie historic ports

4

PLACE

42.1296° N | 80.0852° W

The Great Lakes region, now cast as “the Rustbelt” provided the main waterways for industry and trade that positioned America as a world leader through the Industrial Revolution. Lake Erie, the southernmost of the Great Lakes, quickly became the most activated inland sea due to its crucial connection to the Hudson and St. Lawrence rivers. Today, Lake Erie alone has over 50 major post-industrial ports on its Northern Canadian and Southern US shores. Since industry and trade moved inland to the railways in the late nineteenth century, these ports have stood stagnant, seeking a new future within a post-industrial continent.

Erie, Pennsylvania is one of these post-industrial ports within Lake Erie and was one of the most important waterfronts at the height of its trade. The natural harbor of the peninsula led to its early settlement in the 1600s by the French and rose as a manufacturing leader through the trade of iron ore. Since the early 1980s, the city has been trying to re-imagine the waterfront through the primary strategy of gentrification through demolition. Thus, the city has become further dis joined from its port through private developments and is in jeopardy of losing the last remnant of memory of place. Because of this, a deep analysis through time, terrain, and infrastructure of the city of Erie must be understood and theorized before an appropriate solution to a waterfront redevelopment can be proposed.

GEOHISTORY

The location and origin of Erie's natural harbor of Presque Isle is directly related to the presence of a glacial moraine that not only left a ridge of sediment, boulders, clay, and sand within Lake Erie, but also created the Great Lakes waterways through its slow recession. In geological times, the Great Lakes were formed by the retreat of the Wisconsin Glacier over 20,000 years ago. The ice sheet began to recede around 14,000 BC beginning in Lake Superior and carved a series of escarpments and lakes through its path.¹ Because Lake Erie is the southernmost Great Lake, it was the last body of water to be sculpted. Thus, the natural formation of the peninsula's moraine marks the exact position where the advance of the glacier halted and melted. Today, the top of the pre-historic ridge is about 30 to 50 feet below the level of the lake.²

When the ice started to melt and the glacier began to fill the voids within its path, the water levels of Lake Erie were much lower than they are today. Thus, the glacial moraine connected the northern Canadian and southern US shores as a land bridge, separating the lake into eastern and western basins. As the glacier continued to melt and lake levels slowly rose, the lake's shoreline began to migrate along the bedrock platform. By 10,000 BC, the Wisconsin glacier had fully melted and the waters of Lake Erie were flowing over Niagara Falls.³

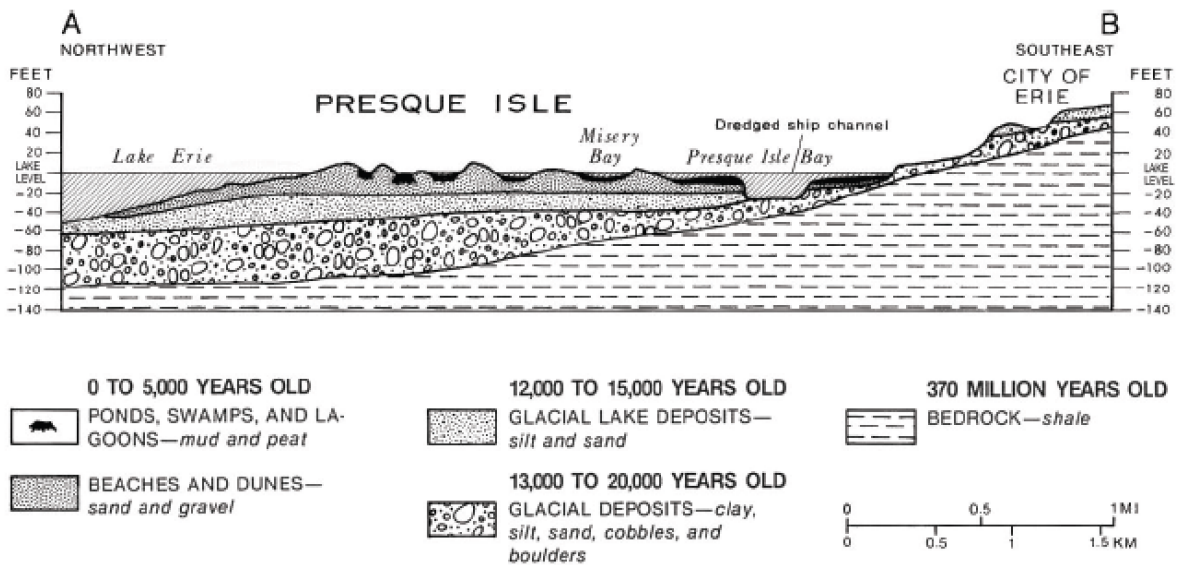
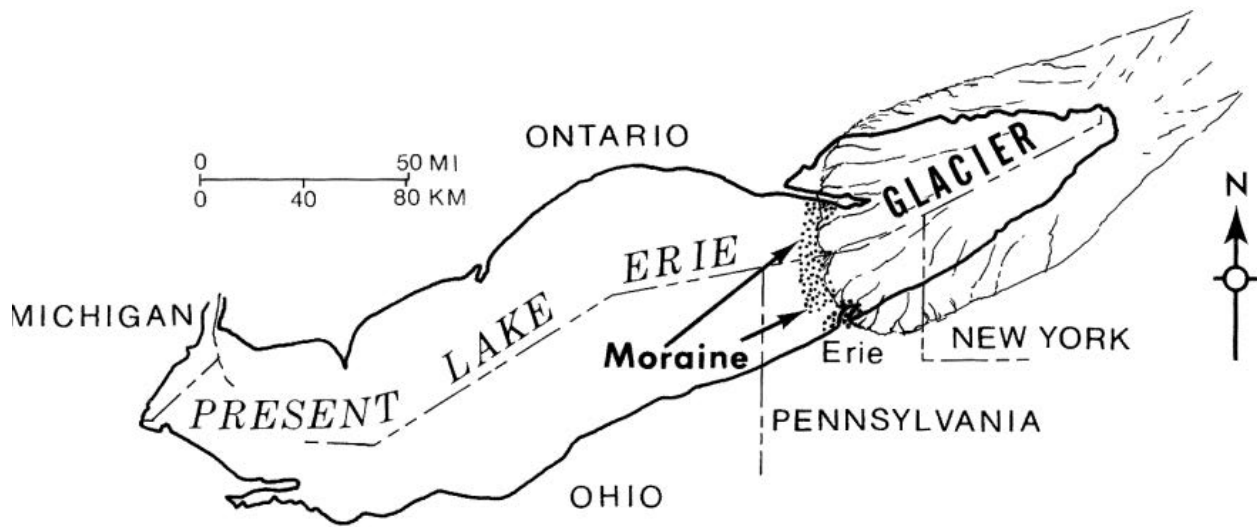


fig. 25 moraine formation from the settlement of the wisconsin glacier
 fig. 26 geological section from presque isle to the city of erie

LANDSCAPE

Lake Erie was thus fully developed to its current formation around 10,000 BC. Though the lake is the second smallest and shallowest of the Great Lakes waterways at 254 miles long, 50 miles wide, and only 210 feet deep, it is classified as a major body of water and often referred to as an inland sea. Since its axis runs southwest to northeast along the direction of the prevailing winds, its shallow width and extended length create the unique characteristics of a lake with currents like those of a river. The continuous currents are thus not only responsible for the geology of the lake, but the formation, growth, and temporal nature of Presque Isle.

Technically classified as a sand spit, the shifting nature of Presque Isle is in a constant state of change and formation. Both Presque Isle and Long Point, the northern moraine on Lake Erie's Canadian shores, were formed to their current formation over 1,000 years ago through the accumulation of sand moving along the lakes east to west currents. The glacial moraine's shallow formation (30 to 40 feet below the water's surface) and rocky reefs of boulders and bedrock mark the location for the sand-spits to grow and develop over time. Thus, the pre-historic process that created the Great Lakes allowed for the build-up of the only natural peninsula within Lake Erie. Geologists believe that the sand spits have changed and adapted over time through the continuous motion of the prevailing winds and currents. Thus, the peninsula has slowly grown and migrated east over time with the natural rate of movement estimated to be approximately 50 feet per year.⁴

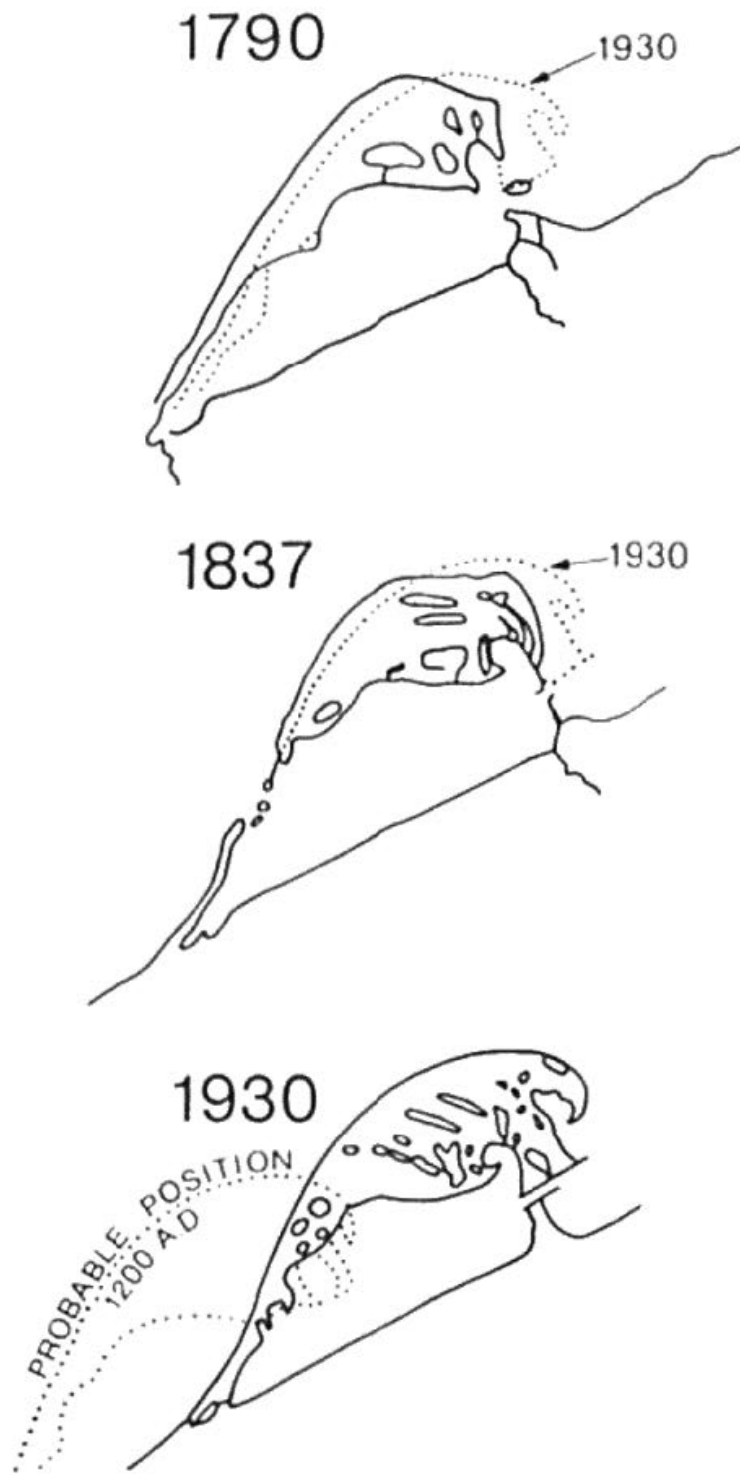


fig. 27 movement of presque isle

Though the landscape of Presque Isle appears to be a permanent fixture within the city of Erie, it is important to recognize that the geological and biological processes which created it continues to re-sculpt the peninsulas contours over time. Despite its temporal nature, the accumulation of growth and erosion of Presque Isle can be seen through the striations of its major dune ridges along its landscape. Thus, the pattern of such dune ridges not only signifies the locations of earlier shorelines, but are in a sense a time line of the natural landscapes geo-history. The natural formation of Presque Isle is not only an oasis for the city of Erie, but an opportunity to view the earth's deep layering of time.

Throughout history, Presque Isle has been valued as a unique and natural gift to both the city and the environment. Through its earliest settlers of the Eriez tribes in the early 1600s, the formation of the peninsula was theorized through oral legend as a form of protection and safety through god's outstretched arm. It is evident that the natural landscape was held with equal significance through the area's settlement and growth as the community established Presque Isle as a State Park in 1921. The city of Erie holds the natural formation so valuable that they have actively tried to maintain its position and slow its rate of migration through a long history of shore protection. Thus, through the implementation of a series of break walls through the Army Core of Engineers to preserve the peninsulas' shores, Presque Isle stands as a "maintained" natural landscape that is shifting and changing through time.⁵

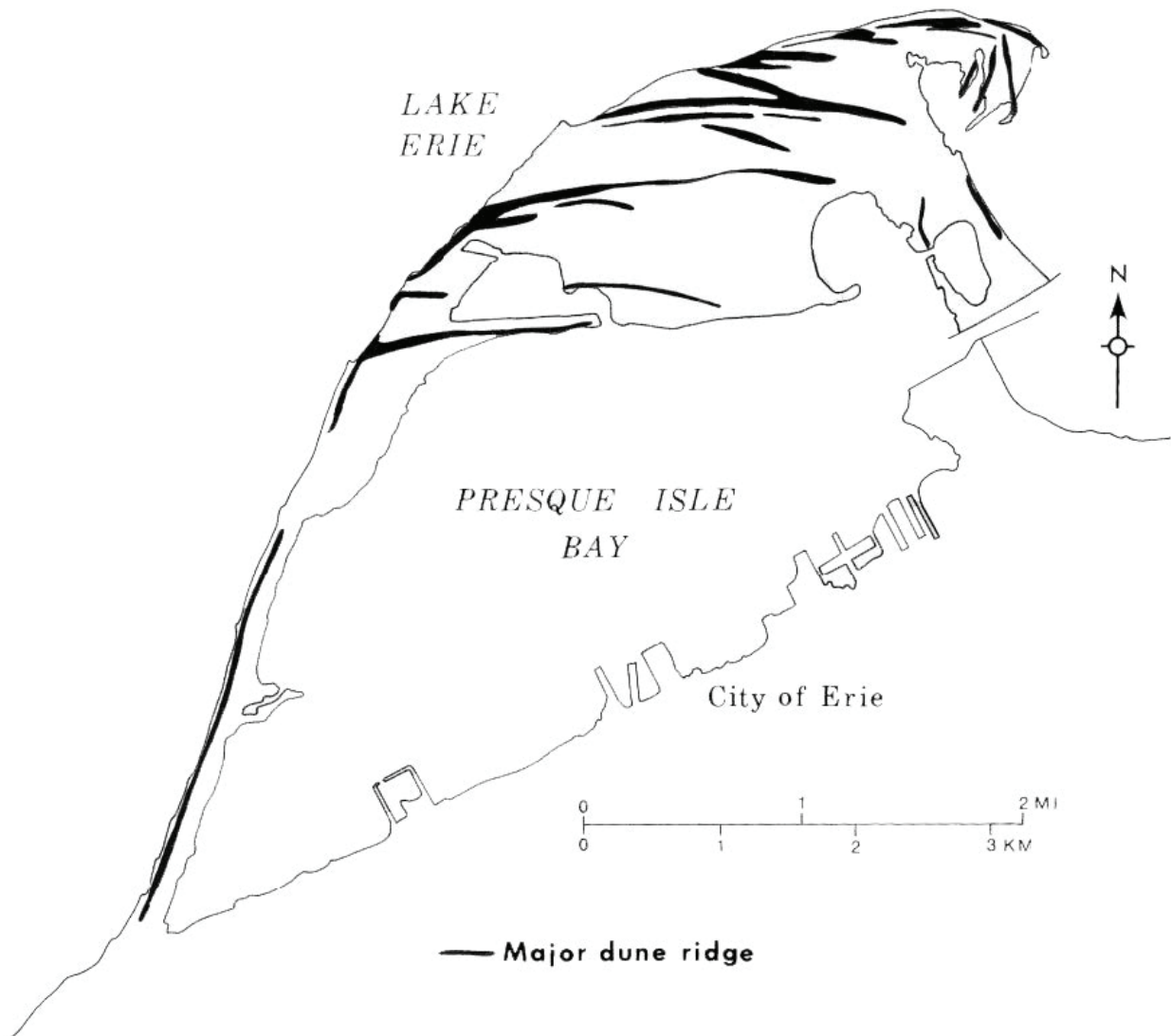


fig. 28 major dune ridges of presque isle





fig. 29 aerial photo of presque isle and the city of Erie

INDUSTRY

The Flagship City

Before Erie was a community, it was a military outpost – first found by the French, followed by the British, and fully settled by Americans. The six nations of the Iroquois Confederacy originally occupied the land along the southern shores in what is now Erie. Europeans first arrived in the region when the French constructed Fort Presque Isle on the west bank of Mill Creek in 1753 as part of their effort to defend New France against the encroaching British. The fort refers to the natural protected peninsula on the south shores of Lake Erie, which is now named Presque Isle State Park. When the French abandoned the fort in 1760, it was their last post west of New York. The British occupied the fort at Presque Isle that same year.⁶

Nestled around Presque Isle Bay, present-day Erie is situated in what was disputed as the Erie Triangle: a triangle of land that was claimed by the states of New York, Pennsylvania, Connecticut, and Massachusetts. It officially became part of Pennsylvania on March 3, 1792, after Connecticut, Massachusetts and New York relinquished their claims to the federal government. By 1800, the entire population of the Triangle consisted of only two hundred people, of whom seventy-five were residents of Erie. In that year, the area, formerly a part of Allegheny County, was officially designated as Erie County. In 1805, Erie was incorporated as a borough, with boundaries encompassing no larger than one square mile along the southern portion of the Bay.



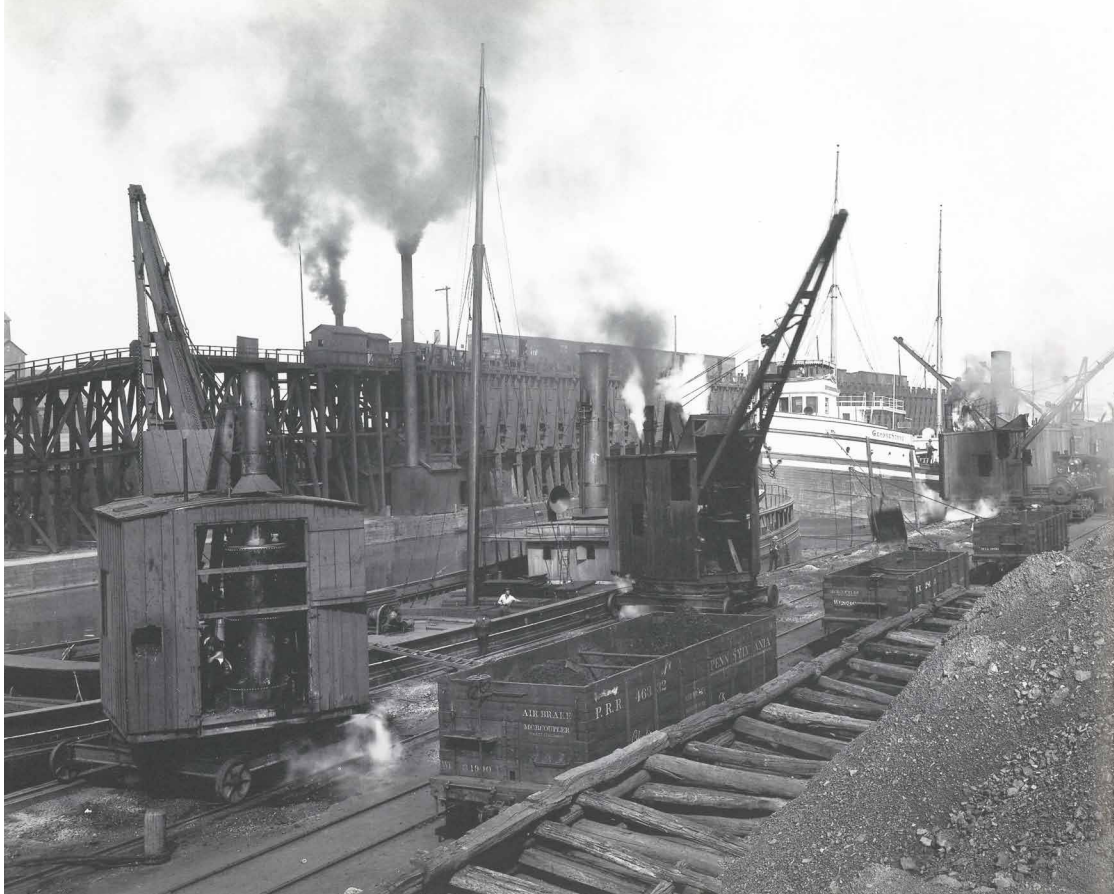
fig. 30 1870 Erie Historic Map

The town appointed two commissioners to survey a total of 1,600 acres for town lots and an additional 3,400 for out-lots near Presque Isle on Lake Erie. The town was laid out in three sections, each about one square mile starting from the south shores of bay. The early economy of Erie was based largely on the processing of local materials for local use: including lumber milling, flour milling, tanning, and brick making. However, the salt trade, which began in the early 1800's, became the primary source of income and employment over the next ten to fifteen years. Erie's flourishing within the trade was based largely on its location along the Great Lake.

Due to its location, the town played a pivotal role in the War of 1812 and "Battle of Lake Erie", which in turn catalyzed Erie from a small settlement to a working city. The recruitment and importation of three hundred workers were brought to the town to help construct battleships. Thus, in the decade since the War of 1812, Erie had grown from a settlement of about five hundred to over one thousand residents. By the beginning of the Civil War, the population of Erie had surpassed the 10,000 mark, and in 1851 it had achieved its official status as a city.

The Era of Industrialization

Thus, through the 1800s, Erie became a major port and manufacturing center and was commonly known as "the Boiler and Engine Capital of the World." The rise of the manufacturing trade industry was played in large part to the construction and expansion of the Erie Canal in 1842 and the linkage of the railroads in the 1860s. The canals and railroads increased the trade in coal, iron ore, and other cargo throughout the Great Lakes Region. Though most of the early settlers in Erie had been primarily of English and Scottish descent, the canals and railroads brought an influx of Irish laborers and immigrants from Germany and Poland.



fg. 31 whale-back at anchor line dock

Despite Erie's excellent harbor, it was no match for Buffalo's canal system. Thus, Erie quickly transitioned from a port town to a manufacturing city as businesses and warehouses began to locate along the railways inland from the lake. The industrialization of Erie was catalyzed by its proximity to the rich coalfields of Pennsylvania and advanced to a leading manufacturing sector through metalworking, notably iron. Many of the prominent metalworkers expanded through the industrial revolution into manufacturing steam engines and boilers, which became a staple in Erie's industry for hundreds of years.

Though the boom of the Industrial Revolution brought various manufacturing plants to the city, including wood planning mills, flourmills, breweries, and fabricators, by 1890 the leading industry of Erie was metalworking.⁷ Thus, the time between the 1880s and the 1890s were the most spectacular era of industrial growth in Erie history, not only mobilizing the economy but also through the organization and implementation of labor unionization. In 1880, the city had a population of almost 28,000 and a total of thirty-one manufacturers with 3,300 employees. By 1905, with a population of 60,000, the city had sixty-one manufacturers employing a total of 12,000 workers, serving as the backbone of Erie's economy. Thereafter, the number of manufacturers remained fairly constant up until World War II, and their total work force expanded much more slowly than the overall rate of population growth.⁸

Though the effects of the crash of 1929 hit Erie later than the majority of the country, it hit harder. Because the demand for capital goods, the backbone of Erie's manufacturing economy, was among the last to fall, the economy remained stable. However, the market dried up almost completely during the Depression Years. Thousands lost their jobs and many industrialists lost their fortune. There was no unemployment insurance and no social security. From 1929 to 1932, according to the Chamber of Commerce statistics, the number of people holding jobs fell from 24,011 to 15,324. Total wages fell even more dramatically, from about \$41 million to \$17 million, while the value of production fell from \$130 million to just over \$150 million.⁹

Erie's economy suffered up until the Second World War, which fortunately brought a lucrative boost in manufacturing and business. The number of manufacturing firms in Erie in the 1940s was fifty-eight, down from a high of sixty-four in 1930; by 1950, the figure was ninety-three. Total employment in manufacturing was 17,811 in 1930, 17,216 in 1940, and 31,352 in 1950. Erie not only used its industrial capacity and skilled work force to meet wartime demands of the military, but joined in the postwar industrial boom fueled by the backlog of civilian consumer demands. The postwar period served as the height of Erie's economy and population, which soon saw a rapid decline at the beginning of the Post-Industrial era.

Urban Renewal

Post-war Erie was characterized by declining business, vacant stores, and the development of slums. By the 1950s, suburbanization and economic losses had devastated downtown Erie. As the industrial boom began to dry up and urban sprawl dominated a lifestyle shift, the city suffered through abandonment and deterioration as industry and manufacturing eventually went bankrupt or moved out of town. In 1955, Mayor Gardner spearheaded the creation of an Erie Redevelopment Authority in response to the declining state of the city and solidly aligned itself behind the trend of urban renewal.

Despite manufacturing and shipping losses, Erie maintained a stronger manufacturing base than most other Pennsylvanian cities. Large employers such as Hammermill, the American Sterilizer Company, and GE, which specialized in the manufacture of locomotives, rapid transit, and commuter cars in the 1970s and 1980s, dominated employment. In 1942, the new Eriez Magnetics began building magnetic iron separators. Zurn Industries, founded in 1900, made pollution-control and energy systems and took over a number of local firms in the 1970s. Further, the plastics industry expanded in the 1980s to more than forty companies within the region. Though Erie's industry changed and adapted through time, the port of Erie suffered as urban renewal and public services spearheaded its postwar revitalization. Waterborne traffic at the port had reached a peak of 10.2 million tons in 1942. Since then, it has declined steadily, primarily in the area of bulk cargo – coal, iron ore, and grain. Today, the port-industry and Erie Waterways are almost non-existent and currently a relic of its former self.



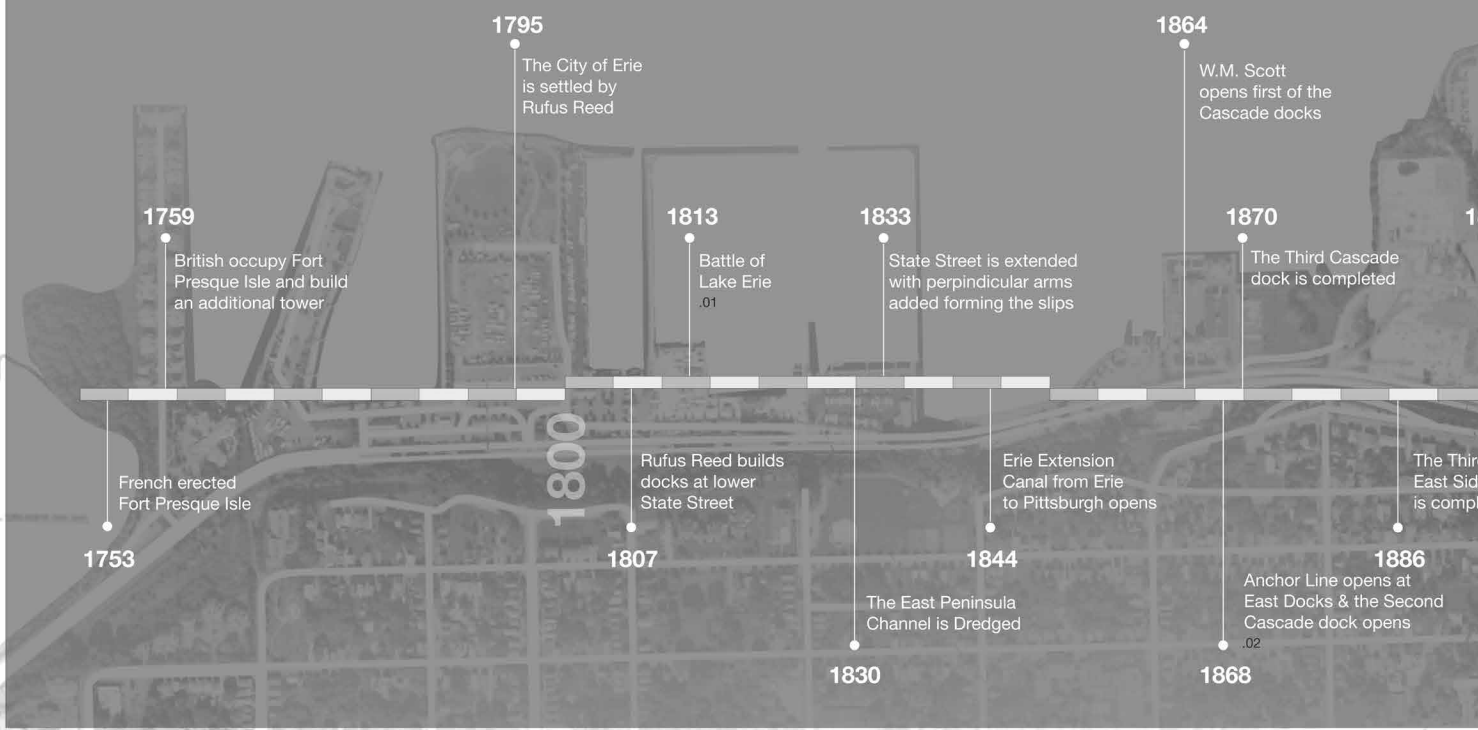
fg. 32 Erie harbor 1932
fg. 33 Erie harbor 2002



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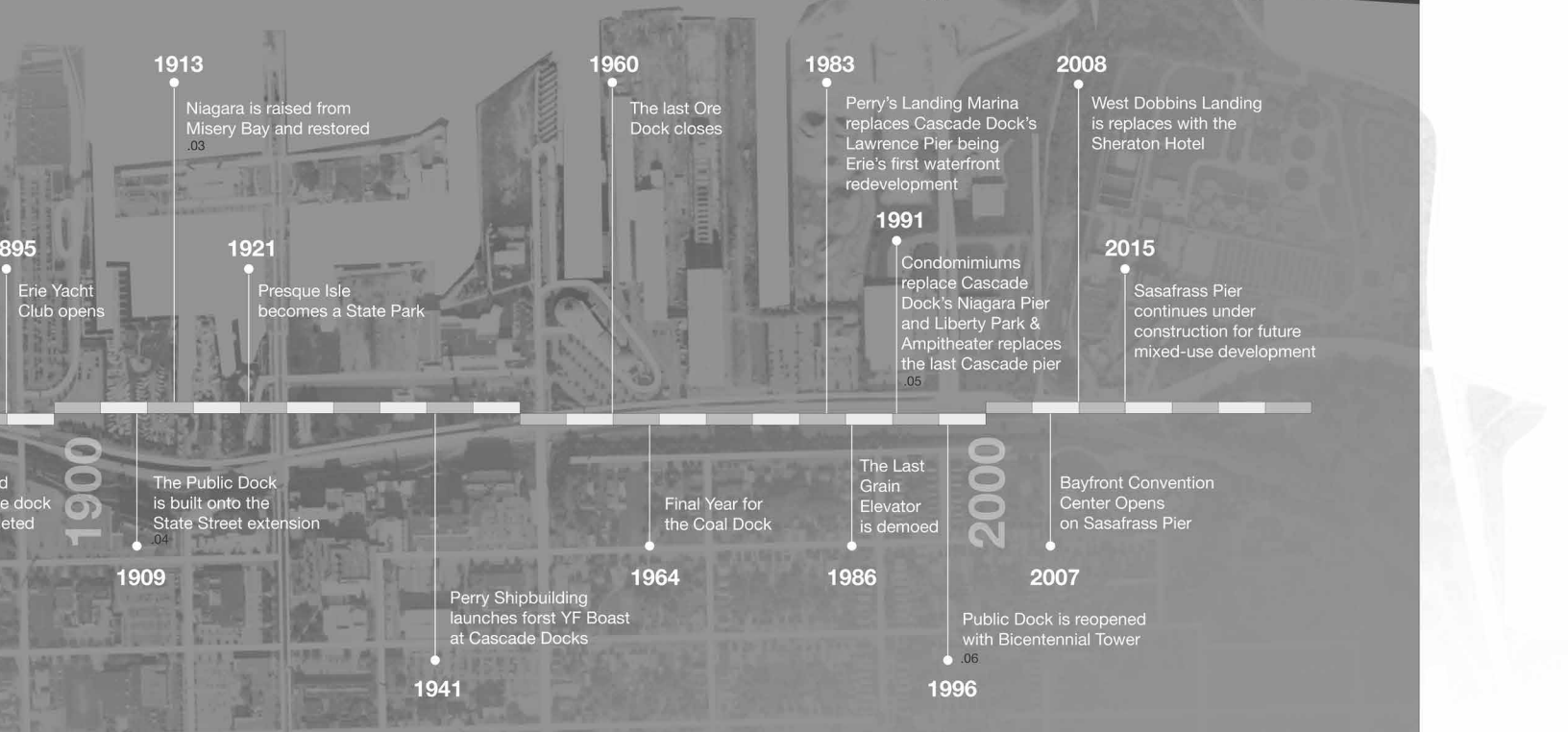




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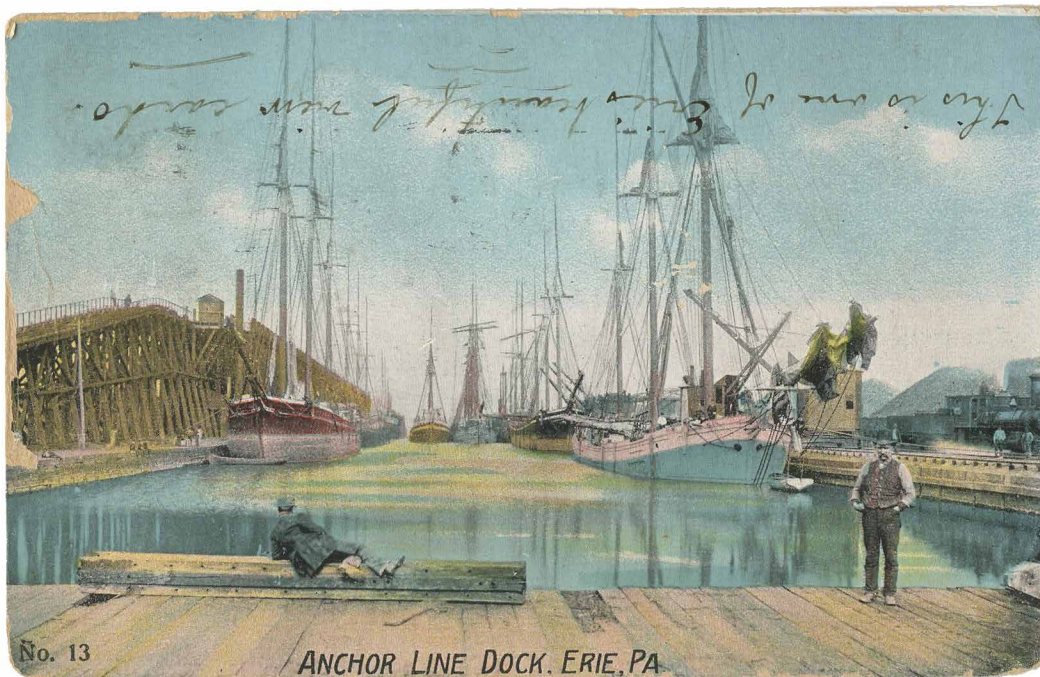
MEMORY

Through the analysis of the lake, the city of Erie, and the natural landscape of Presque Isle, it is apparent that this place holds a rich and layered memory and identity through the accumulation of time, terrain, and infrastructure. Though both the city and its surrounding environment has changed and adapted through time, its identity of place has strongly been linked through the intersection of the city and the water. At an attempt to portray and understand Erie's identity, an investigation through historic postcards was performed to not only reveal the memory of the city, but to understand how the city chose to view and portray itself.

Through this analysis, it is extremely evident that the city of Erie had a strong emphasis on the balance between the peninsula, Lake Erie, and the built environment. Its emphasis as a working waterfront through trade, industry and manufacturing can be viewed through figures 2, 3 and 7, which portray its industrial heritage as a source of strength and pride. On the other hand, figures 4-6 illustrate the community's emphasis on utilizing the waters edge for not only recreation, but public access and amenities including Waterworks Public Pool, The Public Dock, and various public beaches. Thus, through the simple analysis of historic postcards within Erie's growth and development through the 1900s, we can begin to not only understand the varying layers of place, but what the city identified as its most important characteristics and attributes through time.



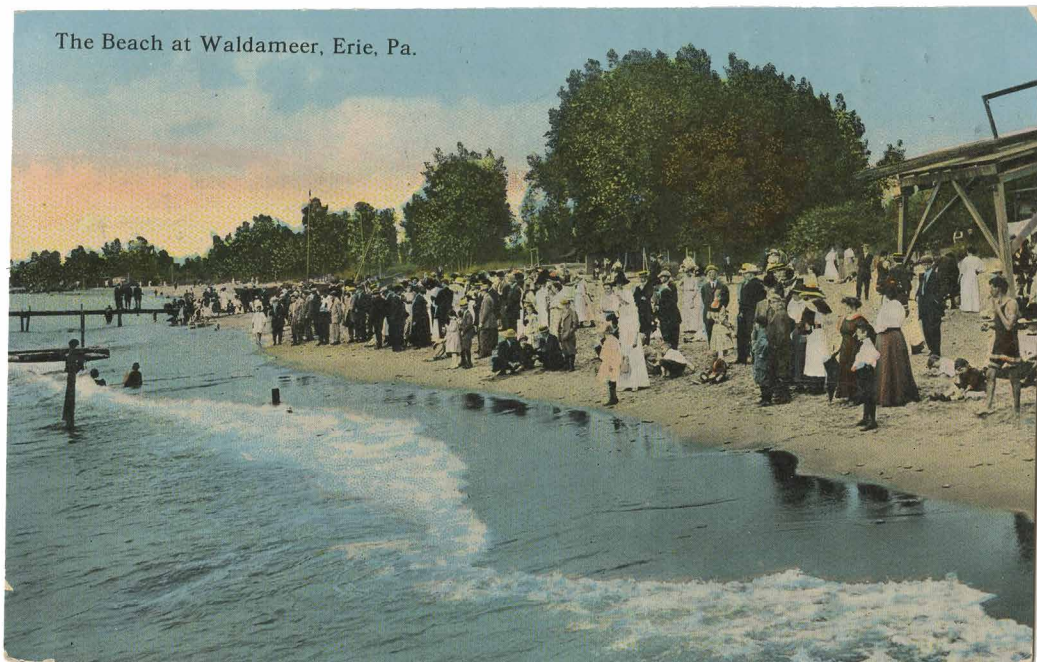
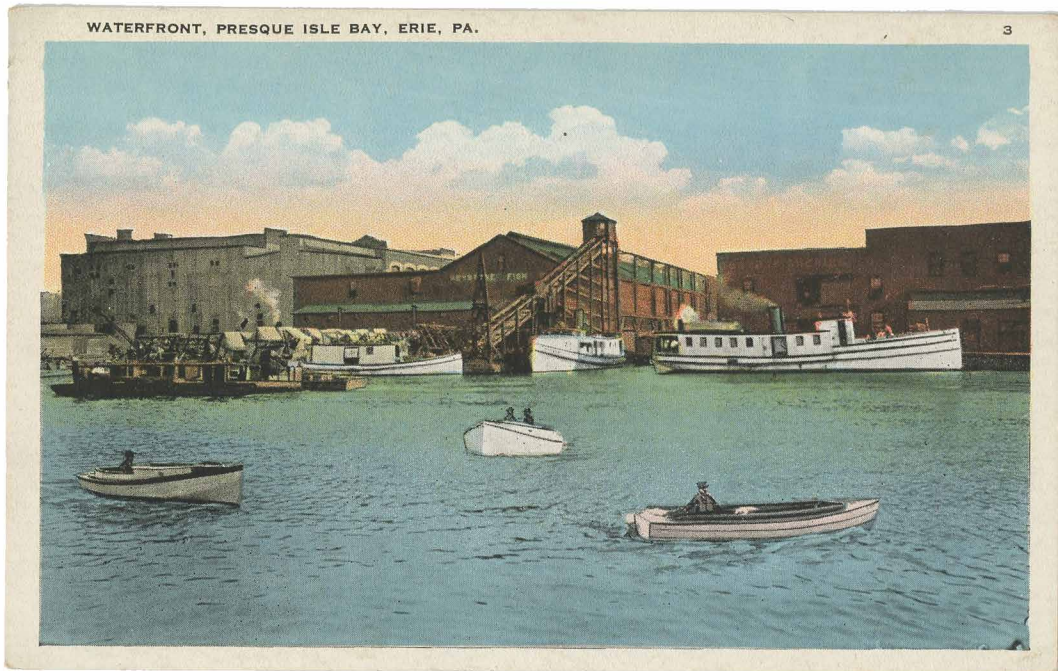
fg. 35 "Greetings From Erie" 1954
fg. 36 "State St. Looking North"



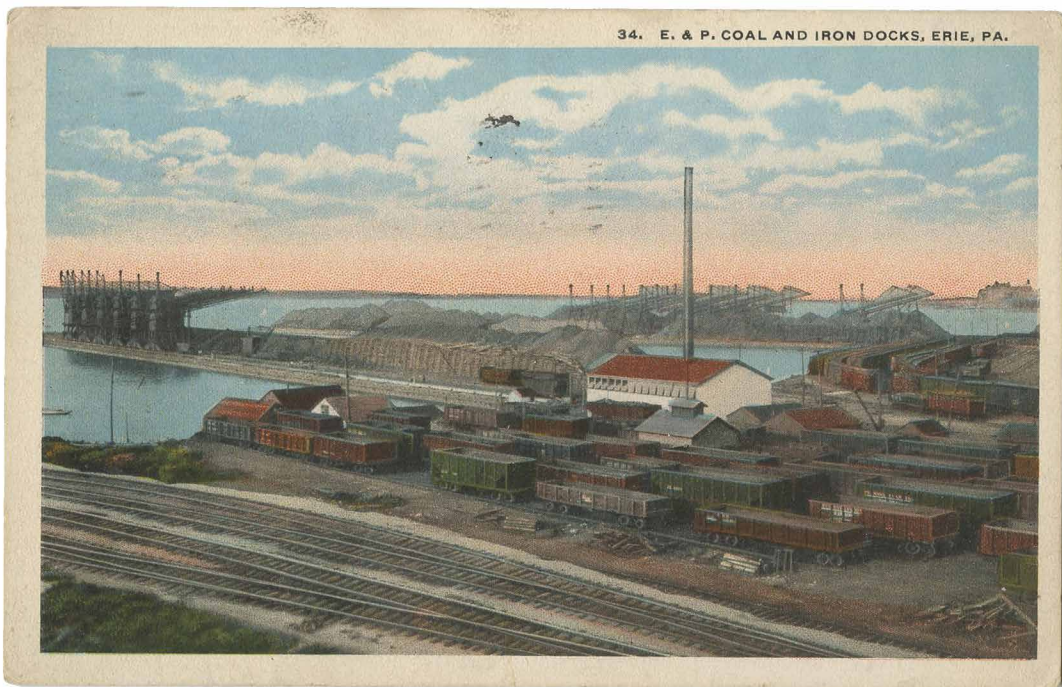
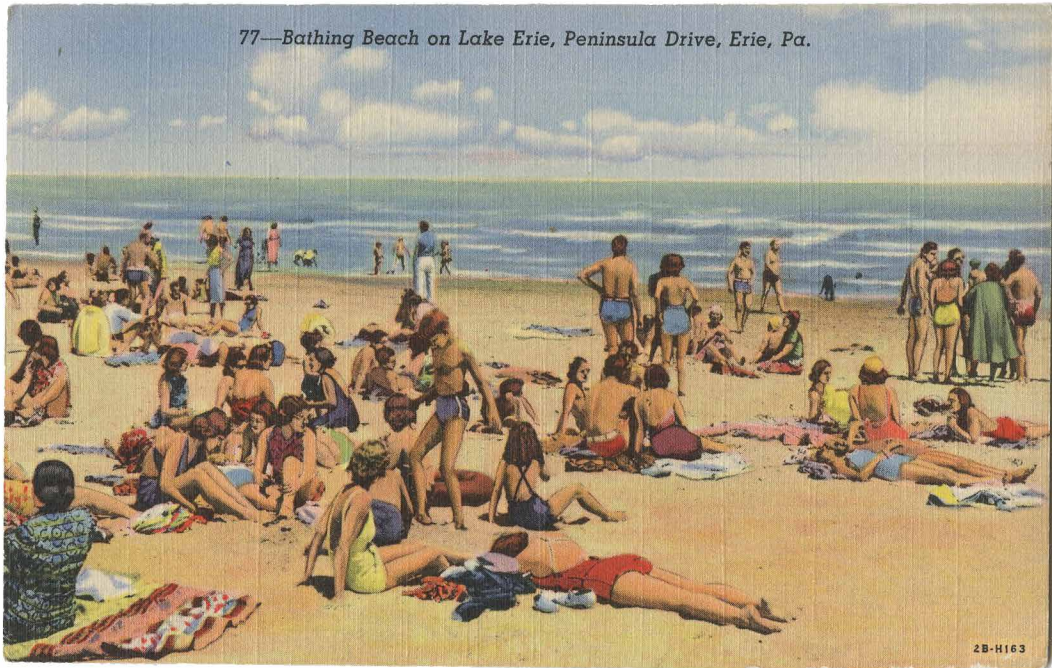
fg. 37 "Anchor Line Dock" 1908
fg. 38 "Public Bath" 1908



fg. 39 "Public Steamboat Landing" 1957
fg. 40 "Bathing Beach and Bathers, Most Popular Beach on the Peninsula" 1930-1945



fg. 41 "Waterfront, Presque Isle Bay"
fg. 42 "Beach at Waldameer" 1913



fg. 43 "Bathing Beach on Lake Erie" 1944
fg. 44 "E&P Coal and Iron Docks" 1918

TIME

Though the natural landscape of Erie is in a constant state of motion and change, the development of the city's port has seen minimal changes since its expedited establishment. Thus, the evolution of infrastructures edge grew at a rapid rate from 1807 through 1870 and has only seen minor changes through dock expansions since the early 1960s.

The port of Erie was originally constructed as a literal extension of the city grid with the majority of piers being a continuous road from the city to the water. Through the development of the port, the construction of docks was built within three segments: the Cascade Docks, the Public Docks, and the East Docks. By breaking down each section of the port of Erie, one can begin to see the patterns of time from industrialization to gentrification. By viewing each port as a series of time-lines, the general trends in Erie's waterfront development begin to arise and illustrate what is lost, what is gained, and what is in danger.

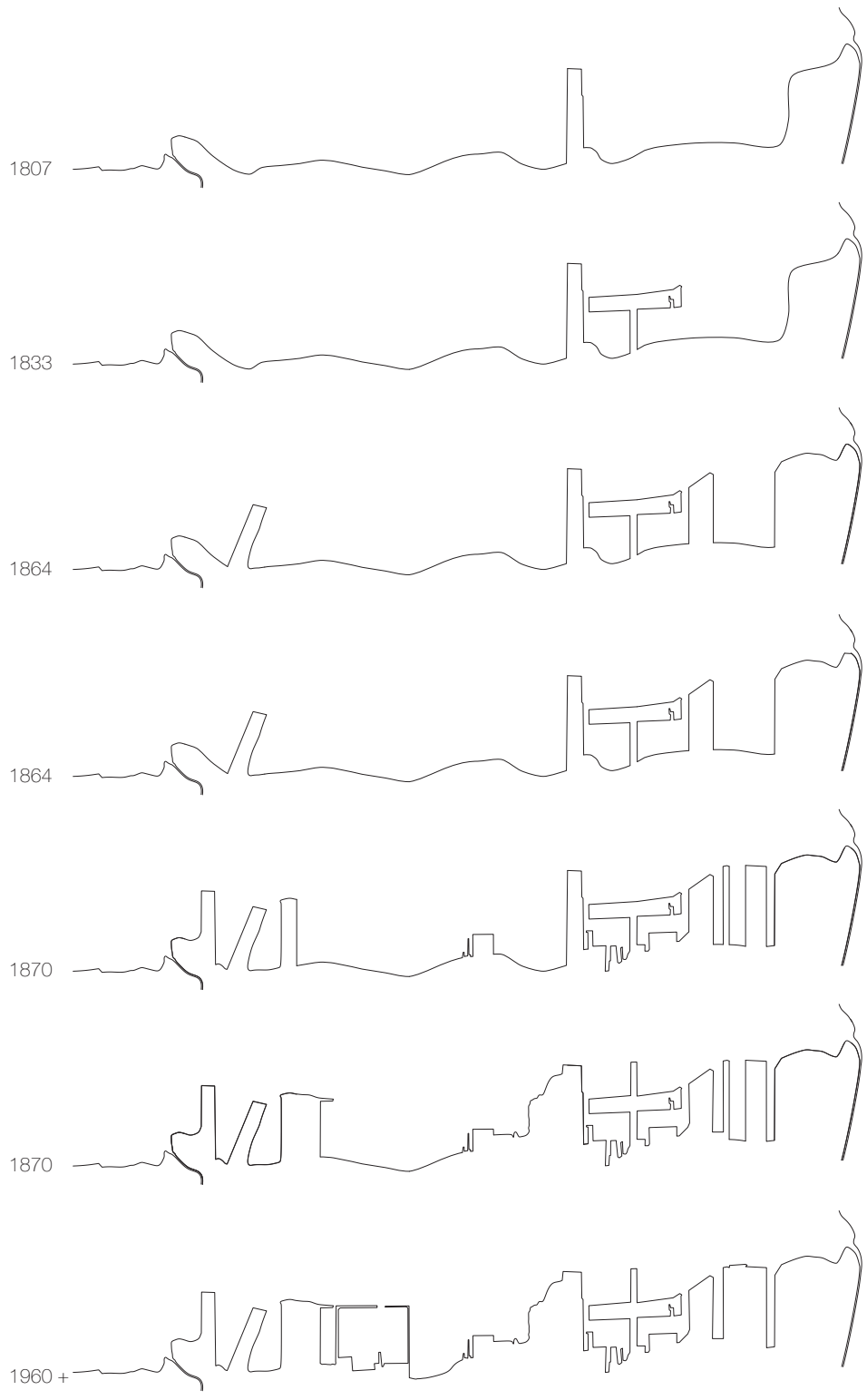
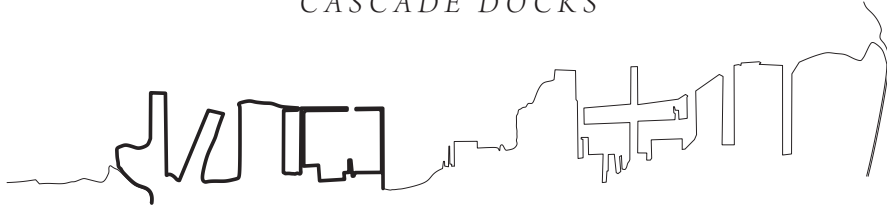


fig. 45 Evolution of Infrastructure's Edge

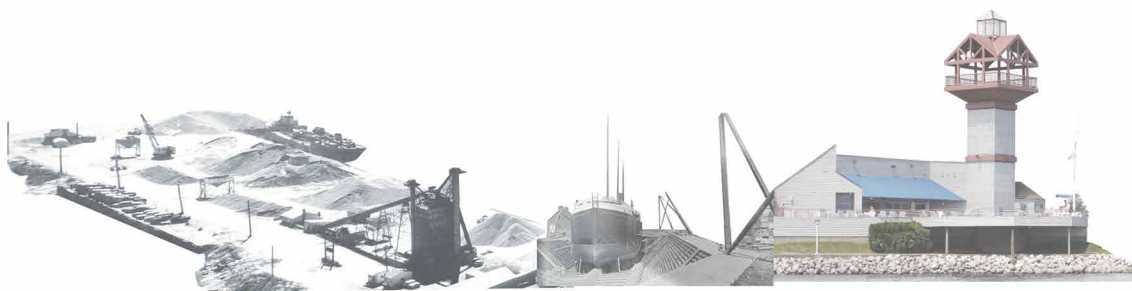
CASCADE DOCKS



As Erie's last harbor construction, the Cascade Docks were built the furthest from the channel and are clustered around the extension of Holland Street. The middle dock, built in 1864 to handle and transport soft coal, remains as Erie's only true "North-South" facing pier. The western dock was built in 1868 and took over the soft coal industry to allow for the original dock to be converted to iron ore. The dock also conceived Erie's first automatic railroad hoist, eliminating the need for manual labor.

The Cascade docks underwent a number of transitions through the World Wars. During World War II, all three docks were home to Perry Shipbuilding and produced Naval Yard Ferries. After the wars, the ship-building docks were converted for lay-up work until the mid 1980s.

Today, the Cascade Docks stand as the most privatized real estate on the Erie Waterfront. Since the mid 1980s, developers have made dramatic changes to both the appearance and use of the docks. The west dock was rebuilt with luxury condos, the middle dock is home to Perry's Landing marina, and the east dock holds Erie's first public waterfront redevelopment of Liberty Park and Amphitheater. Though the Cascade docks have been primarily privatized, their public presence has created a huge public attraction and appreciation for the waterfront.¹⁰



fg. 46 Erie Bay front Parkway

soft coal dock | perry ship building | niagara pier condominiums

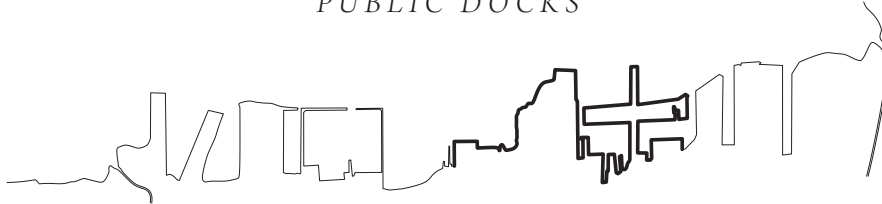
fg. 47 Cascade Street

soft coal dock | great lakes hoist | perry ship building | perry's landing yacht club

fg. 48 Liberty Street

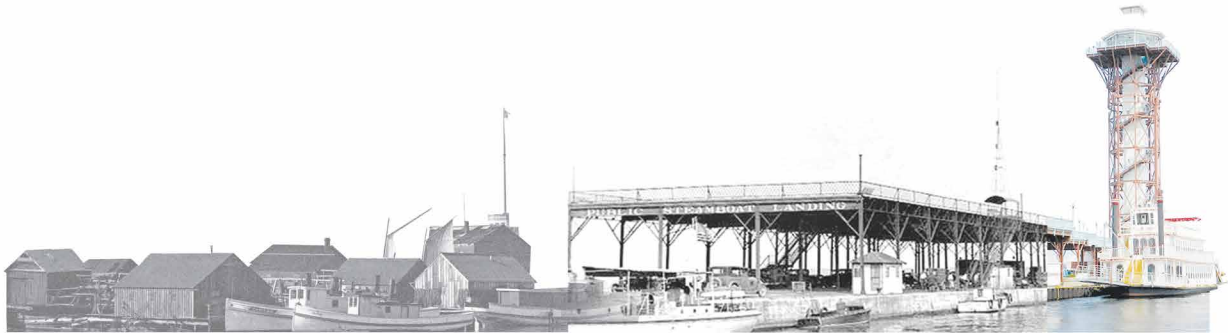
iron ore dock | carnegie steel expansion | perry ship building | liberty park & amphitheater

PUBLIC DOCKS



The public docks, including the State Street Extension, Chestnut Street Pier, and Sassafra Street Pier, were the first of Erie's port development, beginning in 1807 as an extension of the center of town into Presque Isle Bay. The Sassafra Street extension was thus the first pier built on the Erie Harbor and was originally known as "Reed's Wharf". As the only public dock, the steamship pier quickly became the epicenter of harbor activity. In 1902, GAF acquired the land near the base of old Reed's Wharf and built a roofing materials plant. The plant continued in operations until the late 1990s and was recently demolished for the construction of the Bay front Convention Center. The remaining western land of the Sassafra Pier has been a hot topic of debate for the last 10 years as the city searches for a multi-use master plan to re-activate the waterfront site.

The next major development in Erie's waterfront was the State Street Extension in 1833. As the center of town began to dramatically cluster around State Street, the city built a 30-acre extension of the street into Presque Isle Bay with two East and West perpendicular arms to allow for ample steamship trade and travel. It was not until 1909 that the "Public Dock" was built, completing the "cross" configuration that remains today. The new pier was extended into the bay to create a larger space for ship landings. It was not until the 1960s that the Steamship Landing structure was built with the addition of the 180-foot Bicentennial Observation Tower in 1996.¹¹



fg. 49 Chestnut Street

water works pool & fish hatchery | water works treatment facility

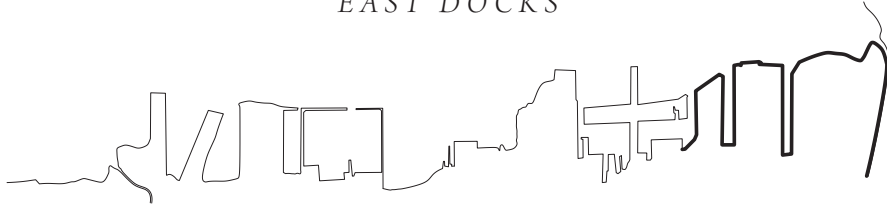
fg. 50 Sassafras Street

reeds wharf steamship line | gaf plant | bay front convention center

fg. 51 State Street

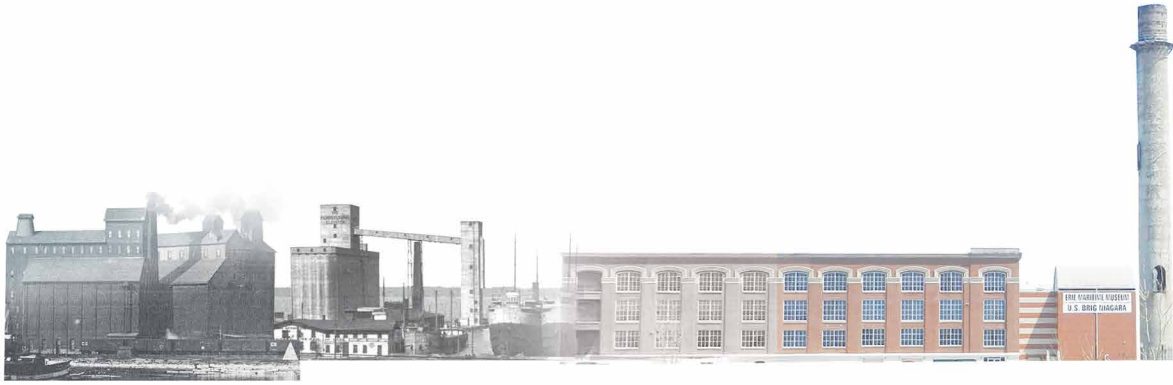
state street extension | public steamship landing | bicentennial tower

EAST DOCKS



The East Dock Area includes the piers east of today's Public Dock and represents the last remaining working waterfront within the City of Erie. The east harbor was the site of Erie's earliest waterfront development due to its proximity to the mouth of Mill Creek. Erie's first commerce developed as a trading post near the creek as the early beginnings of trade and industry in the area. Over the years, the East Docks developed into three major industrial piers of trade including the Holland Street dock (Anchor Line), Parade Street Dock (Hard Coal Dock) and German Street dock (Coal dock).¹²

Today, the East Docks have a mixture of public and private entities, but exemplify the preservation of Erie's industrial roots. The western Holland Street Dock, which was first home to the Anchor Line Grain Elevators and later the Penelec Powerplant in 1917, is the only adaptive-reuse project on the waterfront. Its current use as the Erie Public Library and Maritime Museum re-used a portion of the historic power plant in an attempt to preserve the original fabric of the Waterfront. The German Street Dock was converted from a railroad loading trestle to a boat building dry-dock in the early 1900s and is still in operation today. Finally, the Parade Street Dock is the last active example of a working waterfront; home to Erie Sand and Gravel, the company continues to utilize the Great Lakes Waterways for power and trade.



fg. 52 Holland Street

anchor line | penelec electric plant | public library & maritime museum

fg. 53 German Street

coal dock | railroad loading trestle | ship building dry dock

fg. 54 Parade Street

hard coal dock | philadelphia & Erie coal dock | Erie sand and gravel



2000

1950

1900

1850

1800

CASCADE DOCK
erie bay/mont parkway

CASCADE DOCK
cascade street

CASCADE DOCK
liberty street

PUBLIC DOCK
chestnut street

+80'-0"

+80'-0"

+75'-0"

+70'-0"

residences per condominiums

pery ship building

soft coal dock

great lakes hotel - soft coal

soft coal dock

pery's landing yacht club

pery ship building

soft coal dock

liberty park & amphitheater

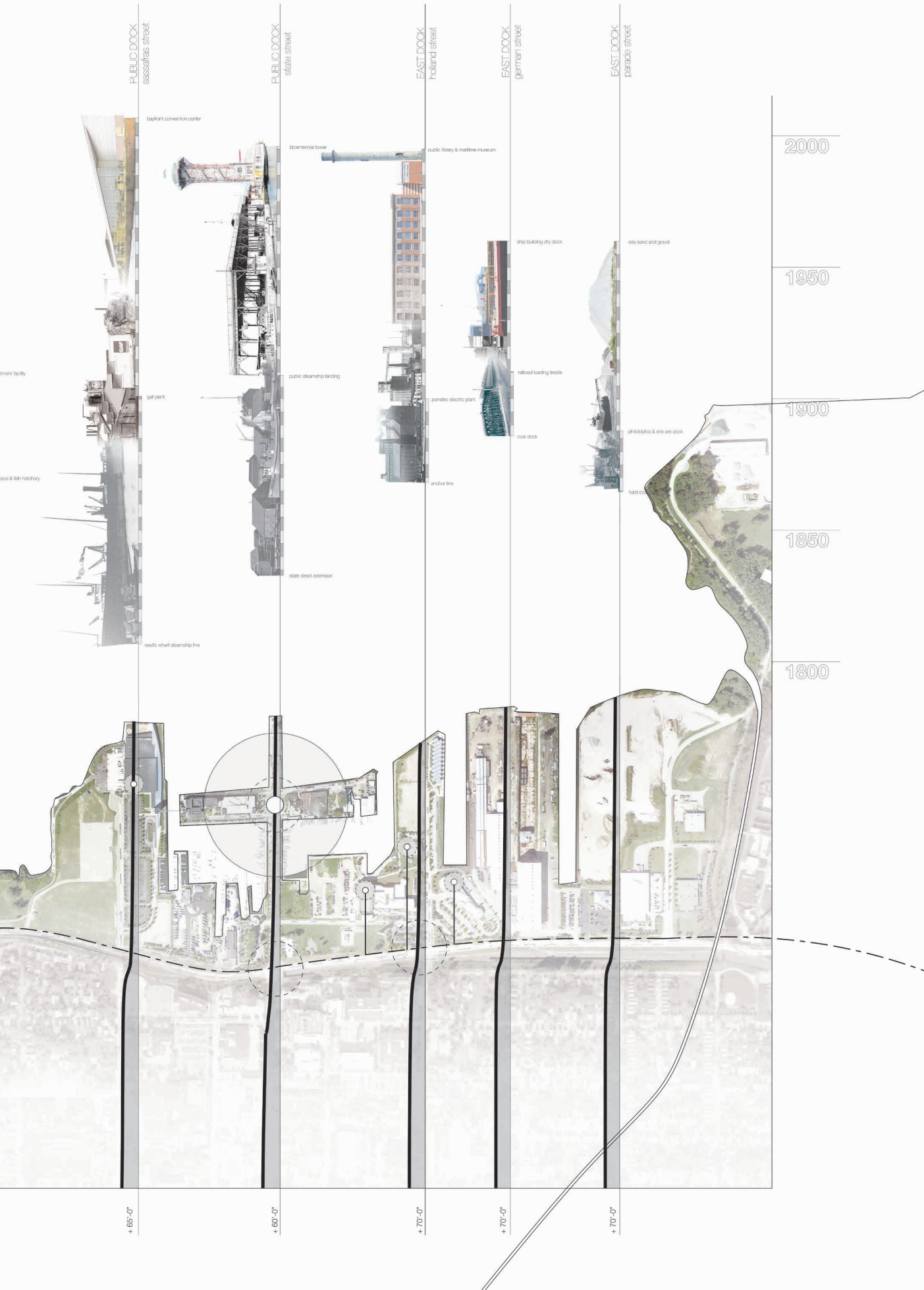
pery ship building

iron ore dock

carnegie steel dock expansion

water works base

waterworks park



PUBLIC DOCK
sassafras street

PUBLIC DOCK
state street

EAST DOCK
roland street

EAST DOCK
german street

EAST DOCK
parade street

2000

1950

1900

1850

1800

+65'-0"

+60'-0"

+70'-0"

+70'-0"

+70'-0"

bayfront convention center

baltimore tower

public library & maritime museum

ship building dry dock

one sand and gravel

oil plant

public steamship landing

panoleic electric plant

railed loading trestle

philadelphia & one ore dock

reed's wharf steamship line

state street extension

anchor line

coal dock

hard coal

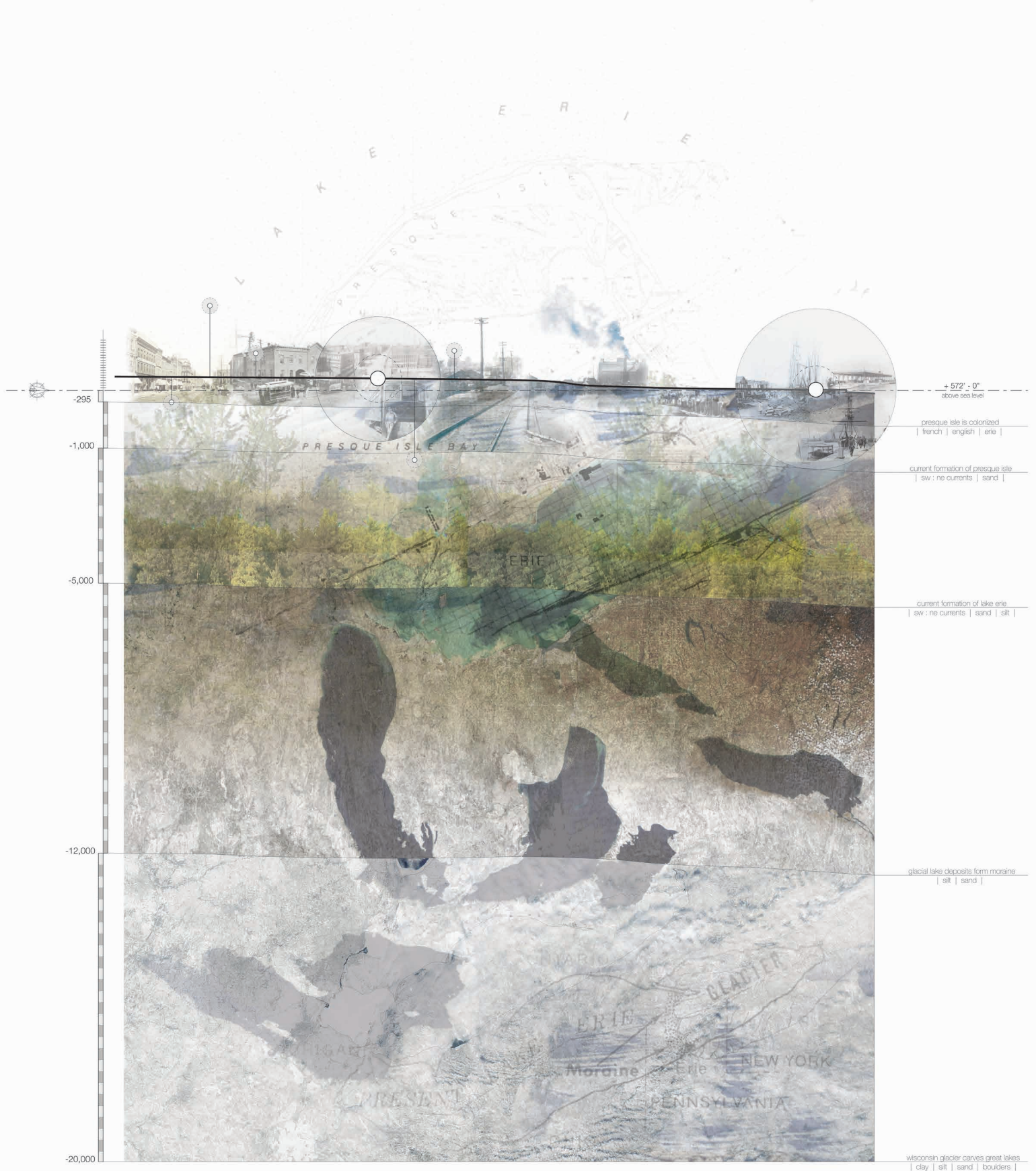


fig. 56 state street section geological time line

diagrammatic section cut through state street illustrating the historic approach through the nodes of activation from the city center, depicting the transition from the city to the waterfront. the diagram further illustrates the deep layering of geological time and development of place from retreat of the wisconsin glacier 20,000 years ago through the settlement of the city 295 years ago. the top of the section thus marks the present.

5

SITE

Through the deep analysis of the Great Lakes, Lake Erie, Presque Isle, and the city of Erie, this thesis will thus view the urban port and its waterfront redevelopment as a rich accumulation of layers through time, terrain, and infrastructure. Thus, the integration of architecture, urban design, and landscape will not only strive to reconnect the city of Erie to its waterfront, but also reveal such layers through a new engagement and understanding of site. The intervention will thus act as a civic time line through the history of the port of Erie.

Due to its existing cultural attractions, connection from the city center to the waterfront, and identification as the center of town, the cultural corridor of State Street and the State Street Extension (Dobbins Landing) was chosen as the site of study for this thesis. Already the most prominent and activated street within the city, State Street is currently and historically an incubator of activity. Home to numerous cultural attractions including art museums, historic societies, theaters, and sports arenas, the street provides the perfect network of study to be extended upon. Further, the State Street Extension, the public pier from the base of the city to Presque Isle Bay, stands as the most popular pier within the port. The pier is further anchored by the Bicentennial Tower, the most symbolic structure within the city of Erie. Thus, the State Street Extension holds tremendous potential to be a cultural corridor and connection between the city and the water.

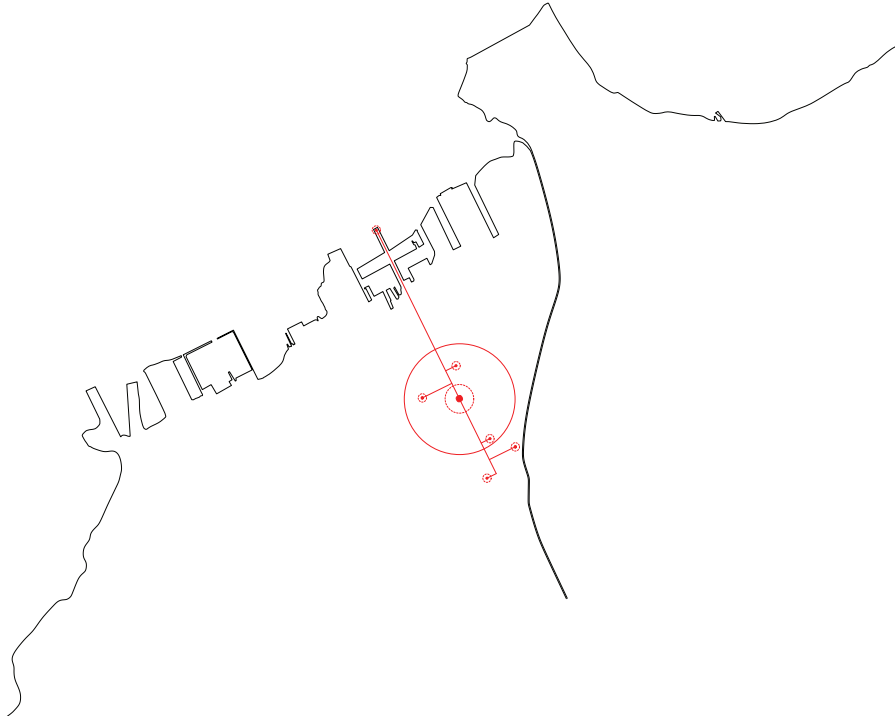


fig. 57 state street corridor

state street, historically and currently the center of town is a cultural corridor within the city providing a network of historic amenities such as art museums, theaters, historic societies, and sports arenas

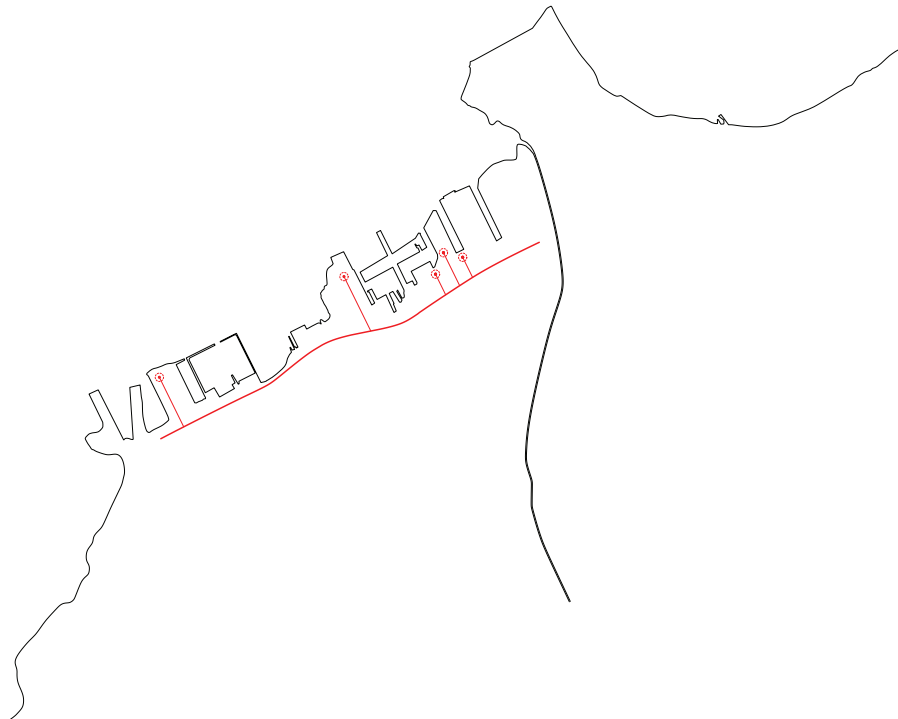
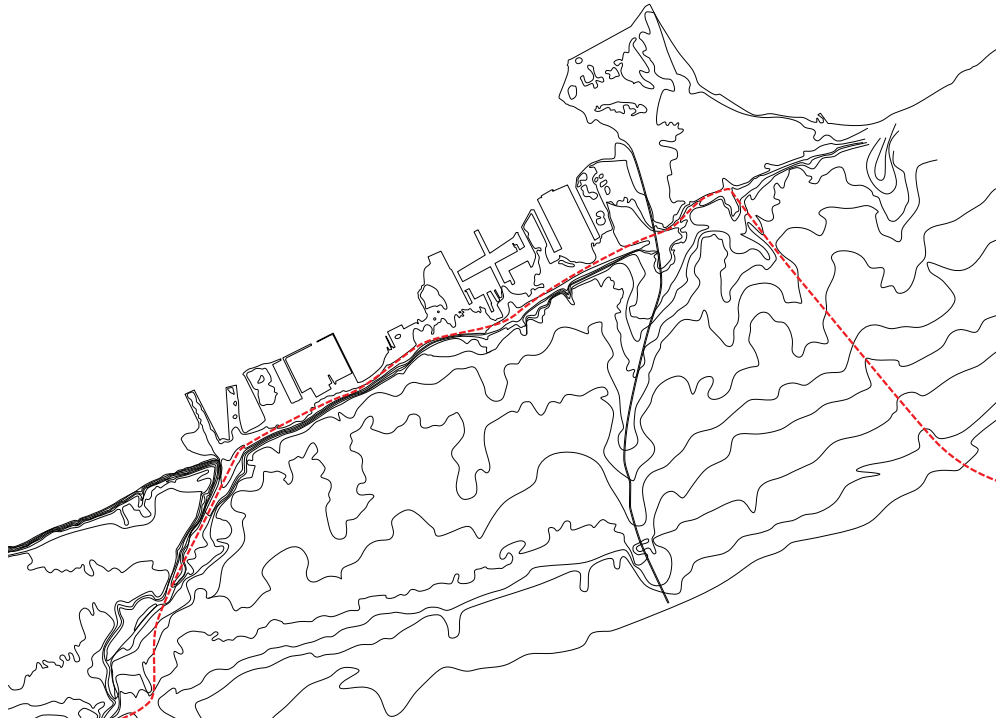


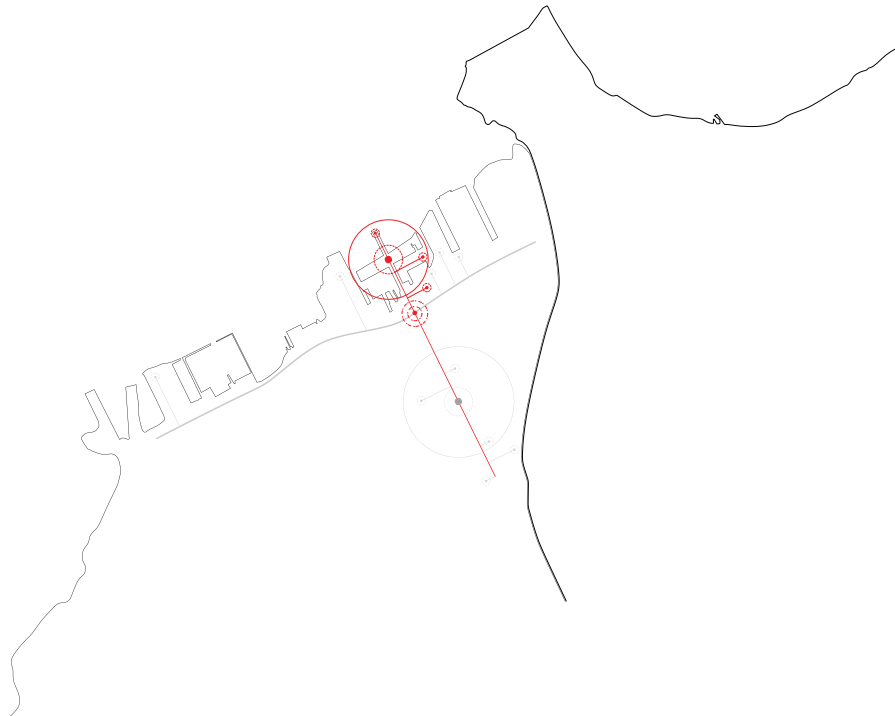
fig. 58 bay front corridor

the city has begun to create "places", or public amenities along the waterfront but lack the notion of the city and the waterfront as a cohesive "place"



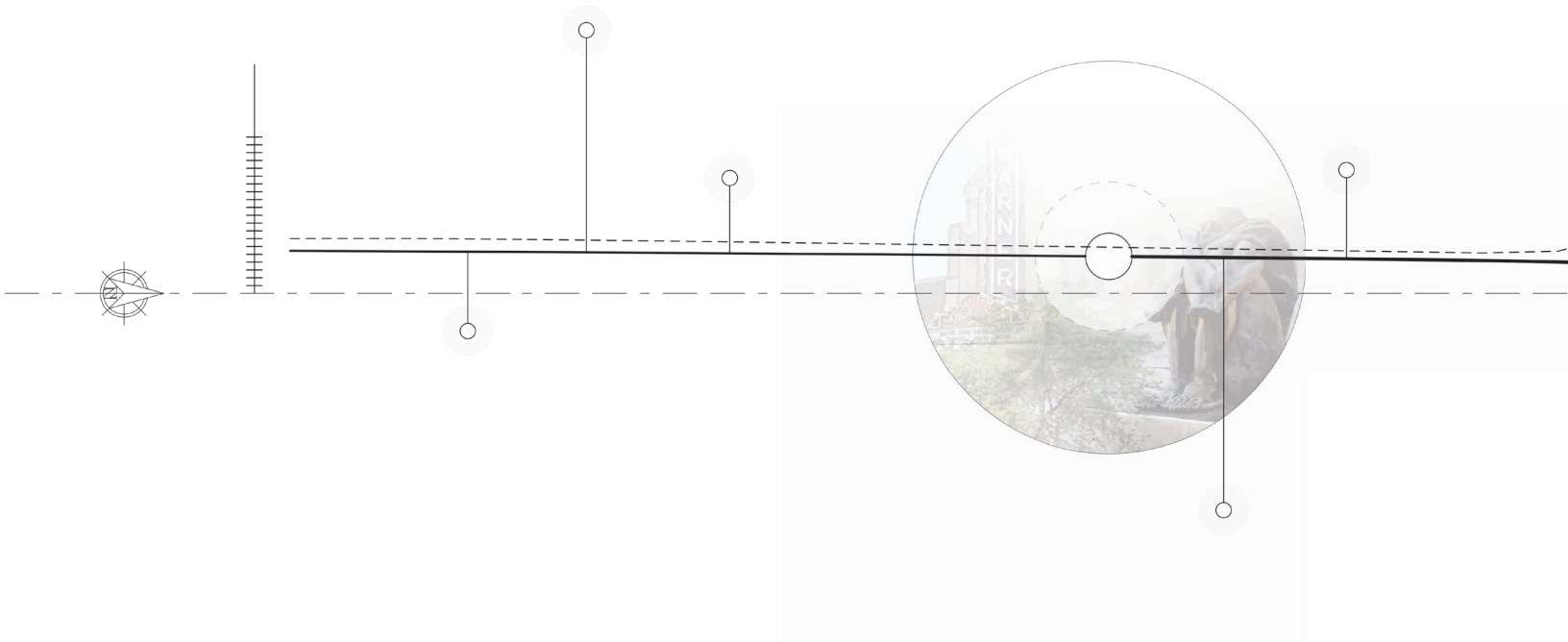
fg. 59 bay front connector

there is a 60'-0" grade change from the waterfront to the base of the city which is bordered by the bay front highway, further disjointing pedestrian access



fg. 60 state street seam

this thesis will catalyze the existing state street extension, creating a continuous seam of activated civic engagements from the cities core to the waterfront



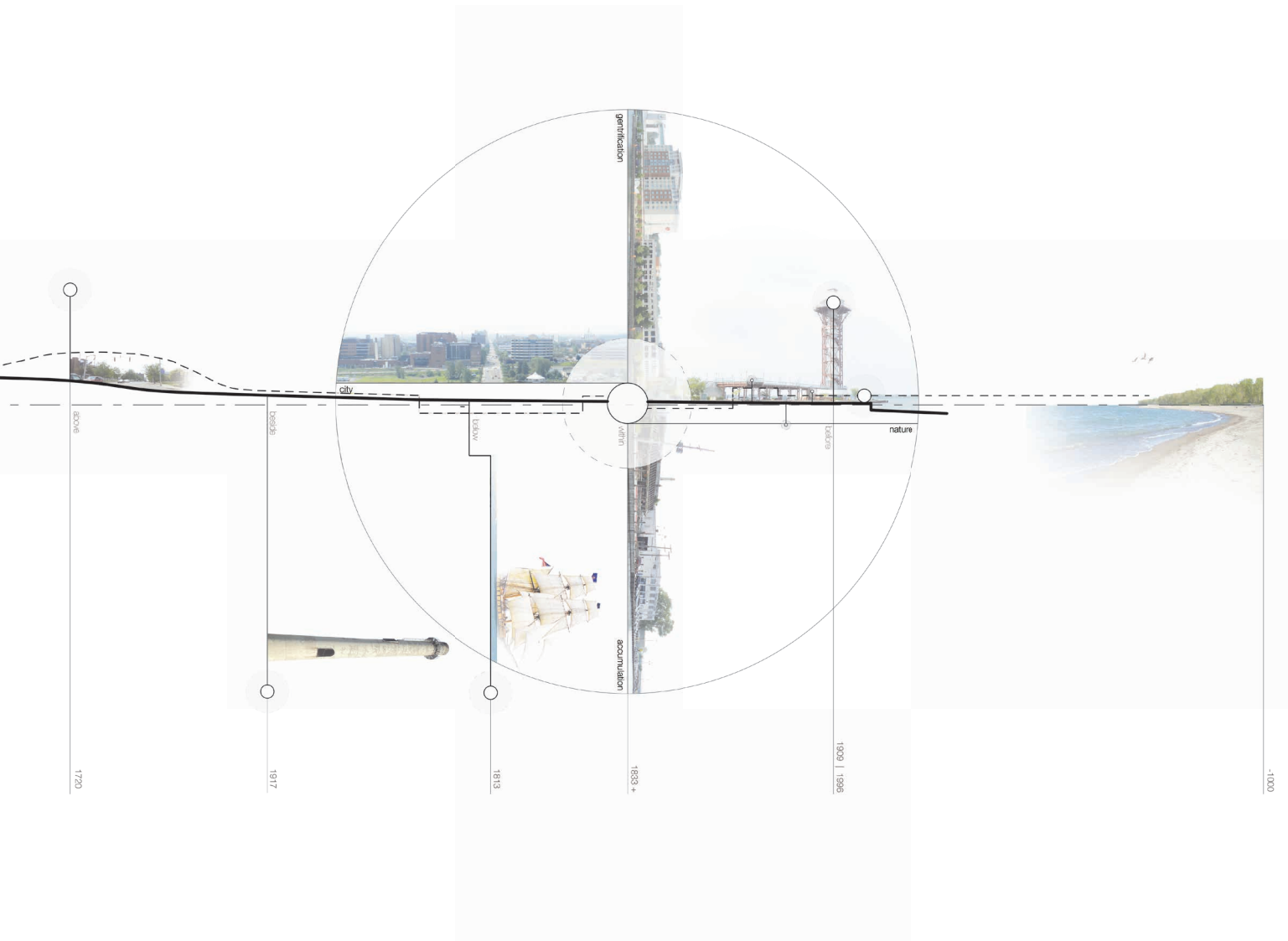


fig. 61 state street seam section cut

diagrammatic section cut through state street from the center of town to the state street extension. the diagram illustrates the thesis' extension of the existing network of cultural nodes within the center of town through the waterfront. this is accomplished through a series of activated nodes identified through the last remaining relics within the site. the state street seam will thus not only provide a continuous access of activated spaces from the city to the water, but is in a sense a time line of the city's maritime foundry, industry, and infrastructure.

VERTICAL RELICS OF SITE

The design and development of the state street seam thus begins with the identification and acknowledgment of the last remaining relics of site. Thus, three vertical landmarks will be utilized not only as a means of “way-finding”, but to provide a unique opportunity for engagement and understanding through the procession from the city to the water.

The Steamship Landing

The Steamship Landing, standing as the last landmark on the state street extension, was built as a gift to the city at the end of the Public Dock in 1960 as a symbol of the Port. The original elevated structure was constructed to provide shelter for the growing popularity of steamship travel within the Great Lakes. Today, the Steamship Landing is anchored by the 180-foot Bicentennial Tower to celebrate the cities 200 years of settlement.

The Niagara

The flagship Brig Niagara, the second landmark, stands as a relic of Erie’s maritime foundry. Built with two masts at 120 feet above the water as one of 9 commissioned ships for the Battle of 1812, the Niagara has been a beloved symbol of Erie’s Maritime history. The ship was first restored in 1931 and is currently on its 4th restoration from its original form.

The Smokestack

The 200-foot Penelec Smokestack is the first relic between the city and the port of Erie and stands as a symbol of a lost industry. Thus, the smoke stack is the last remnant of the Penelec Powerplant that occupied the land north of the city from 1917 to 1992.

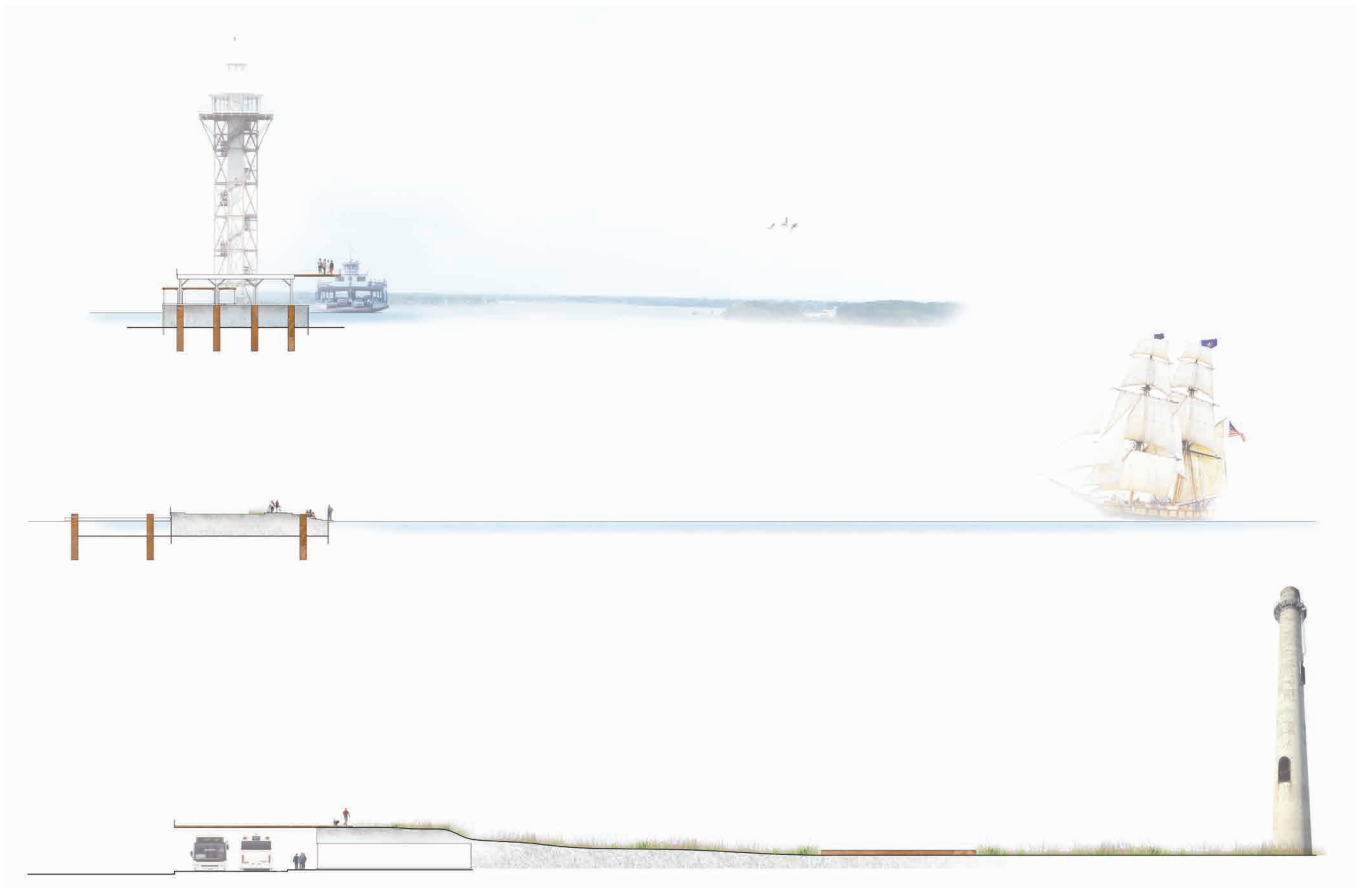
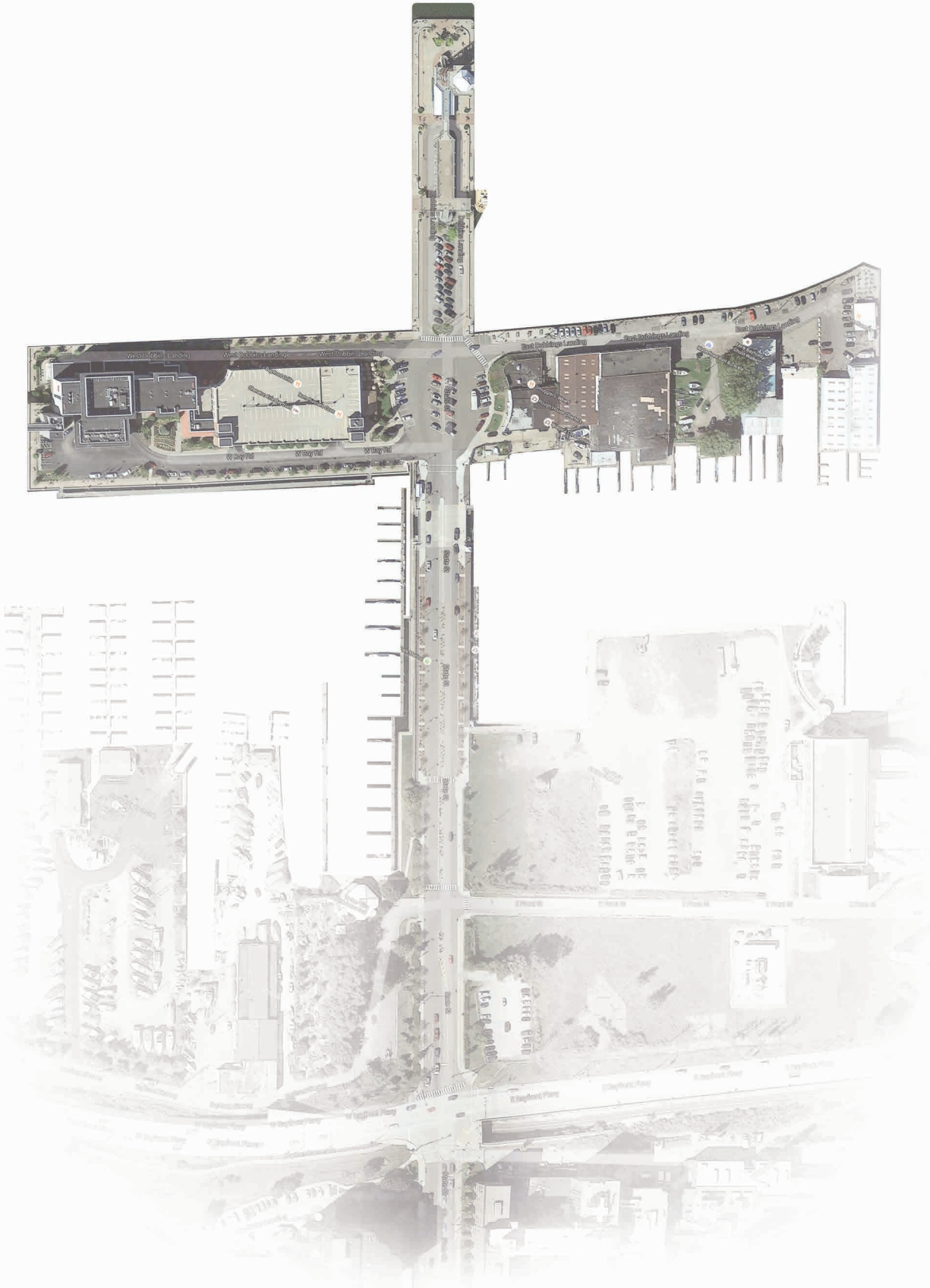


fig. 62 sectional view ports

the nodes identified within the state street seam represent the last remaining relics of a post industrial port. thus, the sectional view ports are developed through an infill-ed land edge to a smoke stack of a lost industry, a harbor edge to the brig niagara of a maritime foundry, and infrastructures edge through the engagement of the steamship landing and bicentennial tower



fg. 63 Aerial Image of Dobbins Landing

DOBBINS LANDING

The State Street Extension, formerly known as Dobbins Landing, was constructed in 1833 in response to the center of town accumulating along State Street and has become the most important thoroughfare within the city through time. Though the State Street Extension regrade allowed the street to have the most seamless and fluid transition from the city to the port, the construction of the Bay front Highway and long 30 acre pier stands unactivated and under-utilized by the city and its residents. Built as a 100-foot wide boulevard, Dobbins Landing is currently nothing more than a four-lane road with a sea of asphalt. The loss of industry surrounding the base of the pier is evident through the open fields that are currently being used as parking lots.

East and West Dobbins Landing were originally home to a vibrant community of fisherman's wharfs from their construction in 1833. Today, there is a drastic difference in fabric and scale between east and west dobbins landing that exemplifies the waterfront redevelopment strategies of both demolition and preservation. East Dobbins Landing stands as a "mummified" version of its former self with an industrial fabric retrofitted to restaurants, boat builders, and gallery space. On the other hand, West Dobbins landing was completely demolished for the construction of a 10-story hotel and parking garage: the dichotomy between East and West Dobbins landing stands between mummification and gentrification. Thus, Dobbins Landing has the potential to be developed as a major cultural corridor through the activation and utilization of site in an attempt to develop a more sensitive and contextual layer within time.





fig. 64 view of dobbins landing from bicentennial tower

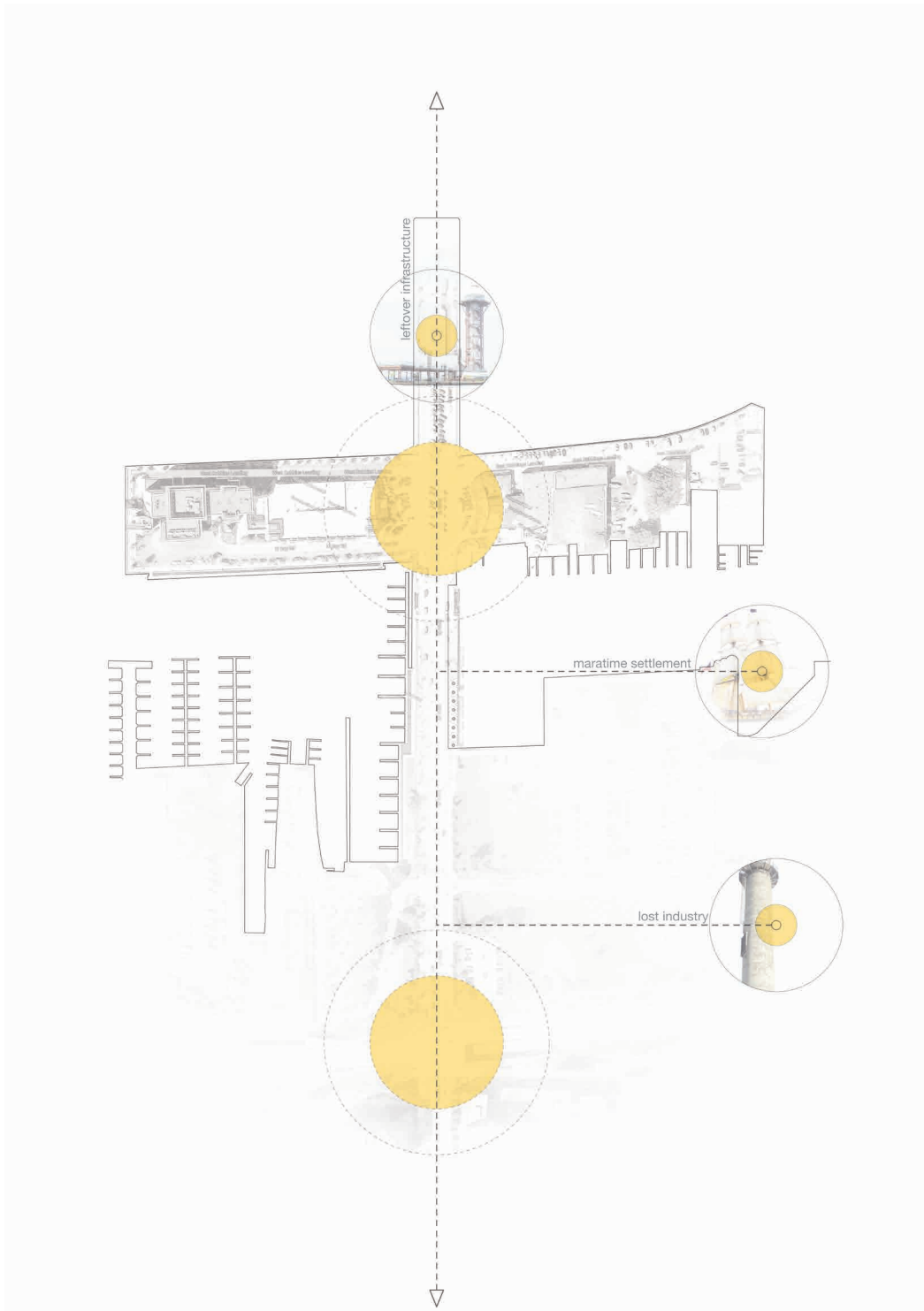


fig. 65 nodes and thresholds

the organization of the state street seam begins with the identification of nodes and thresholds.

two major thresholds or states of transition were identified: the first being the connection between the city's edge and the port of Erie over the bay front highway; the second is within the cross-axis of dobbins landing between the port of Erie and the peninsula across presque isle bay.

three nodes were further identified as the last remaining relics of historical significance within the site: a smoke-stack of a lost industry, a tall ship of a maritime settlement, and a steamship landing of leftover infrastructure

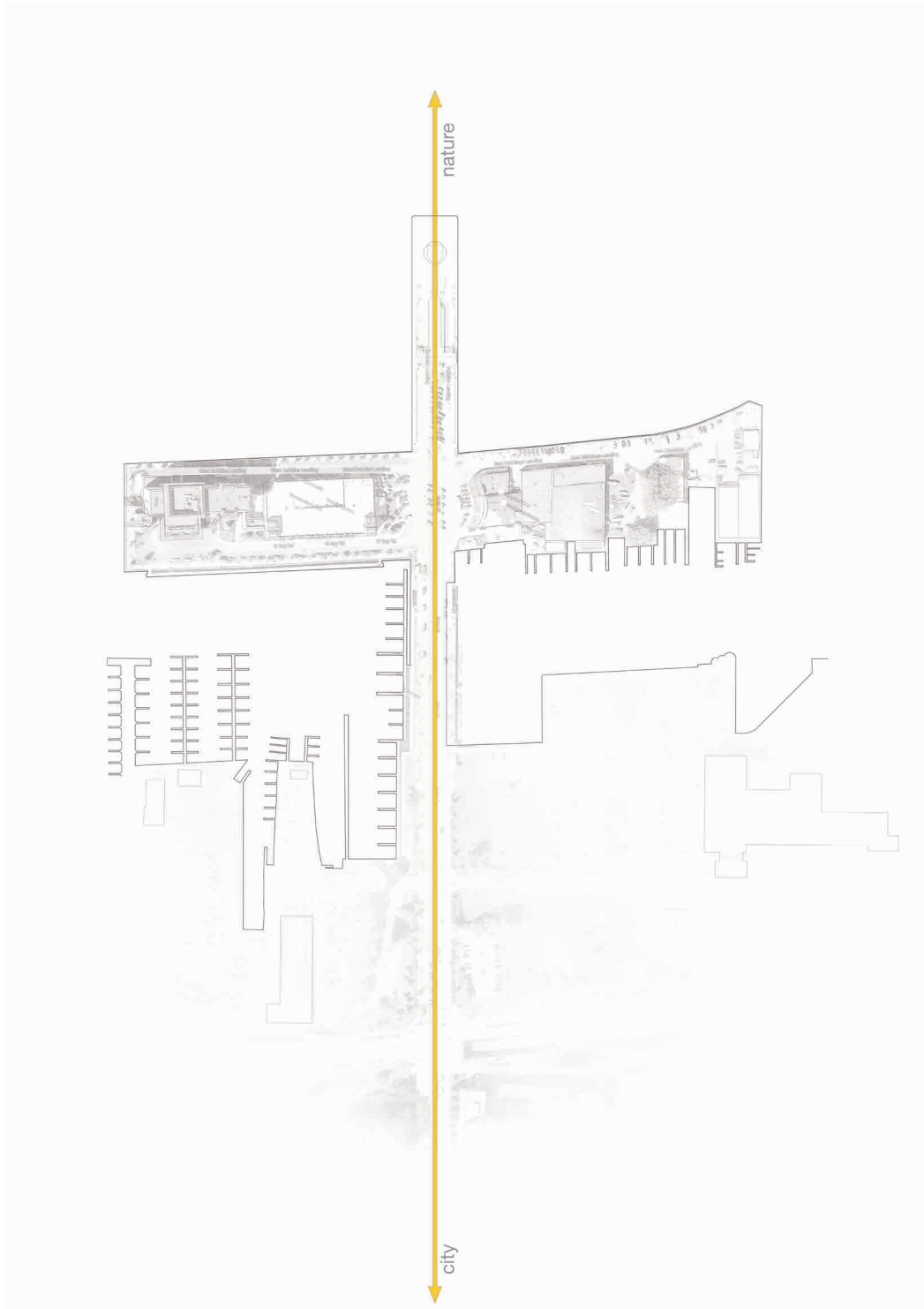


fig. 66 existing axis

dobbins landing, like the majority of the piers within the port of Erie, is an example of a literal extension of the city grid into presque isle bay. however, due to the existing 60' to 80' grade change from the waters edge to the city's edge, dobbins landing is one of two public docks that has a continuous connection from street grid to pier.

thus, the existing axis from the city to the water of a 30 acre extension at 100 ft wide is one of the most important thoroughfares in the city

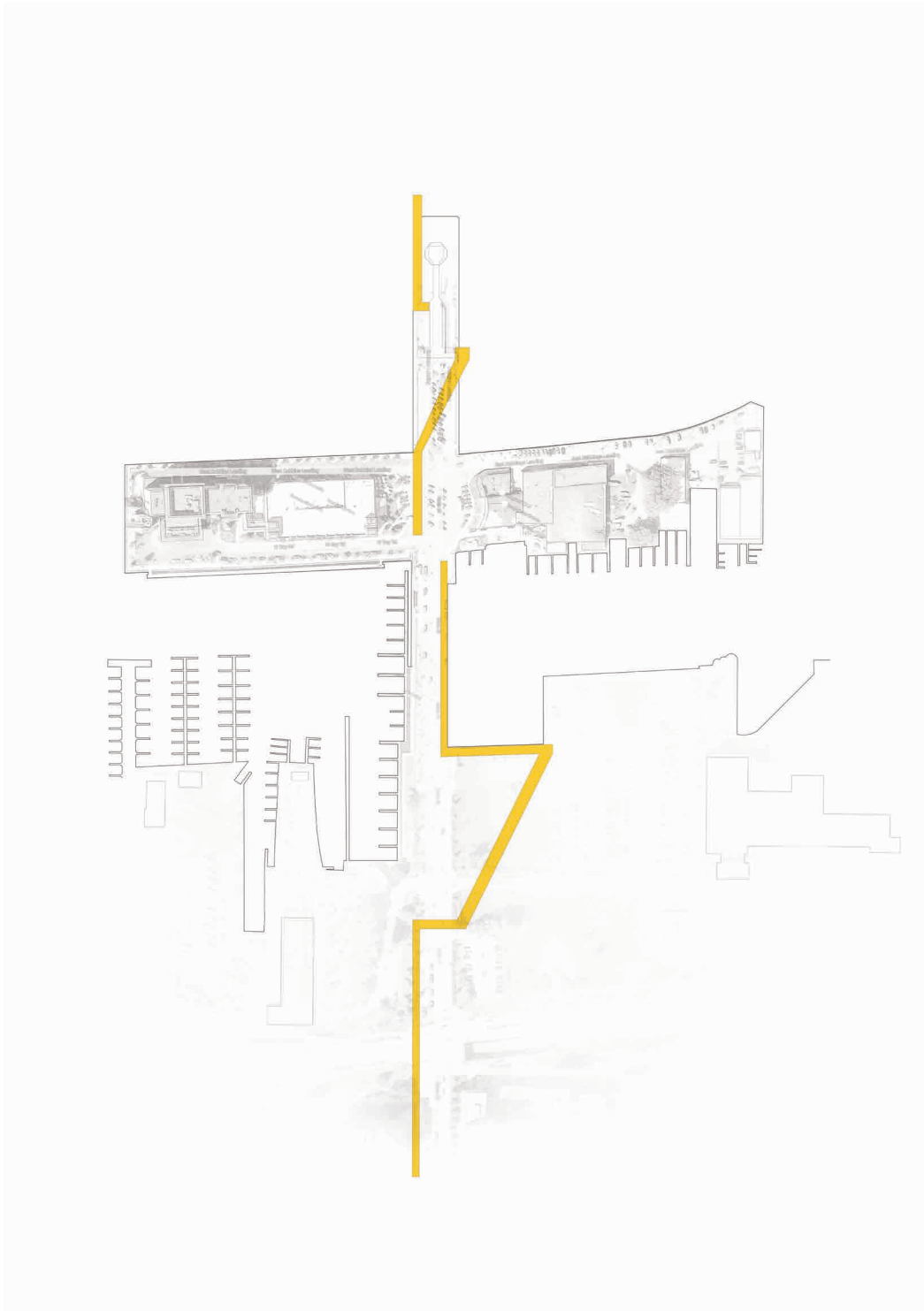
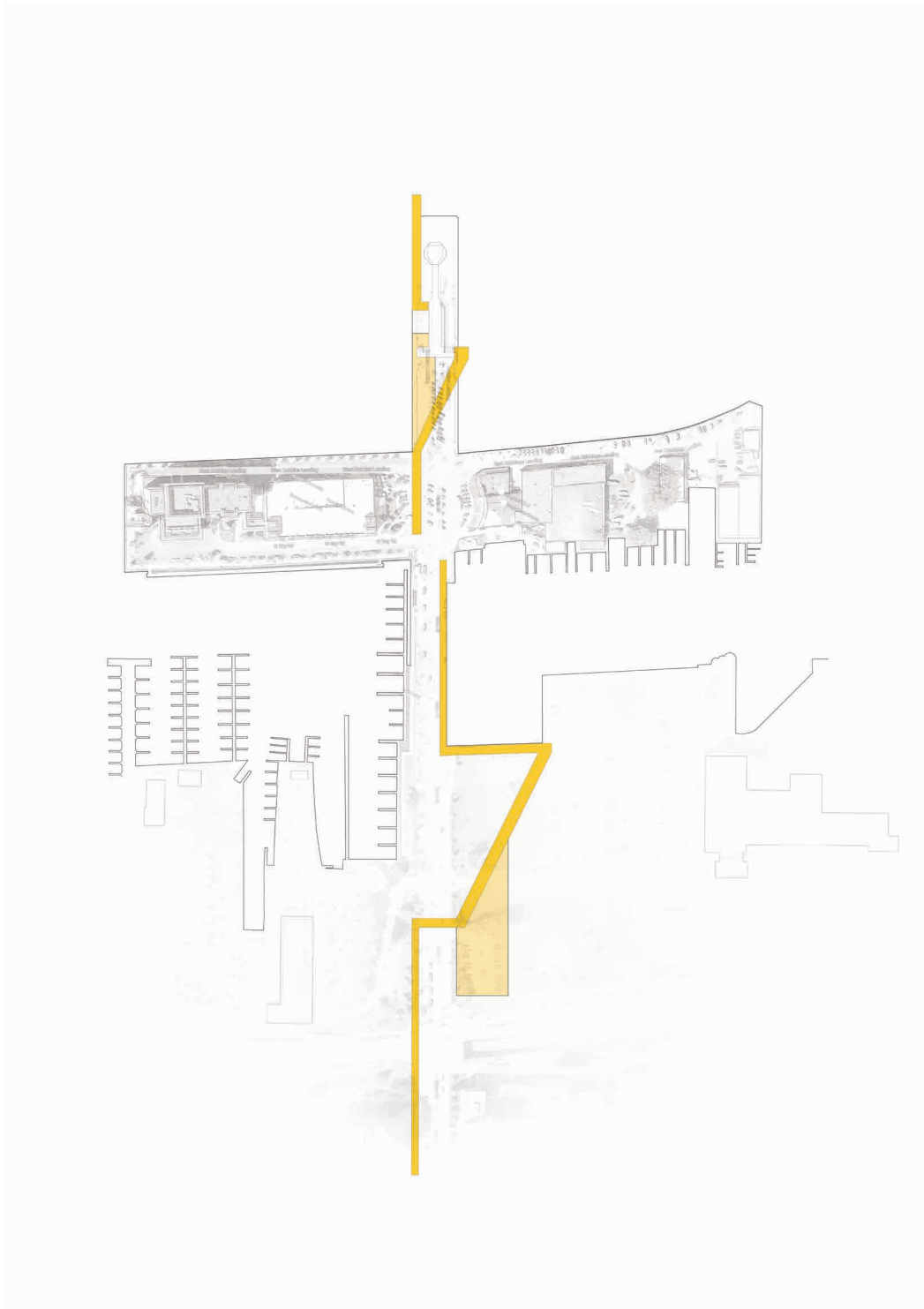


fig. 67 path of discovery

the civic engagement of the state street seam begins with a simple path of discovery. in contradiction to the linearity of both the city and the port, a new pedestrian path not only links access from the city to the water, but allows for a procession of understanding through the various layers of time, terrain, and infrastructure. thus, the path's meandering orientation was conceived to provide views and engagements through the identified nodes and thresholds within the site.



fg. 68 support pavilions

two support pavilions are proposed to not only anchor the two ends of the state street seam, but to further connect the city to the water and the landscape beyond. viewed as a new layer of infrastructure, the two multi-use pavilions are imagined to not only provide flexible gallery and event space for the city of Erie, but serve as transit hubs to provide further access to the waterfront. thus, the southern pavilion is proposed as a bus terminal to literally connect the city to the port, while the northern pavilion is proposed as a ferry terminal to bridge a seamless connection across presque isle bay.

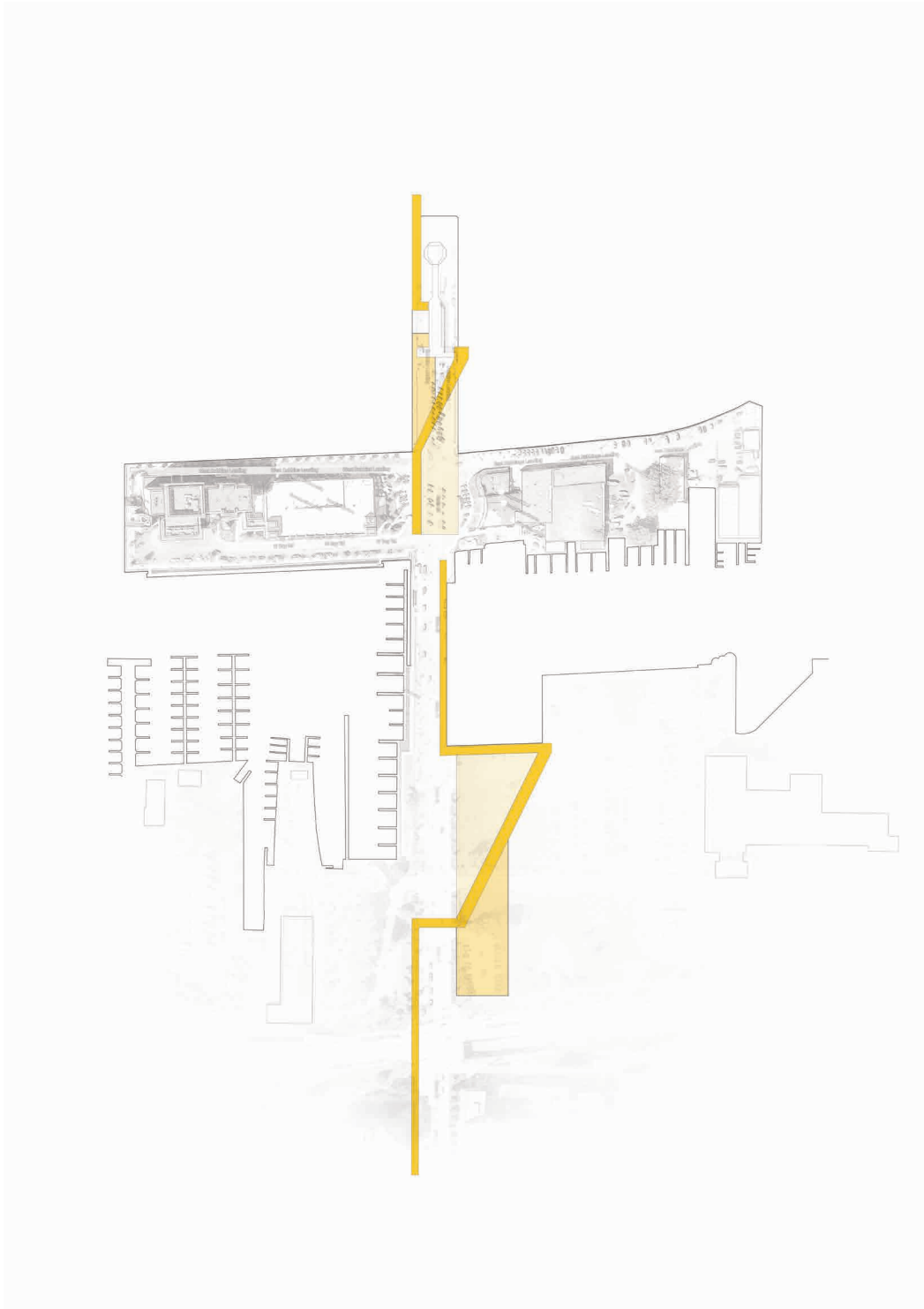


fig. 69 public plazas

the intersection and engagement of the layered path of discovery and transit pavilions creates two new public plazas. the southern plaza, which is framed by the bus terminal and east dobbins landing harbor is outward-looking, focusing pedestrians within the city to the natural landscape of presque isle. on the other hand, the northern plaza, framed by the intersection of the new ferry terminal and existing steamship landing, occupies the dobbins landing threshold and thus focuses pedestrians within the port to the developed city south of the water.

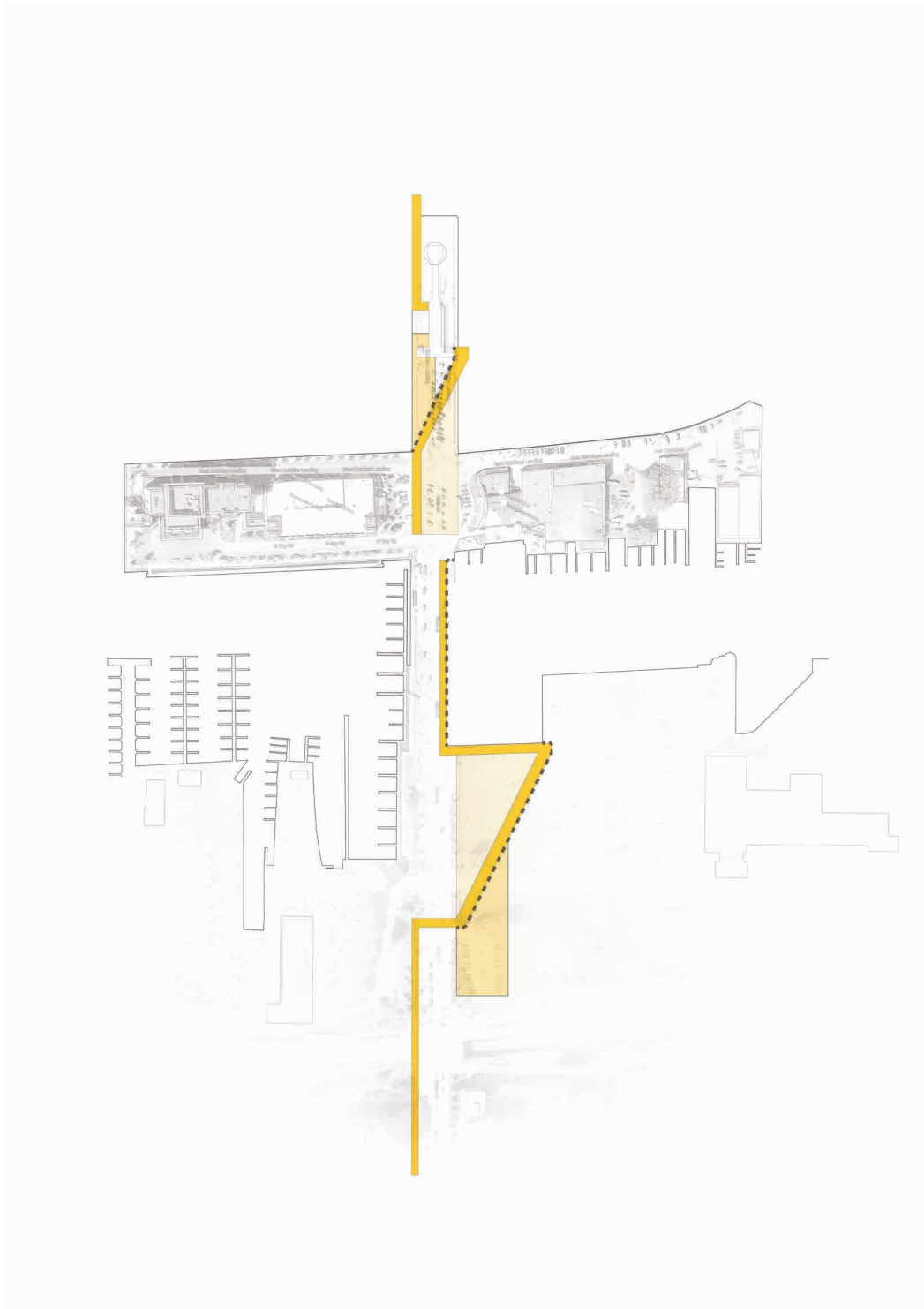
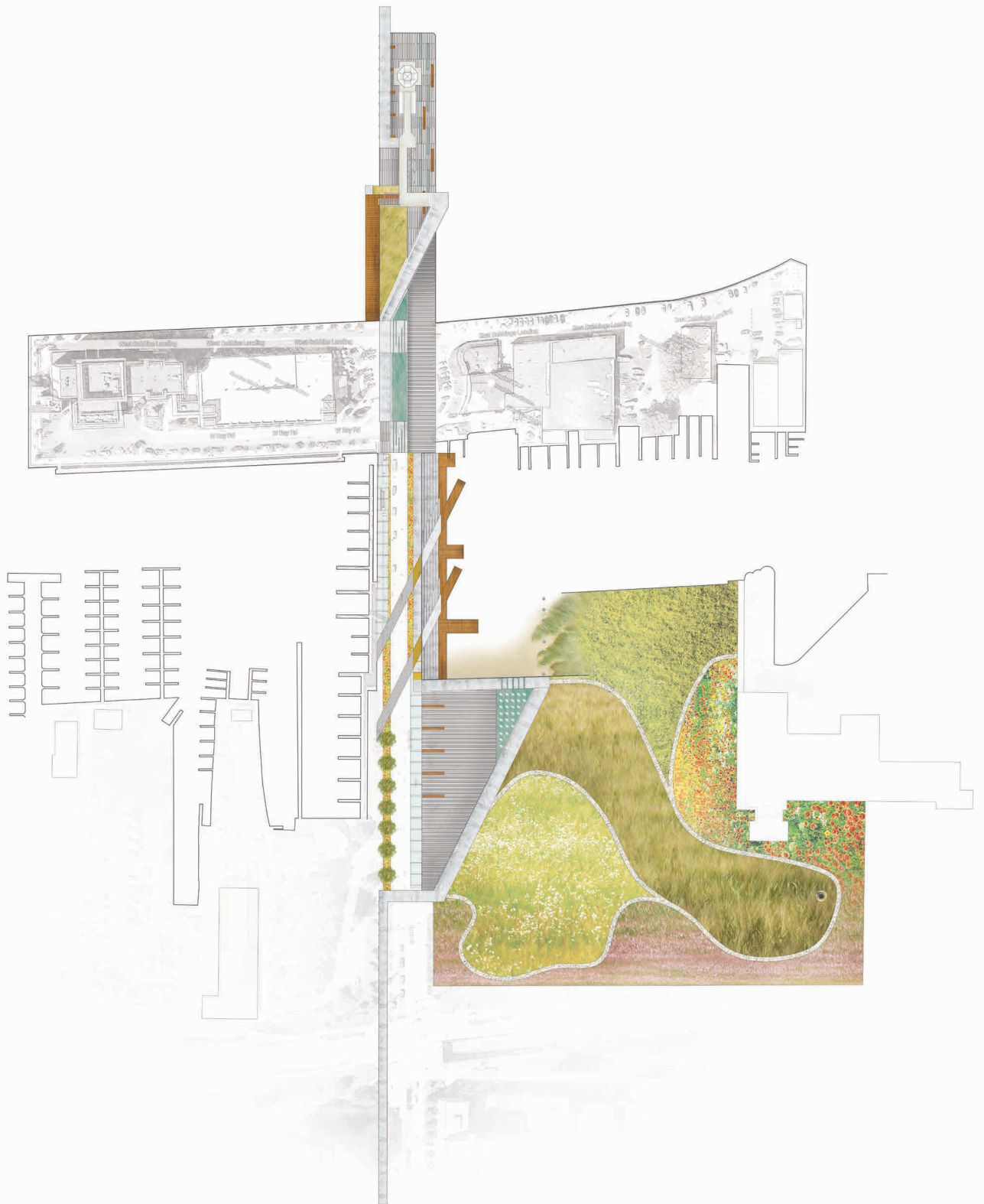


fig. 70 thick edges

the final layer within the state street seam is the deployment of “thick edges”. the pathway’s edge is blurred and extended in relation to the three identified nodes within the site. this “thickening” of the edge allows for a deeper and richer understanding of identity of place as each engagement unveils different aspect of Erie’s history. thus, the southernmost extension is through an infill-ed land edge’s engagement with the smoke stack of a lost industry. the middle extensions is through the pier’s edge within east dobbins landing harbor in reflection of the city’s maritime foundry through the brig niagara. finally, the last extension is through the engagement of the leftover infrastructure of the steamship landing, standing before the natural landscape of the peninsula.



fg. 71 State Street Seam Site Plan

6

INTERVENTION

The State Street Seam is thus realized through a deep analysis and engagement with the site's history, landscape, and infrastructure. Through a continuous pathway from the city to the water, the intervention activates the corridor of Dobbins Landing through the layering of architecture, urban design, and landscape.

The new layer of site begins with the acknowledgment and engagement of three vertical relics: The Smoke Stack, The Niagara, and The Steamship Landing. It is through the location of these historical remnants that the State Street Seam is "thickened", allowing one to meander and wander, gaining a deeper understanding of the ports identity.

The State Street Seam is thus broken down into three distinct interventions that not only respond to the identified relics, but represent the three edge conditions of Dobbins Landing: land's edge : Landscape through Lost Industry, water's edge : Maritime Foundry, and pier's edge : Engagement with Leftover Infrastructure.

The State Street Seam is thus a rich and layered proposal that not only responds to its site, but enhances the memory and identity of place. The procession from the city to the water reveals the various components of time, terrain, and infrastructure, while the procession from the port to the city reveals new architecture and public spaces that re-activating the pier. The connection between the city and Erie's post-industrial port is thus not only accessible and extended, but layered with different experiences that invite the community down to the water and back to the city.





fig. 72 birds-eye view of state street seam

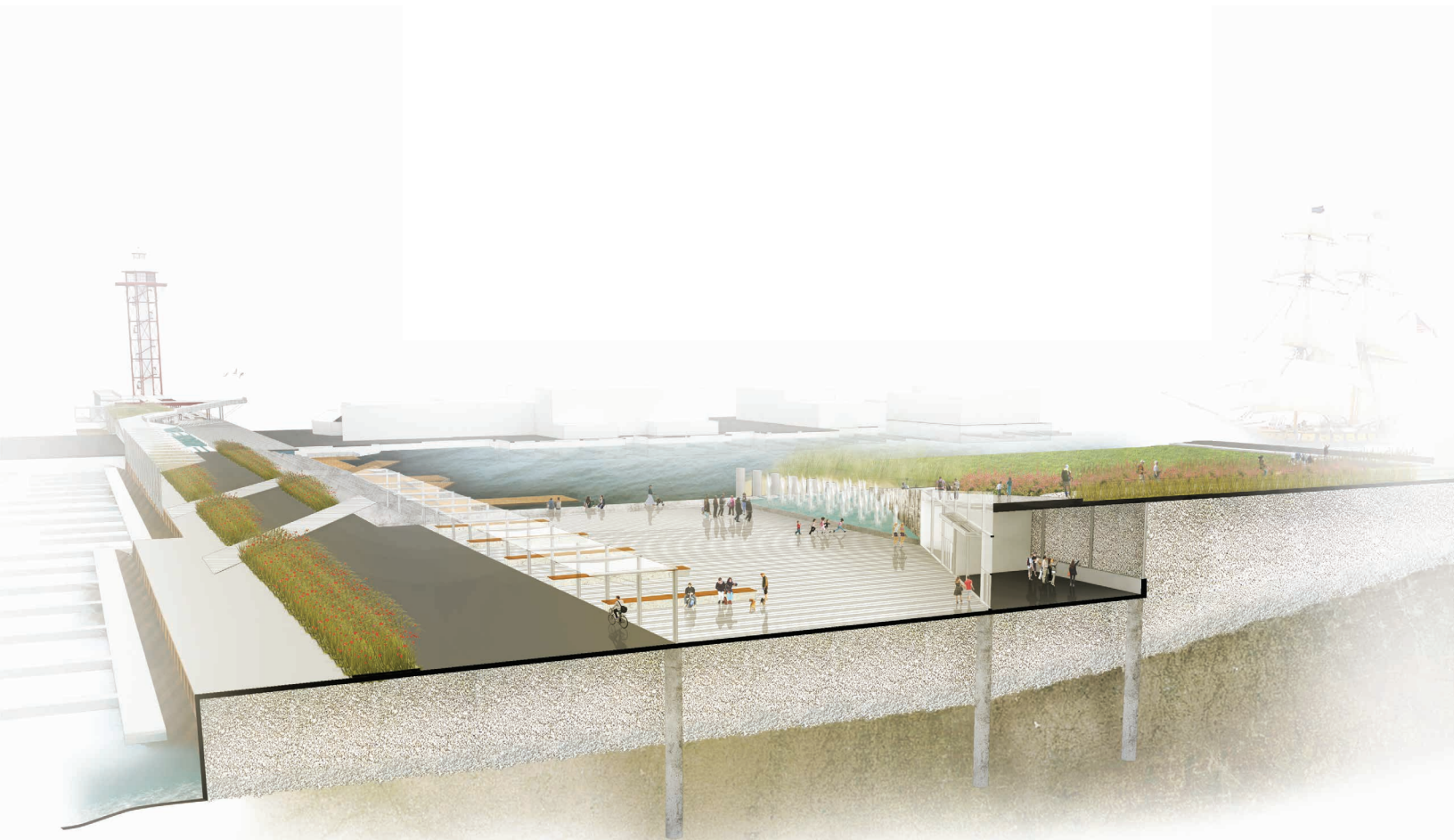
LANDSCAPE THROUGH A LOST INDUSTRY

land edge : gravel infill over bedrock

The first “thick edge” within the state street seam is a layered experience through a lost industry. As one emerges from the city, an elevated landscape meets the bridged path and transitions one through the 60-foot grade change between the city and the port. The thickened edge to the east of the site allows one to wander off the paved path and explore the former Penelec Powerplant Site. Centered around the Smokestack, the 200-foot vertical relic stands as an object within the landscape, inviting one to understand its materiality, scale, and loss.

The trails through the natural park are marked through a series of gravel paths, allowing one to understand the port’s construction of steel sheet piles and gravel fill. Thus, the path within the landscape is nothing more than a scratch upon the surface, revealing the man-made layering of earth. Whether one remains on the state street seam or makes their way through the park, both arrive at a grass lawn at the harbors edge.

Below the natural landscape, the bus terminal and support pavilion define the state street seam’s western edge through an extension of the curtain wall as a protective guard rail above. Though the architecture is undefined in detail, it too attempts to reveal the layers of site. To support the pathway and park, the transit pavilion is nestled into the new topography, further revealing the layers of site through glass retaining walls. A new public plaza activates the western edge of the pavilion, buffering the state street seam from the road as well as providing a designated waiting and queuing zone for the new transit hub.



fg. 73 Section Perspective through "Land Edge"
landscape through lost industry | bus terminal | public pavilion

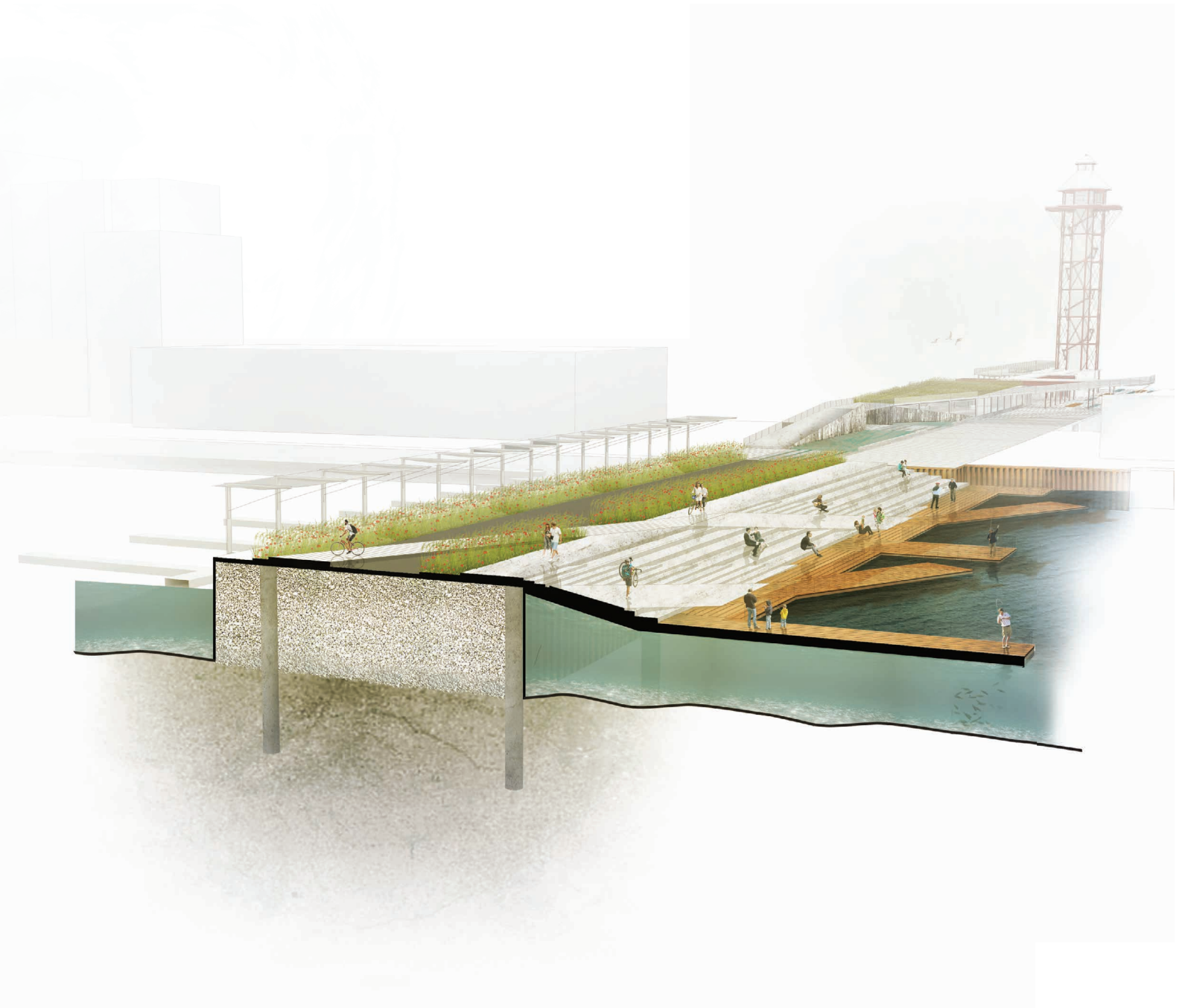
MARITIME FOUNDRY

water edge : gravel infill within steel sheet piles & concrete caissons

The second “thick edge” within the state street seam is an experience of transition through the regions maritime foundry. As one travels along Dobbins Landing, this transition moves from land to water as the piers infrastructure emerges from the city. The “thickened edge” reclaims half of the 100-foot wide state street extension and allocates it for public use. Thus, the western edge of the state street seam marks the center line of the pier, while the eastern edge has various layers of transition from infrastructure to water.

This thickened “water edge” is designed as a place to gather, rest, and reflect. A series of communal stairs transition one down to the level of the water, and invite people to gather and enjoy the protected harbor of East Dobbins Landing. A series of wooden docks float at the communal stairs edge, providing a seamless transition through the lakes changing water levels. The floating docks not only project into the water, but allow one to feel the instability and fluidity of the currents as the structure oscillates with the patterns of the waves.

The water’s edge is thickened further as it stands parallel to the tall-ship Brig Niagara’s dock across the Harbor. The two-mast tall ship standing at 120 feet above the waters surface, represents the city’s early settlement and maritime foundry. Thus, the series of transitions not only connect one to the waters edge, but reflect at the beauty and intricacy of the tall ship docked within the harbor.



fg. 74 Section Perspective through "Water Edge"
maritime foundry | communal stair | floating docks

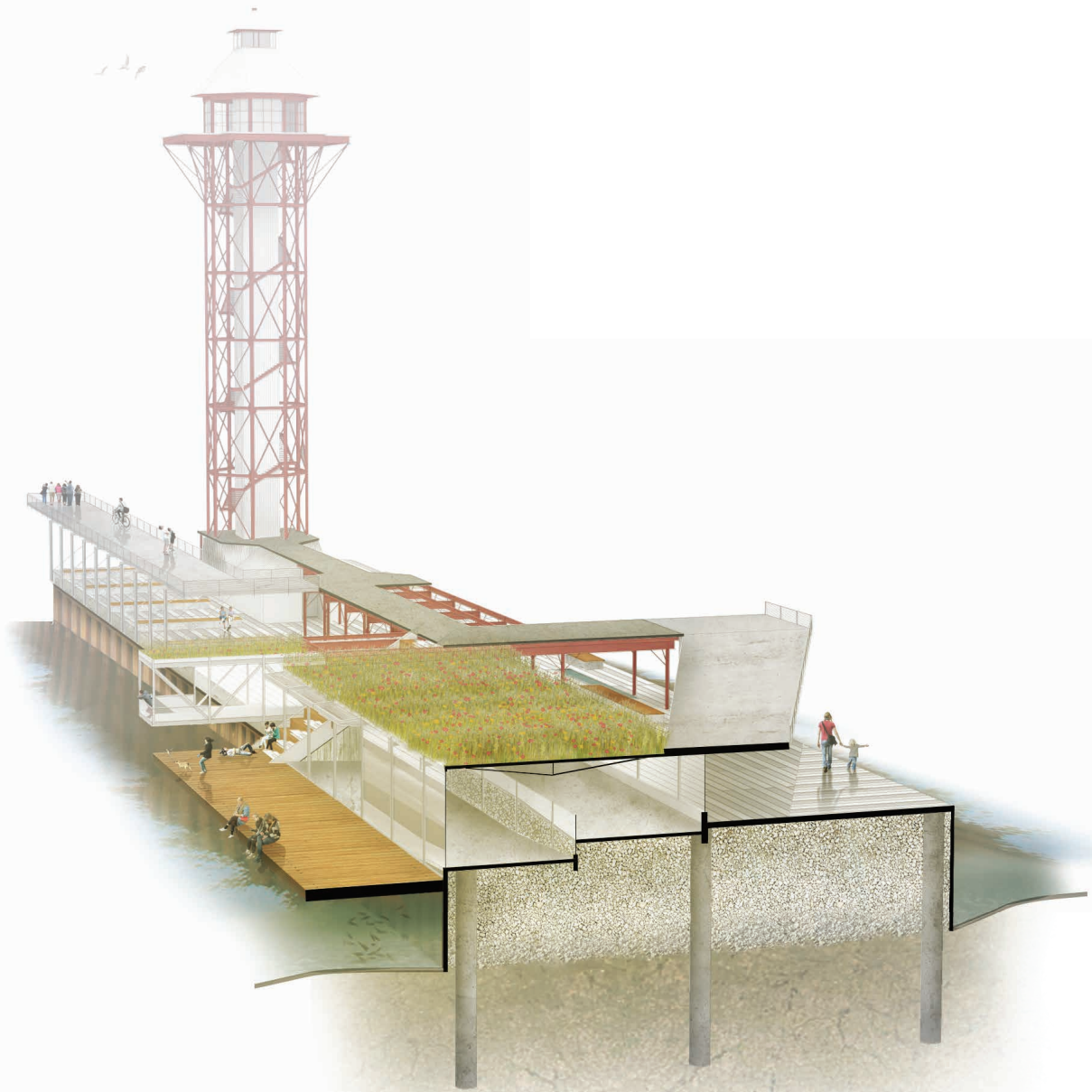
LEFTOVER INFRASTRUCTURE

pier edge : gravel infill within steel sheet piles & concrete caissons

The final “thick edge” within the state street seam is an engagement through leftover infrastructure. As one comes upon the Public Dock, the final addition to Dobbins Landing, the piers edge is completely projected into Presque Isle Bay; unprotected from the shelter of the harbor, the pier is thus focused on the landscape of the peninsula. The pathway begins to slope up to the piers leftover infrastructure beginning at the cross roads of Dobbins Landing. As the path crosses the pier to meet the platform of the Steamship Landing, it projects one over the water, providing views and understanding of the layers of structure.

Though the engagement between the old and new platforms is seamless in connection, a change in materiality designates the old structure from the new walkway. The state street seam then disappears and invites one to engage with the elevated relic. As one approaches the base of the Bicentennial Tower, the state street seam reappears to the west and is anchored on the bent steel edge. A simple elevated boardwalk thus projects one beyond the tower to provide unobstructed views to Presque Isle across the bay.

Below the elevated walkway, the ferry terminal and pavilion slides below the existing Steamship Landing, providing shelter and activation at the edge of the port. The pavilion, like the bus terminal, attempts to engage with the man-made layering of site. Thus, the length of the terminal cuts into the infrastructure of the pier, to not only reveal it's gravel filled construction, but connect one seamlessly to the western waters edge.



fg. 75 Section Perspective through "Piers Edge"

leftover infrastructure | floating dock | ferry terminal | steamship landing | bicentennial tower



fig. 76 procession from city to port

as the state street seam emerges from the city's edge through dobbins landing, the elevated path above the transit pavilion not only foreshadows the newly activated pier, but provides views to the bay and presque isle. to preserve the character of dobbins landing as well as the existing views from the city to the water, the new layers of site are covered with a wild and organic landscape. this not only retains an un-obstructed view to the port, but provides a rich immersion into a natural landscape, transitioning from the built environment of the city of Erie to the shifting terrain of presque isle.



fig. 77 procession from port to city

as the state street seam transitions back from the port to the city, the rich layering of landscape, urban design, and architecture begin to emerge. thus, the new layers of activation within the transit pavilions, public plazas and pathways are only visible while approaching the city. the reveal of newly activated zones transition one back from the natural landscape and begin to connect the new nodes within the port to the existing cultural network within the city. thus, the interventions draw pedestrians back from the water and invite one to explore the state street seam through the city of Erie.







7

CONCLUSION

This thesis began with a deep love for Erie and its waterfront. As an Erie native who spent the majority of their summers on the lake and Presque Isle, a thesis on the city's port redevelopment seemed inevitable. Though Erie and its landscape hold a strong place within my heart, the city's population and growth continue to decline in a post-industrial country. I strongly believe that the success in Erie's future is within an investment in its greatest attribute: the waterfront. Though the city has attempted a waterfront revitalization through both public and private entities, the developments remain insular with little to no connection to the water. Thus, the Fluid City was born through not only an appreciation and investigation of place, but frustration of an underutilized amenity.

The Fluid City is not the solution to Erie's Waterfront redevelopment, but does present an alternative to its thought and approach. Rather than viewing Erie's port as a series of under-developed plots, the State Street Seam views the waterfront as a continuation of the city's grid, approaching the proposal through a series of layers of site. Thus, this thesis strives to re-define how we view the redevelopment of post-industrial waterfronts.

In reflection, the Fluid City became much more of an investigation and theorization of place rather than a final "design". Due to Erie's rich history and development through terrain, settlement, and industry, a deep analysis was crucial to reveal Erie's identity through both land and water. Thus, the State Street Seam represents the first layer of civic engagement that would potentially spark new and authentic development from the city to the waters edge.

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