

A VIEW TO THE PAST:

THE **IMPACT** OF INTERSTATE-95
AND **ACCESSING** PHILADELPHIA'S
PENN'S LANDING **WATERFRONT**



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A View to the Past: The Impact of Interstate-95 and Accessing Philadelphia's Penn's Landing Waterfront

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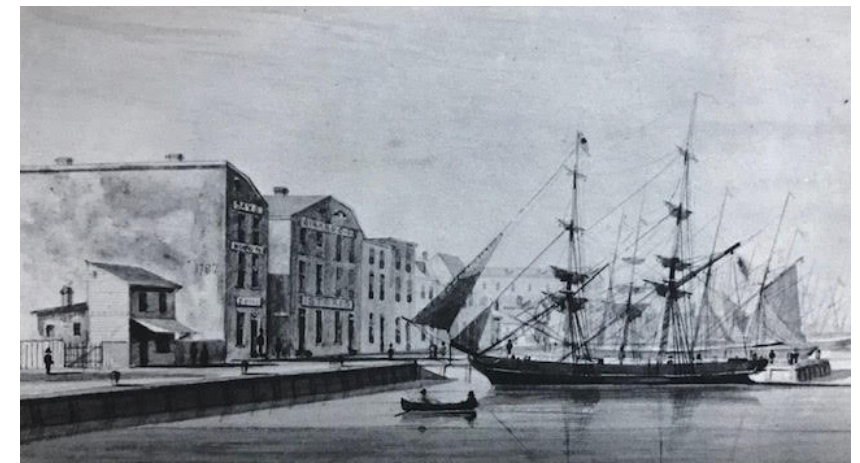
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To my beautiful wife, Betsy, whose patience, guidance, input and love have kept my sanity through these several months of graduate work.

“It belongs in a museum!” - Henry Jones, Jr.

Abstract

What is a wall? Most of us can conjure up powerful images of how they are used to separate people or things, or people from things. In reality, walls are barriers that divide by blunt force of their physical presence and their immovability. Ironical that an engineering marvel that is meant for mobility can in of itself be a barrier and a wall. Can roads be walls? This thesis will explain that yes, they can be walls, and that the consequences of their installment can have unintended consequences on the very people they're supposed to serve.

The idea that the Delaware Expressway, Interstate-95's original name through Philadelphia, became a wall that separated the city from its waterfront is not a new concept. In 1970, the *Philadelphia Inquirer* quipped that the Great Wall of China had been built ten-times at the speed by which the new highway was being laid out.¹ Though this was meant to take a shot at the slow construction process, and the disruption to the city that it was causing, it inadvertently revealed the reality of what the highway was to become for the city: a wall.

Walls are meant to either keep people in or keep them out. Their very practicality exists solely to separate; to divide one side from the other. Philadelphia once had a wall north of the city near present-day Spring Garden Street, constructed and maintained by the British army during their occupation from October 1777-June 1778. And its purpose was to keep out or slow an approaching enemy force. But that wall was intentional. Roads have long been used as ways of connecting people and places. Their very purpose is the opposite of keeping people out. They're intended to bring people together by their very nature: providing a pathway to enable a person to move from here to there.

¹ Gottlieb, 2015.

Interstate-95 looking south from
the Ben Franklin Bridge.



Philadelphia's waterfront has been a focal feature of its identity since its founding in 1682. In many respects, the city was born on the riverfront and sustained through generations of commitment to the port's success and ability to shape economic and cultural development. Indeed, the peninsula between two rivers was specifically chosen for its access to water. It has undergone numerous transformations over the centuries, trying to stay relevant and service the needs of the city. And in this, like all cities, the identity of what once was slowly fades as the new is built up. A collective memory holds the line of what should be remembered, and often lets far too much go. Is this an issue of presentism overriding the past, or the inevitable letting go of what is no longer needed or desired? Depending on who you speak to, the waterfront's sustainability requires constant innovation and change, and there is no denying the health of a riverfront city may stem largely from its relationship with the river.

With the continuing emergence of awareness of how twentieth century city planning has created challenges for current and future residents, plans that are in the works provide opportunities of engagement that tie to how the museum field is changing its definition from within. Museums exist to assist in the public's processing of memory through its collections and archives. The following thesis represents a two part synopsis: a case study of how the construction of I-95 has impacted accessing Philadelphia's Penn's Landing waterfront, and how an outdoor interactive that summarizes the waterfront's story may service the community by applying elements from the museum field to a twenty-first century design.

Thesis Statement

Philadelphia's historic waterfront has undergone centuries of change that have affected its identity in the memory of the city's residents and visitors. Using the physical barrier created by Interstate-95 to explain these constant changes and their effects, this thesis will portray the waterfront's storied history through a contemporary design depicting how changes through urban development have affected the city's past and will continue to impact its future.

After providing the backstory of how we've arrived at the potential cap solution, this thesis will argue why the cap is the perfect location for presenting the waterfront's history in an interactive way; what the design might look like, and its intention to be an example of how the museum field continues to expand its own conceptions of interpretation.

For the purpose here, the development of Interstate-95 in Philadelphia is a story of city and government planning that put a visionary project of want over the needs and concerns of residents. It was a construction project decades in the making. Long wanting to connect the major cities of the northeast, urban planners within government agencies were looking for ways to adapt to twentieth century demands of accessibility brought to local communities by the automobile. And with the popularity of the expressway elsewhere, some cities were demanding to be included in the next major infrastructure project. Officials sold the idea as connecting the suburbs to the urban center by making commutes far more tolerable. And because of these demands, Philadelphia's storied waterfront and surrounding neighborhoods were eyed for demolition without care or concern for the people who came, went, and currently resided in those blocks that were now circled for destruction.



The red line shows I-95 cutting through the Philadelphia waterfront, circa 1796. The green line is the Ben Franklin Bridge.

The decision to build I-95 is a story of a city neglecting its residents; at nearly every phase of the project, concerns were often brushed aside or excused by experts or wealthy citizens with outsized influence. Opposition emerged in the early 1960s, a full decade before the highway would upend life in Center City. Community members from various demographics voiced concerns that the city was disconnecting itself from its waterfront, and displacing communities with long ties to historic neighborhoods in the crosshairs for demolition. In truth, the highway separated all of Philadelphia — not just its center city, but its northern and southern neighborhoods — from the Delaware River. In the process, this is a story of a city deliberately erasing its past by pouring concrete over the very land arcology that saw its birthright, and permanently cutting off the city from its waterfront. It's a story of continued frustration: a highway's presence with its continual maintenance affecting residents in Philadelphia today, and how the memory of the waterfront's past is frustratingly absent for most visitors.

Introduction and Purpose

Using elements from the museum field, this thesis proposes an outdoor interactive at Philadelphia's Penn's Landing waterfront that will present an engaging, playful, informative simulation that brings the past to the present. This thesis will demonstrate how designs for exhibitions can exist in outdoor spaces, serving visitor interest in settings that are not commonly associated with what a museum is. The power of place – where it happened – offers the opportunity of direct engagement with visitors to the intended space. By using the case study of how the construction of Interstate-95 through Philadelphia's historic Penn's Landing waterfront has created a physical and psychological barrier to accessing the past, the stories presented through this analysis will argue the necessity in making them accessible to the public.

The first point is to establish the city's waterfront, its importance to the identity of Philadelphia, and the factors that evolved its relevance over the centuries. The second point is providing a brief summary of the variables that went into why the interstate was constructed through the city. This will cover several decades of negotiations over design and development, but will steer clear of providing a thorough examination of the subject for narrative considerations relating to the purpose of this thesis. Coupling with this second point will be the discussion of how automobiles came to define urban planning in the twentieth century, which have spurred continuous debates over the long term impact to neighborhoods and communities affected by construction.

With the development of Interstate-95 established, this thesis will then provide critical analysis by highlighting case studies of other highways that have similarly affected cities. To complement this analysis, examples of highway caps that have built parks and recreational areas atop the roads will be provided, followed by the inclusion of outdoor designs that utilize open spaces in ways of engagement. The purpose



of this section is to support the design component's aim of being included on the proposed cap scheduled to be built between Chestnut/Walnut streets in the coming years.

To support these objectives, this thesis will define what a museum is, and how the field continues adapting to ways the public receives information. For example, history museums that call cities their home might try to reflect the identity of the city through their exhibitions and programming. In the case of this thesis, how might a design that incorporates museum aesthetics showcase the identity of Philadelphia's waterfront, and how Interstate-95 has continued a history of forgetting? The design component will seek to answer this question.

Personal Statement

This project touches on two passions of the author: architecture and cartography. Despite not being professionally trained and proficient in either, a deep fascination with how each plays a role in a city's identity persists. Whether it be the many one story colonial brick bungalows, rowed Brownstones lined up behind plump poplar trees, or a hodgepodge of art deco, modernist, postmodernist and futurist design all within a city block, these elements play off one another and shape people's perceptions of what their city is. This adds to an equal fascination with city planning and why elements are created where they end up. What factors into these processes? What do city leaders envision that aligns with or neglects the identities of residents within the city? How much say do residents ultimately have in big infrastructure decisions, and at what cost do residents pay for planning that does not solve stated problems, or creates new ones? These questions frame a curiosity towards city planning, and specifically to how Philadelphia has risen in the last three and a half centuries.

Tied into this fascination is a hobby with cartography. While a concentration primarily rooted within the American Revolution and Early Republic have taken precedence, personal renditions of topographical and city maps of Philadelphia before 1800 have left a deep impression of how the city has changed over time. Has this unique relationship with the city, as a lifelong resident of southern New Jersey, and now in a more professional sense, enhanced how one views its physical nature? Curiosity and observations abound while walking the paved sidewalks and cobblestoned interludes.

These two interests, along with a lifelong love and closeness to the city of Philadelphia, have collided with aspirations to enter the museum field as a historian. Storytelling has always touched a nerve. From a young age, sketching and creating comic books, or filming stop-motion movies with action figure toys served as means of dialing these instincts. Writing has been a powerful outlet in harnessing the inner voice, the

channel to the soul. Becoming a historian was a natural transition from years of writing poetry and fiction because it allowed the continual need to tell stories. And while many might presume that writing nonfiction is easier because it's just condensing what has already happened, the trick is creating something new and useful, maybe even exciting, from what is readily available at our fingertips with the internet.

A good historian seeks to understand, and wants others to gain a similar understanding. That's not to suggest all people should think the same, something one should have a biological rejection towards. But through the process of discovery, gaining insightful knowledge enhances the individual. It changes the individual, remakes and shapes them thereafter. The currency in question is what ripped through the first imaginations in front of the prehistoric fires. It's the human desire to understand the world and each other. Storytelling is the root of this tree with its many branches of inquiry. Curiosity is the spark. A true artist cannot exist without capturing the curiosity of a stranger. Otherwise there is no exchange, there is no fire.

The purpose of the museum profession is very much tied to capturing the curiosity of the individual. And once it has been captured, is the goal not only to provide the public with useful information, but to persuade them on the why? The puzzle exists to be tinkered with, but its existence isn't reliant on existence alone. It must have purpose, a resolution, a reveal. Something to be taken away and dissected within the brain over and over. Something that demands more of the individual: a reflection to be stored within the collective memory.

Glossary of Terms

Activating Space: utilizing a given space’s maximum potential for visitor interaction.

Cap: this will serve as the main term to describe the concrete cover over Interstate-95 at Penn’s Landing. Similar words such as cover and deck mean the same thing.

Community: used in this thesis to define the present residents of Philadelphia and their accessibility to the waterfront.

Elements: specific to the museum field, describing the attributes of interpretation, preservation and programming interaction between the past and present through modern physical designs used in both indoor and outdoor spaces.

DOT: Department of Transportation. Example: PennDOT, Pennsylvania Department of Transportation.

DRWC: Delaware River Waterfront Corporation.

Highway: this will serve as the primary definer for Interstate-95, as other terms such as expressway, freeway or roadway may be referenced or used for specific purposes.

Identity: how Philadelphia’s residents and visitors view themselves within the collective identity of the city, past and present.

Memory: defined in this thesis to explain how residents and visitors recall the city’s history, or lack thereof remembrance of it.

PLT: Penn’s Landing Telescope

Power of Place: telling a story at the site of the where the story occurred

Waterfront: this will serve as the primary definition of the stretch of waterfront this thesis is profiling, the area south of the Benjamin Franklin Bridge or Race Street south to Pine Street. It may be referenced or used for specific purposes other than this.

Visitors: specific to the Penn’s Landing waterfront

Rationale

Of great interest is how Philadelphia was planned and continues to be reshaped and designed by engineers. The city was the first in North America to incorporate a grid layout, employed by William Penn's surveyor in 1682. Indeed, for the bulk of the city's first one hundred years, streets were straight and crossed one another in this grid pattern. Dock Street, formerly Dock Creek, was one of the glaring examples of a winding street cutting through the monotony of the grid layout. Through research, the 1938 Highway Plan predated President Dwight D. Eisenhower's federal plan by two decades. On the 1937 map, Interstate-95 is already drawn out, extending from Maine to Miami, Florida in a very similar trajectory that would ultimately be the road's pathway. Looking closely, the road cuts right through Philadelphia, indicating the intention was always to go through the city. This decision would affect residents who lived between 2nd Street and the Delaware River, Front Street and along the Delaware Avenue corridor. Notwithstanding the historic buildings and neighborhoods in Old City and Society Hill, the highway's path would disrupt and displace residents of lower income, including those of historically marginalized communities and of ethnic-immigrant demographics. However, topics pertaining to those subjects is research that is not part of this thesis.

With the highway's impact on Penn's Landing in mind, the question arose if residents and visitors were aware of what the waterfront once was. For the past three decades, a slow rehabilitation has created a recreational destination with restaurants, decommissioned naval vessels and popup attractions, in spite of I-95's looming presence. Yet what effort was being made to access and interpret the waterfront's pre-highway history? The development of a conceptual design visitors could engage with the forgotten history became the focus for this thesis's destination. While the movement to push museums into a non-neutral position on contemporary issues has been embraced by many institutions, the greater effect of their awareness in how they interact with their surrounding communities served as an early starting point.

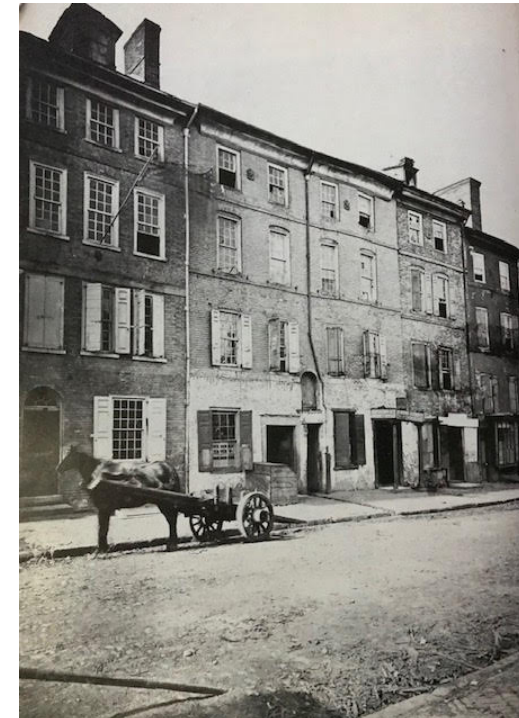


Presenting a topic that continues to interact with the people in Philadelphia on a daily basis offered unique opportunities of engagement.

In short, this is a contemporary issue that is not going away anytime soon. How might individuals who either live or interact within Philadelphia benefit from engaging in this story? How has urban development played in the story of Penn's Landing? And what, if anything, should audiences know about this history?

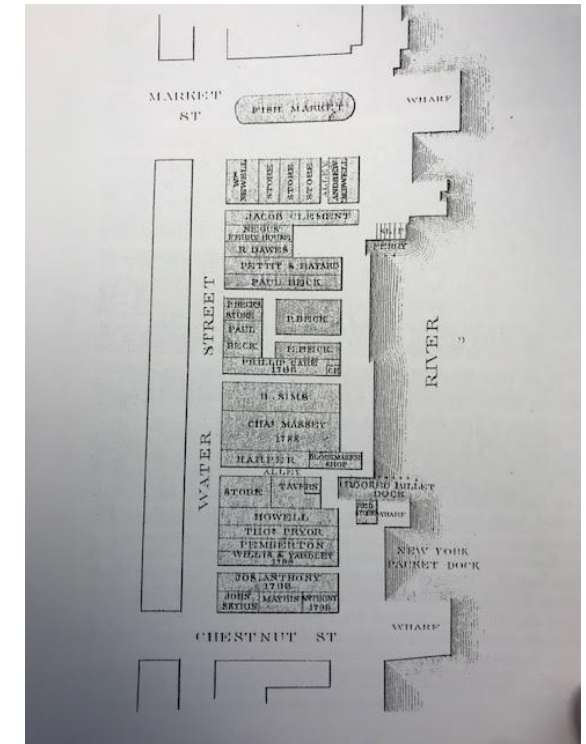
Literary Review

The bulk of the initial research has come from several sources, both in book and online forms. For the purpose of this review, focus will be put on Harry Kyriakodis's *Philadelphia's Lost Waterfront*. Mr. Kyriakodis devotes Chapter 20 to Interstate-95 or by its better name, the Delaware Expressway. He provides a fluid overview of how the highway was proposed in 1932 with a plan drafted in 1937, but was ultimately delayed because of World War II. The idea was picked up again in the 1950s and funding was mostly obtained through the Federal Aid Highway Act of 1956. Part of the highway's selling appeal was conducted by Edmund Bacon, then chief planner for the city. Mr. Bacon envisioned a city that catered to the automobile. To challenge the vision of the planning board, architects from around the city drafted a counterproposal in 1965 that voiced many of the concerns that would eventually be borne out by the highway's development and impact along the waterfront. The counterproposal succeeded in convincing the city to adopt a modified plan that placed a portion of the highway below the existing street level, effectively carving out a stretch of earth along the waterfront dubbed 'the bathtub.' But critically, none of the plans voiced forbidding the development altogether. What designs to curb noise from traffic that were initially proposed or intended to be part of the highway's completion, such as caps or lids (concrete covers that serve as bridges over the road that can have parks built atop) have remained undeveloped or partially-installed because of funding problems. Thus, despite two existing walking bridges and a partially built cap with park in Old City, the highway's presence continues to wall off much of the city from Penn's Landing and adjacent waterfront. Coupled with the existence of Columbus Boulevard, there are in reality two major roads cutting a huge gulf between Old City and Penn's Landing. The challenge remains how to undo what has been done without removing both roads entirely, a feat that only a small minority of passionate advocates favor. Regardless, the impact of the highway is one of constant disruption to a historic neighborhood, sacrificed for the *greater good*. Like Philadelphia, other cities have dealt with highways disrupting their communities. Some cities have been affected differently, but all share a similar pathogen: urban development at the expense of the city's residents, and little regard for the long-term effects the road's placement might have on the city itself.



Right: A depiction of businesses along Water Street, circa 1795-1810. Note the several taverns mixed in to the neighborhood.

Left: These types of row houses and buildings lined Front Street for much of the nineteenth and first half of the twentieth centuries.



Case Studies

Highways of Impact

Like Philadelphia, Minneapolis, Minnesota, saw the 1956 Federal Highway Act uproot existing neighborhoods in exchange for new highways that sought to utilize mobilization over the concerns and needs of local residents. While the Penn’s Landing portion of Interstate-95 remains a distinct example of where neighborhoods, particularly those belonging to residents of color, were not affected, there are parallels to how Minneapolis has decided to inform future generations of its impact, and how Philadelphia might take a page from them.

Ernest Lloyd, a former employee of the Minnesota DOT, wrote a dissertation on the impact of the stretch known as I-35W that cut through South Minneapolis’ historic black neighborhood. Lloyd turned his investigation into a museum exhibition, the *Human Toll*, sponsored by the Heritage Studies and Public History (HSPH) of the University of Minnesota’s School of Architecture. While his focus concerned redlining and the impact of racial segregation through the highway’s construction, something that is not relevant to this thesis, it does provide overlap into themes that concern the design portion of this thesis. In particular, how museums should view these stories of urban planning and their impacts on the communities that museums serve. “It demonstrates the importance

how unresolved—indeed, unspoken—history lives in the heart and soul of families and transcends generations. This project is one step toward correcting past wrongs by acknowledging the past and building a better future,” said Lloyd in February 2022.¹ So how does this exactly relate to Penn’s Landing and Interstate-95?

Limited Solutions

One such example of a cap proving to be a success with a city and its residents is the Klyde Warren Park in Dallas, Texas. Similar to parameters that mirror Philadelphia, suggestions for placing a deck over Route 366, known as the Woodall Rodgers Freeway that runs through the heart of Dallas, began in the 1960s when the road was being laid out. Due to lack of funding, the idea of capping a stretch of the recessed highway did not return until 2002. Through a combination of matched funds and private donations, the \$110 million dollar project was completed in October 2012. The 5-acre park is one block away from Dallas’s Art District. As of 2022, the park is home to the world’s tallest interactive fountain, and has continued to generate positive feedback from both residents and the local business community.²

¹ McCarthy, 2022.

² Klyde, 2022.

Top: Klyde Warren Park over the Woodall Rodgers Freeway in downtown Dallas, Texas. Below: Waterfront Park in Louisville, Kentucky.



Revitalizing waterfront space has been a project goal among many cities. Louisville, Kentucky, has expanded a once industrial site along the Ohio River into an 85-acre green space that boasts of having multiple parks and areas for recreational activities. Known as Waterfront Park, its website proudly begins with the tagline, “we are not only a destination, but the front door to the city.” While the rehabilitation began in 1986, the Louisville Waterfront Development Corporation has overseen three phases at the cost of \$90 million. Phase 4 of the full park is currently underway that will add additional trails, recreational activities and places for outdoor exhibitions.¹ Indeed, the headline for the park, which won the 2013 silver medal for the Rudy Bruner Award for urban renewal, simply reads, “a reclaimed waterfront park reconnecting the city to the river.”²

¹ Ourwaterfront.org

² Rudy, 2022.

Interviews

Speaking with Dan Knight, an urban engineer and hobbyist archaeologist, the excavation in the 1970s was not well thought out in terms of historical preservation. “Excavators essentially came in and moved all that earth and its contents, and dumped it south of the city in a handful of places near the airport. There was no archaeological survey, no real concern for what might have been disturbed. Just a need to get the debris out of there.” For amateur sleuths like Mr. Knight, the dump sites provided opportunity for research and recovery of artifacts. Coins, pottery, cannonballs, and other items long since buried in decades of development were sifted out of the sites. Untold amounts of artifacts were taken and lost forever while other items became the basis for private collections such as Mr. Knight’s. “I’m lucky to have gotten in there and found what I did. The items are important in explaining the waterfront’s history.” Similarly, the Philadelphia Independence Seaport Museum houses a large portion of a mirroring collection to Mr. Knight. “The history deserves to be known,” said Mr. Knight.¹

Author and historian Harry Kyriakodis agrees. Mr. Kyriakodis lived in the Pier 3 condos along the river and became interested in the waterfront’s history the more he learned about its development. Ultimately, Mr. Kyriakodis takes a different view of the highway’s development. “The waterfront was dying when the highway was first proposed. We have to remember Philadelphia always had a westerly push away from the river.” This was by design from William Penn’s earliest planning. But surely then the highway brought with it the hope of prosperity for the city? “Without the highway, the city would be cut off from other major cities in the Northeast. There was just no way the city government was going to allow that to happen.” Already connected via railroads and smaller, state roads, Philadelphia’s industrial and residential regions had to remain relevant in the face of development. And more so, the federal government was busy throwing money at highway construction. There was every incentive to say yes, and much to be blamed if they’d declined. As Mr. Kyriakodis concludes, “The automobile took precedence. The city sacrificed the

¹Knight, 2022.

waterfront’s history to accommodate the need of connecting the suburbs to the city. Rerouting the road to bypass the city would be expensive and not practical.”¹

Other writers and commentators have concentrated the bulk of their analysis and criticism on the city’s seemingly endless inability to solve the problems created by urban projects. One such individual is Inga Saffron, who serves as the architectural critic at the *Philadelphia Inquirer*. Ms. Saffron has taken exception with the highway’s impact on Penn’s Landing and the city in general. “It’s terrible what cities have done to themselves during urban renewal projects.” She draws parallels to her time as a foreign correspondent in the 1990s, witnessing how people can be displaced in cities by design and circumstances out of their control. “I became interested in writing about more than just the aesthetics of buildings. Parking lots, garages, and highways were obvious because cities have come to justify placing them in spots that don’t make sense.”²

With the Penn’s Landing site itself, it has been a decades long battle to see the area properly developed that services visitors. “What set me off was when Ed Rendell was mayor. One failed event after another to develop Penn’s Landing. At one point, a shopping mall developer expressed interest in building a parking garage on the waterfront. We’re so lucky. We dodged a bullet that didn’t get built.”³

To the city’s credit, steps have been taken in recent years to address Penn’s Landing and the highway that cuts it off from Old City. “Multiple sessions that advocated changing the city occurred. These were young people with new ideas. We’ve made tremendous progress.” She specifically points to the Delaware River Water Corporation as an example of the waterfront finally getting the attention and support it needs. “They’ve done a lot of great things to ensure people see the waterfront as a place of many attractions and

¹ Kyriakodis, 2022.

² Saffron, 2022.

³ Ibid, 1.

Other Research

The Psychological Benefits of Greenspaces and Waterfronts

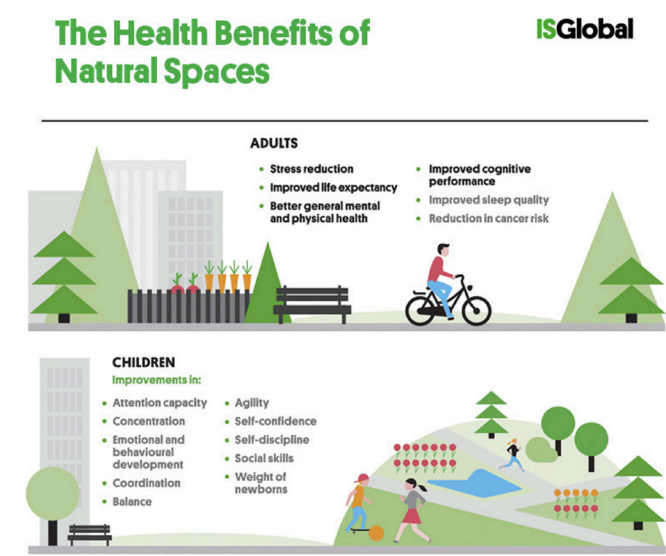
As researchers continue to explore the positives of greenspace accessibility, the evidence of the beneficiaries to both adults and children is taking shape. Two recent studies are included here that dissect the importance of greenspaces on mental health, particularly among children and adolescents. Though Penn’s Landing offers some remedies to an otherwise congested urban environment, perhaps the proposed cap expansion will signify a change in perception of what Philadelphia’s waterfront could entail for residents and visitors alike.

“The World Health Organization estimated that between 10% and 20% of the world’s population of children and adolescents have mental disorders and problems, with half of all mental illnesses beginning by the age of 14,” states a recent review of 50 weighted studies regarding greenspace accessibility affecting mental health.¹ Of these, researchers writing for the International Journal of Environmental Research and Public Health have concluded that, “Exposure to green space is a promising intervention for promoting adolescents’ mental well-being. A growing body of research has found that exposure to green space has a variety of positive impacts on young people’s health. These benefits include enhanced mental health and resilience, and increased physical

¹ Zhang, 2020.

But Ms. Saffron remains skeptical of the need for the highway in Philadelphia at all. “The real 95 is actually the [New] Jersey turnpike. The turnpike’s purpose was to funnel the volume of travel between New York and Maryland. What happened was Philly freaked out and demanded they be included.” For critics of the highway’s continued impact on the city, it appears what few options have been presented represent the best of the worst scenarios. None of the proposals do much to curb the footprint left along the waterfront, nor do they seem to address repeated concerns about longevity. Roads require constant maintenance, leading to increased disruptions impacting areas of construction in different ways. Like a handful of others, Ms. Saffron remains committed to exploring removing I-95 from Philadelphia, at least a large portion of it. “I have my concerns about the cap. I was disappointed they didn’t do a conventional capping or find a plan to remove a portion of 95. The volumes of traffic fall off dramatically south of the Ben Franklin Bridge. The combination of both 95 and Columbus Boulevard... can’t we lose one of the roads?”¹

¹ Ibid, 2.



activity and reduced risk of obesity. It is evident that time spent in, or exposure to, green space can improve positive mood and emotions, provide a retreat from daily hassles, and reduce the risk of psychological and physiological stress in adolescents. There is also evidence of lasting mental health benefits of green space exposure in childhood.”¹

¹ Ibid, 1.

Accessibility in of itself is an important factor to greenspace and to the waterfront, hampered by not just Interstate-95, but also Columbus Boulevard. The double-road gulf between Old City, Society Hill and Penn’s Landing creates a paradox for travel, accessing amenities and feeling welcome to what attractions are offered. Stripped from the abstracts, in many cases, residents just do not perceive the waterfront as a place for them. “Issues of access and equity are also of concern. Socioeconomic status is one of the main confounding sources between adolescents’ mental well-being and green space. Young people from disadvantaged families tend to have poorer well-being and reside in neighborhoods with a lower quantity or quality of green space.”¹ So the question then is how do cities ensure communities have access and are encouraged to access these spaces?

The influx of people living in cities and urban environments continues to climb, a revelation that is predominantly a modern phenomena. While ancient cities, such as Babylon and Rome certainly held populations in the hundreds of thousands, the majority of people in those civilizations lived spread out beyond the city hubs. This remained relatively true into the 20th century until accessibility to cities by way of the interstate brought accessibility to jobs and markets for a widening of people. At the expense of close living, urban dwellers adapted to concrete and glass being the main

¹ Ibid, 2.



modes of environmental obstacles. Greenspaces existed, but their importance often came at the price of meeting further developmental efforts. It is now, along with the broader movement to reevaluate how people interact with cities, that the importance of greenspaces have taken a front seat in rehabilitation initiatives across American cities. Simply put, cities—and their inhabitants—need greenspaces.

One such reason why individuals are hardwired to respond positively to greenspace may be evolutionary. Biologist Edward O. Wilson proposed in 1984 his ‘biophilia’ hypothesis of how human beings respond instinctively to exposure to nature due to our primal, evolutionary past. As a recent article in *New Scientist* surmises, “[Wilson’s] idea was that the environment in which humans evolved has shaped our brain, priming it to respond positively to cues that would have enhanced survival for our ancestors, such as trees, savannah, lakes and waterways.



A closeup of Philadelphia by John Montresor, 1777.

This, Wilson argued, is why being in nature makes us feel good.”¹ And look no further than the sudden need for greenspace exposure than during the Covid-19 pandemic. Speaking from experience: walking and running a few miles in the local park every other day was a much-needed physical and mental boost from the stresses of the lockdown and uncertainty of the pandemic.

¹ Douglass, 2021.

Activating Space

When the phrase “activating space” is stated, it can lead to head scratching among those who aren’t versed in the concept. However, it’s far more practical than some may presume. Activating space encourages designers to utilize a given area and make it a source of engagement with outsiders. Just as architects plan for how humans move through spaces, designers plan for how visitors interact with the space around them.

Take the concept to a park setting. Most parks have a variety of trees, perhaps planted in patterns that create a sweeping panoramic view. They also might have pathways that weave. And a garden of colorful shrubs and exotic plants that trigger the imagination for a brief moment. A gazebo constructed of restored wood from an old barn. And a small patio-looking spot that offers a moment or two of tranquil repose, with covered vines wrapped around a rock wall. All of which add one by one to the whole of activating the space. Strip them away and you have a blank canvas, or a plain, green slate of empty nothingness. An open space, yes, but a space without an identity. Now apply this to Penn’s Landing: a location continually redefining itself.

In conversation with Inga Saffron, she noted, “One of the problems with Philly history museums is that their exhibits don’t change. At least, not very often. Is this an opportunity to do something more like



UArts graduate students
discussing
designs with creators
during Parking
Day 2022.

an art museum?”¹ Funding differences among specific types of museums plays a role in how often exhibitions are developed and change. Nevertheless, combining history and art in the context of this thesis can draw on examples that can be found. The Philadelphia Contemporary currently has exhibitions throughout the city, some along the waterfront. Through a program titled, *Water Marks*, a rotating collection of artistry will be presented to the public that engages in topics that involve climate change and industrial shortsightedness. A current piece by artist Tracey Emim looks at personal grief.² The works and voices of artists, curators and exhibit designs are no doubt different. Art pieces can complement a story, adding an original interpretive layer and providing a different lens to view the subject. Such endeavors seek to establish a human perspective to events that affect everyone. Other examples of activating space widen our perceptions of what engagement can be.

¹ Saffron, 2022.
² Bickford, 2022.

Conflict Kitchen was created in Pittsburgh, Pennsylvania, as a restaurant that served cuisines from ethnic diverse backgrounds whose countries had been embroiled in war with the United States. Every few months, the restaurant’s owners would rotate a new ethnicity into their menus and offer authentic dishes while also offering a space for people of these cultures to congregate and interact.¹ Though it was a takeout spot, it was purposely blending the genres of what public art could be. And its purpose remained the same: how to activate space, i.e., an outdoor dining experience that wasn’t just another typical restaurant with outdoor seating.

¹ Conflictkitchen.org

Mission Statement/Methodology

The purpose of this thesis is to draw attention to an ongoing story affecting Philadelphia by proposing an outdoor interactive design that will summarize and introduce the content to residents along with the planned waterfront revitalization project. A goal for this thesis will inspire discovery among residents and visitors to Philadelphia's historic waterfront, specifically targeting children and students to consider how they interact with the river, the waterfront, the highway and asking what people should consider when accessing the past.

As a historian, the intention is to tell a compelling story that is not known to the bulk of the general public; to summarize and condense a complex, difficult and arbitrary story by making it accessible to readers; to develop a design that relates to the reality of the vast changes the waterfront has undergone through the centuries; and to raise questions about urban development and what the highway has done to accessing the waterfront.

“Tackling I-95 is a critical challenge, and we shouldn’t be afraid of addressing it,” said PennPraxis director Harris Steinberg. “It’s a question of where we put our efforts. I don’t think we’re going to change the course of I-95 in our lifetime. That said, there are places we can have an impact.”¹ Using this sentiment to broaden the conversation to encompass the entire changing landscape of Penn’s

Landing, the mood is right for a discussion about urban development, how to view the ongoing legacy of the difficulties accessing Philadelphia’s history, and how Penn’s Landing might serve as a benchmark for telling this story.

Currently, the waterfront is home to several outdoor spaces for temporary exhibits and sculptures by local artists that discuss contemporary issues. Often, these physical spaces are activated by the prompt for dialogue about the presented topic. No, that’s not suggesting there’s a microphone waiting for every visitor to give impromptu opinions. It is, however, a call to action; by the very nature of having a space for discovery, through presenting stories either through art, sculpture or display, visitors are encouraged to engage with the contents. At the very least, a visitor might stumble upon it, ponder its contents, and take with them a question or two about what just happened. Or the visitor sought out the space and immersed themselves in it. The main point remains the same: providing an opportunity for engagement through an interactive design.

This assertion comes at a time of continuing change within the museum field. In a recent *New York Times* story, Andrew J. Saluti, an assistant professor and program coordinator of museum studies at Syracuse University said, “The outdoors is giving museums a new way to tell their stories. It’s become a medium to engage the community as well as global audiences.” In the context of how the Covid-19 pandemic has reshaped perceptions of how museums should operate in order to attract audiences, more institutions are looking beyond their walls to use outdoor spaces to tie in their missions and interpretive programming. “They’re [outdoor spaces] a permanent part of the tool kit that museums will use to stay relevant.”.

If museums themselves cannot relocate the entirety of themselves within these outdoor spaces, what might taking critical elements of their engagement methodology to a location look like? The story provided in this thesis is ripe for such a design.

¹ Blanchard, 2007.

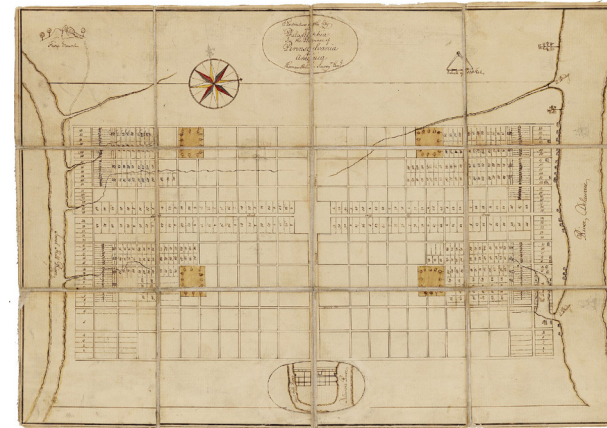
¹ Vora, 2022.

The Interstate Plan for Philadelphia

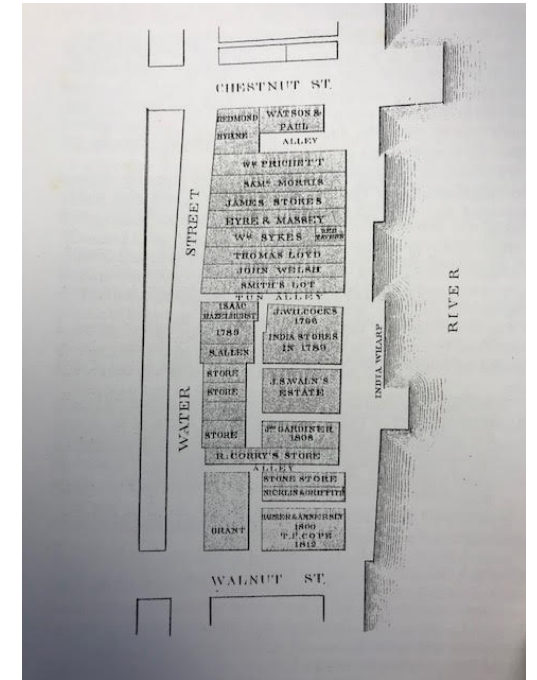
The 20th Century Automobile

It would be an understatement to say the automobile revolutionized transportation in the twentieth century. Whereas human civilization had relied on animal-powered mobility for thousands of years, the invention of automobiles at the start of the last century unleashed a new potential for progress. Trolley cars had begun the transformation to modern, above-ground urban mobility, a fact not lost on early automobile manufacturers who soon purchased them to ensure their decline. Tracks were removed from streets, making way for the influx of automobiles. With this progression brought questions of how to modernize cityscapes designed for pre-modern citizens. Philadelphia brought this conundrum to bare as cars and trucks began replacing horse-drawn carriages and carts in the 1920s. With the mass production of automobiles, they were not just luxury items for the elite and wealthy; American manufacturers like Henry Ford deliberately priced his vehicles for the common, lower-income American to afford. And with it brought an abundance of cars—and traffic—to cities that weren't designed for such congestion.

William Penn envisioned Philadelphia to be a city of wide streets and numerous parks and open spaces. While these two ideas did not quite turn out as Penn had planned – the landowners subdivided the lots to make monies, other citizens followed suit and abandoned the original vision – his layout of the city in a grid pattern did come to fruition. Most European cities of the time had long since developed outwardly from either Roman or Medieval planning; narrow, meandering streets that had no real pattern of symmetry. Boston and New York City would copy these patterns in their early developments. Inspired by the Enlightenment's insistence on geometric symmetry in architectural planning, Philadelphia would be different. It would be the first New World city laid out in a grid pattern, creating vast open spaces and lots that Penn hoped would become the country estates, farms, parks and artisan centers that he'd envisioned.

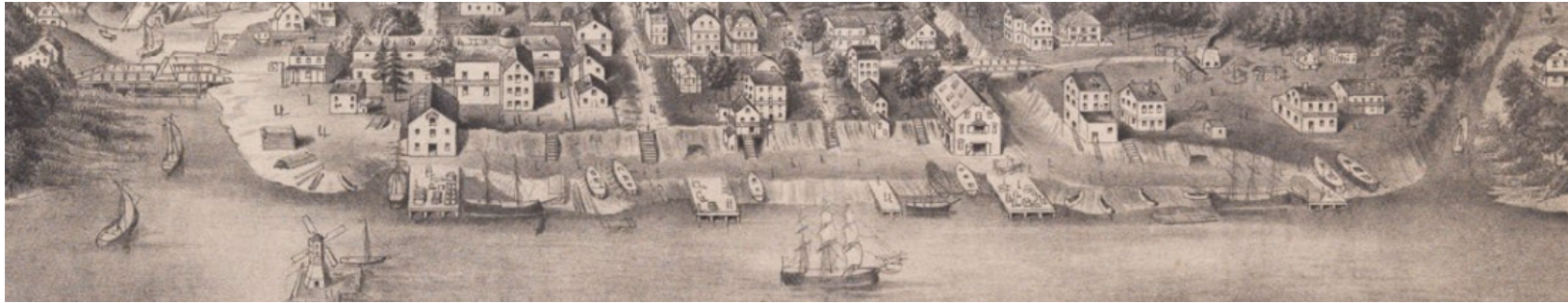


The Plan for Philadelphia, 1682.



Indeed, Philadelphia's unique layout was one of the reasons the city drew so much attention throughout the eighteenth century. Dubbed the "Athens of the West," by the 1790s, the city held an outsized influence on all political, scientific and mercantile inquiries for a time. With its grid layout known, and in need to be filled with people, the inevitable population boom occurred through the late eighteenth century and throughout the nineteenth century. With development came congestion, but seemingly manageable for the age. The industrial revolution fueled expansion and development, and the city adapted.

By the early twentieth century, nearly all of the original grid had been developed. Aside from Market and Broad streets, most city streets were wide by eighteenth century standards, meaning they could accommodate a sizable crowd of pedestrians, horse-drawn carriages, and trolleys. Dock Street's market is one such example.



Lost Waterfront

When William Penn first landed on the peninsula that would become the City of Philadelphia in 1682, it had already been the home of Indigenous Lenni-Lenape Native Americans, as well as Dutch settlers who first visited the Delaware River in 1623, and two generations of Swedish colonists that followed. To the surprise of some, the first English settlers established themselves in not brick structures but in dugout caves carved into the waterfront under Front Street. While some nineteenth century depictions show settlers squatting inside dirt caves, these early shelters were actually reinforced by cut logs and were essentially cabins built into the riverbank. Most can be forgiven for missing the reality that Philadelphia's waterfront in Old City has a steep ridge that made early development rise above the river. Front Street was built along this ridge. To access the river, early residents built a series of steps that exited the water. These became known as Penn's Steps; many were demolished over the centuries as the waterfront expanded eastward while the last remaining steps were obliterated in the twentieth century with the construction of the Ben Franklin Bridge.

By 1732, Philadelphia had expanded westward from the Delaware River to only about Fourth Street and remained concentrated around Dock Creek, the site of where Penn first landed. As the only major port along the river and servicing the economies of eastern Pennsylvania, West (New) Jersey, Delaware and northern Maryland, it developed a reputation as an important trade center. Simultaneously, its development of printed newspapers, scientific inquiry, architectural additions, and Quaker-influences birthed a unique

From Top Clockwise: An 1876 depiction of what Philadelphia's waterfront looked like in 1702; Market Street Ferry, circa 1890; the last of Penn's Steps in the city.



identity that made Philadelphia distinctly progressive among the other three port cities of Boston, New York and Charleston.

Owing much to the harnessing of trade, Philadelphia's merchant class became among the wealthiest American colonists, in many cases far more than the upper Southern plantation gentry reliant on slave labor. While both relied on credit, merchants exchanged hard coins far more often than agricultural industries, thereby rewarding them a reputation for reliable, stable income. With the merchant industry established, shipbuilding naturally developed at the same time. The vast wildernesses of southeastern Pennsylvania and New Jersey provided the timber throughout the eighteenth century. It's no surprise that by 1798, the first naval shipyard could be found along the Philadelphia waterfront at Southwark.

Nevertheless, Philadelphia had always intended to develop with an eye westward. Symbolic of how Americans came to view their identity throughout much of the eighteenth and nineteenth centuries, it could be argued that Penn had himself envisioned a localized manifest destiny that filled the entire Schuylkill peninsula with a thriving city.

Expanding City

When Philadelphia served as the temporary national capital from 1791-1800, the city remained largely confined east of Eighth Street. Maps from the decade by John Hills and A.P. Folie show sparse development west of Old City; Northern Liberties and Southwark, however, had taken root and were expanding. The Schuylkill, itself a source of water power, saw commercial industry begin to emerge around the lonely estates of wealthy residents. Benjamin Henry Latrobe, architect of the US Capitol, designed the Philadelphia waterworks and first pump house, among other buildings in the city. Fast forward twenty years, the city still remained concentrated along its eastern waterfront, but a considerable shift was underway as empty lots along the freshly completed road extensions of the city grid began to fill up. Between the Arch and Market street ferries, the stretch of waterfront south of Race Street saw a continuous robust enterprise in passenger transportation. The waterfront's reach continued to expand over the decades. In 1839, Delaware Avenue expanded from 50-feet to 150-feet in width after the will of Stephen Girard left \$500,000 to repair and improve the road.¹

Industry, particularly the coal burning kind, dominated the waterfront by 1850. Likewise, chimneys throughout the city added to the gray air. Artisan and manufacturing sectors took hold in the northern parts of the city, dubbing Philadelphia “America’s workshop” by 1890. Along the Penn’s Landing waterfront, commercial trade had taken a backseat to the ferry service industry that shuttled passengers either to New Jersey or Smith’s Island.² At its peak, the Market Street ferry shuttled thousands of passengers daily across the river. For many Philadelphians, this was their first step to reaching the Jersey Shore. For New Jerseyans, the ferry was the means of visiting the famed shopping district in Center City.

¹ Foster Smith, p. 63.

² Smith’s Island was originally part of the shoal known as Windmill Island that lay just off Dock Street. It was subdivided in the nineteenth century, serving as a leisure destination for residents. It was dredged and removed in the 1890s to deepen the channel in the river.



A.P. Folie’s 1794 map of Philadelphia notes the extent of development in the city during the decade it was the nation’s capital. Of note is the continued emphasis on building out the original stretches of Penn’s plan. This would epitomize Philadelphia’s westward push throughout the nineteenth century.

Twentieth Century Deterioration

By 1935, Philadelphia’s waterfront was at a crossroads. Much of the port activity had long since transferred to the northeastern sectors of the city where rail lines carried freight and supplies inland. Pollutants from these factories had sullied the river, giving it an unpleasant stench reminiscent of earlier generations complaining of the foulness of Dock Creek. Sewage dumped into the river had the nasty reputation of peeling the paint off the sides of water-bound vessels. Leisure activities no longer became associated with the waterfront. Adding to these factors was the Ben Franklin Bridge that opened in 1926. Projections for commuter impact all but ensured a transition away from ferry service in the river. They also influenced some city planners to consider what the automobile would do to residential travel habits. Through the mid-twentieth century, the old wharfs and warehouses that lined Front Street and Delaware Avenue in Old City continued to be used or repurposed in commercial ways. The city and much of its residents, it seemed, had long been looking westward. The waterfront, the site of the city’s founding and what had shaped much of its early identity, was now at a crossroads.

Philadelphia's Transportation Evolution



Among the many things that defined Philadelphia's uniqueness was its grid system established from the very first surveys under William Penn. Purposely trying to distance themselves from the narrow and meandering urban streets of Europe, Philadelphia was laid out to be a town of open spaces, parks and estates. Even before Penn's death in 1718, Philadelphia was already developing into a much more concentrated urban center devoid of open spaces within the city limits. This would continue to bear out as development spanned the entire peninsula, filling in the entire grid system by the twentieth century. However, despite many of these streets remaining committed to the original city plan, railroad tracks that were laid out in the nineteenth century did not. The shipment of freight and the shuttling of passengers laid a new imprint of travel over the city's grid system. Likewise, the development of the subway lines in the first half of the twentieth century expedited passenger service further. As automobiles gradually replaced horse-drawn carriages, wagons, and trolleys that had become a nuisance within the limited street space, due in large part to marketing that sold cars as affordable to a large percentage of American consumers, the need for updating old transportation routes and roads became a top priority for city and state governments.

Left: Delaware Avenue, circa 1895;
Right: I-95 would follow the center pathway, shown here in 1937.



The Delaware Skyway of 1937

The first proposal for a highway along the river came in the 1930s as a way to connect industries that had long since abandoned the historic waterfront located south of the Ben Franklin Bridge for Port Richmond and points in the northern parts of the city. Though freight remained the number one source of transporting goods from the port inward to the country, there was a growing realization that intermodal transportation was one of Philadelphia's economic attractions. In short, trucks could navigate and go where trains could not. In 1937, the Philadelphia City Planning Commission proposed an elevated expressway that would run above Delaware Avenue through Center City, but the plan was scrapped when it was deemed too intrusive on the port of Philadelphia, confirming the port was a vital artery to the city, and a new expressway that jeopardized this active means of trade and transportation would not be implemented.¹

¹ Anderson, Delaware Expressway.

1950s Federal Highway Development

Following World War II, the United States underwent several transformations that brought economic expansion and opportunities to more citizens than at any time in the country's history. Winning the war brought with it a renewed optimism that sought to ensure the depression years of the 1930s would not return. Among the initiatives was building new suburban communities outside of major metropolitan areas. As they sprung up, the need for new road systems to connect these neighborhoods to existing infrastructure became apparent.

President Dwight D. Eisenhower served as US Allied Forces Supreme Commander for the last two years of the European theater in the war. It was during his time in Germany that he observed the autobahn, a state-of-the-art highway system unmatched in the world at the time. A decade later, Eisenhower, now president, wanted to recreate the autobahn in America. The 1956 Federal-Aid Highway Act sought to capitalize on this goal by invoking two priorities that had little to do with suburban expansion: military mobility in the case of a foreign invasion of the US homeland, and accelerating commerce within the states. The federal government would provide 90% of funding for the infrastructure projects, ensuring that the vast majority of projects would be completed as desired.

Interstate-95 would ultimately be funded in large part through this initiative. Spanning 1,908 miles from the Maine-Canadian border southward to Miami, Florida, it is the main artery of travel along the east coast of the United States. Construction efforts in some areas benefited from repurposing existing roads while in other parts of the country the highway would cut through neighborhoods, dividing communities. Philadelphia would become one such case, though unique in this displacement.



President Dwight D. Eisenhower signing the Federal Highway Act in 1956; a cartoon depicting the various planned freeway projects in Center City Philadelphia.

Proposals vs. Needs of the City

It would be a mistake to presume that the Delaware Expressway was the only plan for Philadelphia. In fact, several variations of an intended proposal to encircle Center City with highways were on the table in the immediate postwar years. Aside from what became I-76 along the Schuylkill River and the Vine Street Expressway, there was also the proposal to create the Crosstown Expressway along South Street. Coupled with these and the pending Delaware Expressway, it would have effectively boxed Center City in entirely.¹ By 1964, the city and PennDOT had begun the early steps of acquiring properties along South Street in the hopes of linking it to the eventual Delaware Expressway near the airport. Some 2,000 homes were on the chopping block and as the neighborhood began to leave, tensions among residents and activists, and the city intensified. In 1969, Philadelphia mayor James Tate sided with residents and informed Edmund Bacon to “let the people have a victory.” The Crosstown Expressway was killed in 1977 as its price tag ballooned to \$750 million.² Though distinctly different from the Penn’s Landing waterfront community, the Society Hill urban renewal and what the Delaware Expressway would do to it, the imposition of new super highways running through the city found opposition among many residents. In some cases, these efforts proved successful. In others, the city planning won out. Such is the case with the Delaware Expressway, the Philadelphia portion of Interstate-95.



Old Dock St, 1925 (Image no. 4886) | Aero Service Corp. | Aerial Viewpoint, Spring, TX

The first postwar proposal for a new highway came in 1945 when the Pennsylvania Highway Department revisited the 1937 plan. Two years later, the Philadelphia City Planning Commission partnered with the Federal Bureau of Public Roads to approve a plan for the Delaware Expressway. In part, the justification was to connect the industrial corridor running along the river, not to connect emerging suburban communities. “The great industrial area that runs from the Trenton area south to the Wilmington area is clustered largely along the banks of the Delaware River. The critical need of the area is a north-south express highway, running close to the Delaware River, which will link together this great industrial complex....It connects with the U.S. Steel plant at Morrisville; with the Levittown, Fairless Hills and other rapidly expanding residential areas of lower Bucks County; and with the Pennsylvania Turnpike, which in turn will link through a new bridge with the New Jersey Turnpike, thus providing rapid access from Philadelphia into northern New Jersey and New York.”¹

¹ Anderson, Delaware Expressway.



Far Left:
Penn's Landing
neighborhood in 1925.
Left: Penn's Landing
after most of the
waterfront had been
cleared, circa 1968.

Conversations about the course and purpose of the expressway continued into the 1950s. At one point, the Pennsylvania Turnpike Commission incorporated Philadelphia into its state-wide plan for dozens of toll highways to intersect throughout the state. A separate plan put forth in 1955 by the Bureau of Municipal Research projected the flow of traffic in the coming decades, concluding the highway would serve as an effective “mass regulation of motor vehicle traffic” while making for a “great industrial and commercial highway.”¹ Indeed, here we see the shift away from justifying the expressway’s purpose to being strictly for industrial purposes. A separate report shot down the practicality of making the highway a toll road when the Federal-Aid Highway Act was passed in 1956, and finally the Federal Bureau of Public Roads ruled to include 51 miles of tract along the Delaware River to be included in the future interstate highway plan that would become Interstate-95.² Construction for the interstate system began in 1959.

¹ Ibid, 1.

² Ibid, 2.

¹ Keels, p. 282.

² Ibid, 1.

Edmund Bacon and the 1960s Fight for Center City

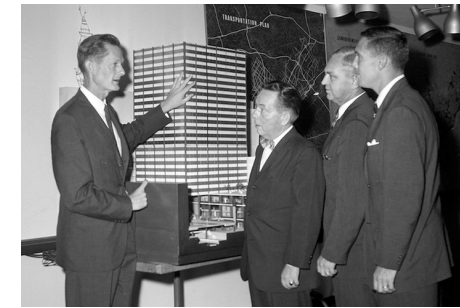
For the scope of this thesis, it must be remembered that the focus is strictly on the Penn's Landing section located in Old City/Society Hill. In neighborhoods in northern parts of the city and in the old Southwark neighborhoods, development affected communities differently and therefore should be themselves the focus of individual inquiries separate from here. For the Center City section of the expressway, concerns about its effects on Old City were brought up almost immediately.

Even though the 1955 Madigan-Hyland report had nixed the idea of a toll expressway, its revisions nevertheless put forth a proposed eight-lane elevated road that would cut through City Center along the waterfront. In 1961, the Philadelphia City Council raised the concern that, "...at issue is whether a highway in the heart of a city shall be located so as to fit the city's development plans or not...." Would the expressway jeopardize other city revitalization plans such as Independence Hall Historical Park? Or would the new commitment to revitalizing Center City's business district trump all other needs and concerns?¹

Edmund Bacon, Philadelphia's city planner, became the champion of the expressway's development. In 1963, Bacon led efforts to support its construction, including the now infamous scale model of the road

cutting through the city that was displayed in the window at the Wanamaker's department store. It was the first time residents of the city could see for themselves what Philadelphia would look like after the highway's completion.

Many had concerning questions, many more were angry. Among them was architect Frank Weise who confronted Bacon, warning him the highway would cut off Center City from the waterfront. Bacon dismissed his concerns, reportedly saying Weise was not living in "the age of the automobile." Bacon had made similar comments in defending the need for the expressway, saying, "'We think it better not to fight with the automobile...but rather to treat it as an honored guest and cater to its needs.'" ¹ To counter the seemingly immovable Bacon, Weise, along with a group of city architects, drew up plans that altered the expressway's trajectory by sinking it below the street level off Front Street. This would utilize one of Philadelphia's natural wonders that often goes overlooked: its waterfront ledge or ridge. Weise proposed the expressway should avoid disrupting Center City as little as possible; if they could sink the road, preventing it from obstructing the view and access to the waterfront, it would be a solution that met many of the local residents' concerns without scuttling the project. These plans were submitted to the state. Within two years, the state returned to the city with a proposal for creating a 'depressed highway,' essentially



Edmund Bacon, pictured top left, is widely regarded as one of Philadelphia's most visionary architects. Right: Frank Weise.



taking Weise's plan to heart by sinking it beneath the street level. To prevent what was described as an "ugly, noisy open ditch," the city then sought additional federal funding to cap the expressway from Arch Street south to Pine Street.

The new plan moved forward until 1967, when vice president Hubert Humphrey, then overseeing a committee to assess the expressway's development, rejected the proposed 15-acre concrete cap or deck over ventilation concerns. The federal government then recommended two smaller, separate caps with additional funding of \$9 million to complete them. The caps would cost a total of \$60 million on top of the earlier estimated \$200 million the Philadelphia section of the expressway would need.¹

¹ Whitlow, 2003.

¹ Gottlieb, 2015.

¹ Anderson, Delaware Expressway.

1970s Development/Backlash

Construction of the Penn's Landing/Old City portion of the expressway began in 1972. Dubbed the *bathub* by engineers and work crews, many saw the 'improved' expressway as a compromise. It would follow the depressed plan with the addition of the two individual caps between Pine and Locust streets, and Sansom and Chestnut streets with support pillars to be constructed underneath to anticipate additional cap development at a later time. As author Harry Kyriakodis notes in his book, what existed before the construction efforts was obliterated. Old warehouses, brick dwellings, and wharves were pulverized. Millions of tons of earth and old debris were removed from the waterfront to make way for the expressway. Unlike current zoning and development procedures, the city did not conduct a thorough archaeological survey and review prior to demolition, nor did the city expend the effort to hire archaeologists and historians to assist in the removal of materials. Instead, the city removed dirt by the truck-load and dumped the debris in large waste sites in the southern part of the city limits near the mouth of the Schuylkill River.

Further controversy erupted over the expressway's disruption to existing city infrastructure, particularly its SEPTA subway system. In March 1979, residents in the Society Hill neighborhood began voicing opposition to the highway's expected completion and opening in the coming months. Residents pressured PennDOT (Pennsylvania Department of Transportation) into erecting sound barriers and other measures that would eliminate burdens the highway would place on the neighborhood. This delay was met with opposition by residents in Northeast Philadelphia who staged protests in Society Hill. Ultimately, a compromise was reached and the expressway at Penn's Landing opened on Labor Day 1979.¹

¹ Ibid, 1.



Clockwise from Top Left: Findings from the demolished waterfront; Dan Knight; headlines like this were common during the 1970s; a photograph of I-95 at Chestnut Street in the 1970s during construction.



Present: Constant Maintenance and Repair

Even with the Penn's Landing section completed and opened in late 1979, the expressway continued to cause issues for the city and its residents. Access points to and from the highway have been met with skepticism over fears of traffic congestion and disruption to local neighborhoods. Similarly, the highway requires continual maintenance that costs the city annually, along with the continuous, often traffic-causing presence of construction crews and vehicles. And lastly, perhaps the most inevitable realization of all has come true. It's not just that I-95 separates Center City from the waterfront. It's the combination of *both* the expressway and Columbus Boulevard separating the city from the river. The continued gulf, wall, barrier, whatever one calls it continues to plague Center City. As local reporter Matt Blanchard stated, "I-95 acts as a physical and psychological barrier. In Center City, a sunken 10-lane segment forms a 380-foot canyon separating Penn's Landing from Old City."¹

¹ Blanchard, 2007.

Renewal and Rebirth

Almost immediately after the highway’s completion, talks began about how to reconnect the waterfront to the city. The conversation escalated when environmental groups pointing out the river’s pollution rates were finally dropping from last mid-century’s high points, along with the need for greenspace and natural settings among the concrete and noise that now defined the city’s waterfront. The first steps towards this rehabilitation was the repurposing of old docks and piers that had not been destroyed during the highway’s construction. Some of these piers were repurposed as condominium sites, such as Piers 3 and 5. Others were retrofitted to accommodate small businesses. The emergence of Penn’s Landing as a recreational destination with its tourist attractions and restaurants continued to amplify the waterfront’s potential. Both residents and visitors were taking notice, yet the highway would remain an immovable barrier preventing Old City from direct access to the river.

Discussion for a cap to cover the highway sprung up in the early twenty-first century. The purpose of the cap would be to take advantage of the highway’s deliberate design of having been dug out of existing earth in order to place it at a low level. While the original intent to prevent obstruction of the river from the view of Old City residents proved futile, it still created the possibility of rendering

a solution, however imperfect. Pedestrian walking bridges were completed over Chestnut, Walnut, Dock and Spruce streets while the Market Street bridge also afforded pedestrians access to the waterfront. As such, overhang caps were constructed between Dock and Spruce streets, with this cap park extending southward to Delancy Street; another cap was completed from Chestnut Street south to Sansom Street. But to be clear, these caps largely do not cover the entirety of the highway’s width nor do they prevent pedestrians from having to cross Columbus Boulevard to reach the waterfront. Hence, as beneficial as these first edition caps have been, many have cited they feel incomplete and do not do much to entice visitors to feel safe, welcome and able to enjoy a “park atmosphere.” It’s hard to argue with these sentiments when breaks in the cap leave pedestrians above high-speed traffic and the noise and pollution that comes with it.

The renewed effort to focus on curbing the noise and design of the Penn’s Landing corridor began in 2002 when architectural critic Inga Saffron penned several editorials for the *Philadelphia Inquirer* highlighting the expressway’s turbulent pre-construction design concerns put forth by Frank Weise. Summing up her critiques of the highway’s existence and impact on the city, Saffron called it a

‘canyon.’¹ In 2007, the University of Pennsylvania’s School of Design, PennPraxis, submitted plans that encouraged a civic renewal to connect the city to the waterfront. Turnout to a public discussion exceeded expectations with over one thousand people showing up to review the plan. In 2011, the Delaware River Water Corporation unveiled a master plan that included finally adding the full cap over the expressway at Penn’s Landing while also proposing an additional park on the space. The following year, the DRWC stated, “It’s an ambitious plan. It’s not perfect, but this area has languished for far too long, and it needs a road map for moving forward.”²

Prior to the Covid-19 pandemic, city leadership was finally pulling resources to address the ongoing concerns of the highway’s interruption to the waterfront. In fact, initial planning for additional caps to the interstate corridor were in the works when funding was put on hold indefinitely in March 2020. Former Mayor Michael Nutter had pledged \$10 million from the city in 2016 while the following year, Mayor Jim Kenney upped the total to \$90 million. In addition, final costs by PennDOT indicated the project would run no more than \$225 million with the state putting forward \$100 million towards building costs.³ Now that the pandemic has begun winding down, some lessons of the past two and half years are being

¹ Owens, BillyPenn.

² Ibid, 1.

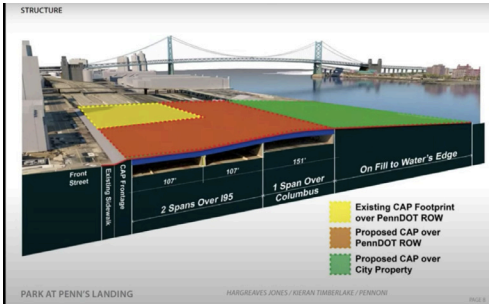
³ Ibid, 2.



used to reignite this project. Chief among them was the need for greenspace, or recreational space for people to feel safe and able to venture outdoors with their friends and family. Among urban planners, this has always been a tug-of-war with the need for commercial development. But the pandemic has taught many that lack of greenspace, particularly in urban areas, can have profound effects on the wellness of residents. Similarly, with the boom in repurposing old spaces and the call for addressing inequities in city development, it seems the time has finally come where city planners are serious about providing a way to connect Old City directly to its waterfront.

The \$225 million dollar project is being oversaw by the Delaware River Waterfront Corporation, a nonprofit explicitly focused on developing the central waterfront for recreational, cultural and commercial purposes.¹ Among the many additions the new cap will add, “the 11.5-acre park will span Chestnut to Walnut streets, extending over I-95 and Columbus Boulevard from Front Street to the riverfront....The new park will include an ice rink, public gardens, a play area, a pavilion and cafe, public gardens, memorials and an amphitheater at the bottom of a slope on the park’s north side, against the waterfront.”² Landscape architects HargreavesJones, known for creating Love Park in Center City, has partnered with the architectural firm KieranTimberlake to work

¹ <https://www.delawareriverwaterfront.com/about>
² Tanenbaum, PhillyVoice April 2022.



with the Delaware River Waterfront Corporation in seeing the proposal through.

Lizzie Woods, Vice President for Planning and Capital Programs with the DRWC recently summed up the project’s intent. “One of the major things that the master plan to differentiate it from attempts from decades in the past to handle the waterfront was to think about the waterfront holistically, all the way from the south at Oregon Avenue, all the way up to Allegheny Avenue, and make investments throughout that area. But it did come back to Penn’s Landing, which has been such a difficult space to deal with for many years. And made the recommendation that you really could make a huge difference in the accessibility of that central portion of the waterfront by capping over one block of the highway between Chestnut and Walnut Street, creating a seamless connection between the core of the city’s tourist, historic districts and the waterfront with the creation of a new public park. It would then leverage and frame the opportunity for new development on the waterfront that would bring new residences and commercial businesses that would help activate and frame that public investment.”¹

¹ Woods, Park Planning, May 2022.



Of course, not everyone is satisfied with what little has been done thus far. Harris Steinberg, formerly of PennPraxis and now with Drexel University, stated “They have done extraordinarily well and beyond anyone’s wildest dreams.” But to Steinberg, focusing only on the cap and not addressing the highway’s continued disruption to the city in general is the issue that needs to be addressed in the future. “The cap is lipstick on a pig....It’s a flyspeck on the back of the elephant. We’re not looking at the elephant and that’s 95. It doesn’t forestall managing 95, it covers a block and a half’ and doesn’t address Market Street.”¹

¹ Kostelni, Philadelphia Business Journal.

Conclusion

The museum profession is insistent that it be the harbingers of change through reflection and representative of their surrounding communities by highlighting diverse stories that have traditionally been untold. Painting with new colors. A unique topic can be just the vehicle for implementing this change. Again, ask anyone in the city and they will likely have an opinion on I-95. It's been the subject of conversation since before the very first layer of asphalt was put down.

The story of how a city created a barrier for its people is one that has been told by others, but one that needs to be told to everyone. Like other cities, Philadelphia is the bearer of the scars of twentieth century urban planning. Unlike other cities, the conversation of how one highway has affected its residents remains a subject for occasional fodder on local news broadcasts or chatter at the corner bar, but goes on like there is nothing that can be done. Just more traffic, construction and grind. Talk to people in this city and one will find out in due time how they feel about the interstate that severed a city from its storied waterfront. But is the highway itself the conversation people should be having?

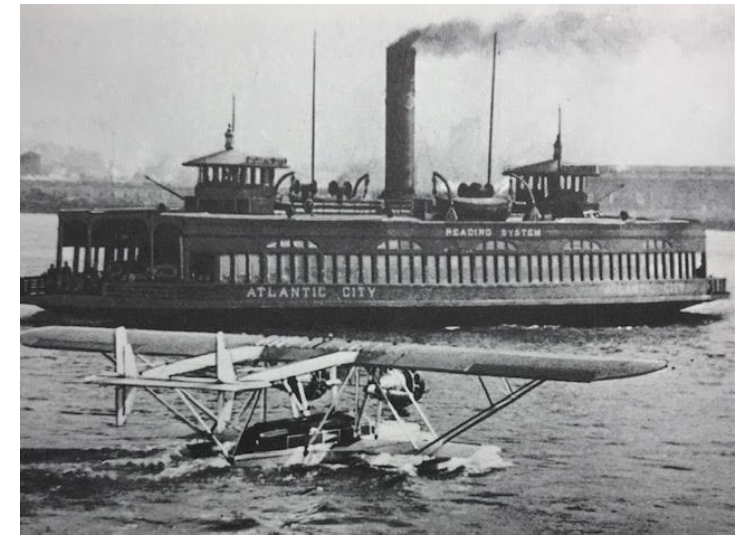
Philadelphia: Past, Present and Future

By using I-95, this thesis speaks to how the waterfront remains a strong part of Philadelphia's identity. The more research done, the more was revealed just how vital this sector was to the city becoming the "Athens of the West" in the late eighteenth century and "Workshop of the World" a century later. Recognizing the revelation in Philadelphia's collective identity, the main strength put forth in this thesis is the need for connecting the present generation to the past.

As Inga Saffron told me, "The Market Street wharf was the hub, the city began there. The city was built on the trade there. It's interesting what followed there, but it's been obliterated and most do not recognize the history." With this sentiment matching the scope of this thesis's concept design, it's time the city, its residents, and visitors alike share in commemorating the story of how Philadelphia's historic waterfront made the city, deteriorated to the point of being considered unusable only to now being regarded as a visionary rehabilitation project with many suitors and schemes.¹

Naturally, the opportunity to engage the public on this topic asks what can and should be presented. Is this a design that openly critiques

¹ It should be noted, the Independence Seaport Museum at Penn's Landing details the city's waterfront and its significance. This is to credit their work while signaling this proposal is to focus specifically on I-95's displacement of the interaction with the waterfront.



Bridges and highways gradually made the old river ferries obsolete.

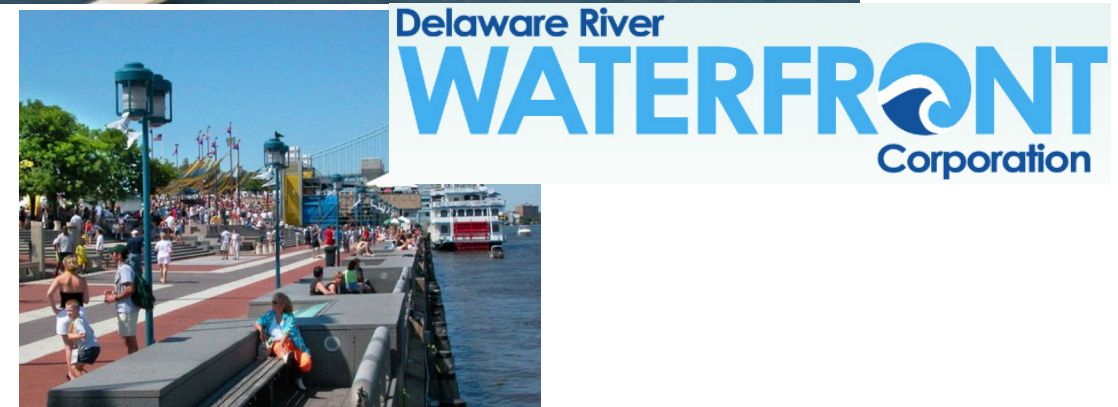
urban planning or is it one that acknowledges constant change is at the very nature of a city's lifespan? Is this something that strictly speaks to modern audiences, or should it posit towards the future, asking everyone to reflect on how development obliterates what once was, and the memory attached to what made the past potentially important in a collective identity?

A Voice for Change

What does it say about a city and its people who yearn to feel more connected to one another? Do these only occur when the various sports teams win the big game? One of the largest disconnects that has traditionally plagued communities in Philadelphia is the lack of representation, not just ethnic or socioeconomic within city leadership, but also a feeling that no matter what gets said, action that brings about positive change rarely happens. This is not to say activist groups haven't made changes, some more seen than others. It affirms that change can come in partnership with many modes through social action, one being through art and interpretive presentations that can fall within the scope of what constitutes elements from the museum field.

Analyzing how social change occurs typically comes down to how an issue is dissected. Though each issue brings enormous challenges and inherent problems, the history of Interstate-95 and the waterfront are no different in raising daily frustrations and concerns about accessibility and practicality; a need and service to surrounding communities. It starts with recognition. There has been a change in the air regarding the city's willingness to consider ideas and projects that reflect these sentiments. This has been reinforced from interviews conducted for this thesis. A cautious optimism persists where it once wasn't.

Perhaps the proposed cap by the Delaware River Water Corporation will indeed be the next step in adding a new layer to revitalizing Penn's Landing from its mid-twentieth century former self; coherent to its original inception, and providing new additional spaces where the public can engage in leisure and reflection. On life, on the day, and on accessing the past through this thesis's conceptual design. The giant concrete noise-machine beneath them that blows noxious pollutants into the air every three seconds may be a modern marvel and useful in transporting people every day, but a barrier it remains, no matter how much the city attempts to cap and cover it.



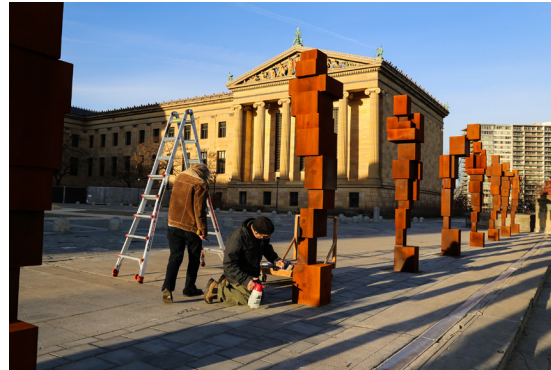
In discussion for this thesis, Ms. Saffron ended the conversation with, “Roads can be walls. Absolutely, yes.” A physical barrier to the city, and a wall preventing people from accessing the city’s historic waterfront identity. Nevertheless, walls can come down when new inventions of connection go up.

Application in the Museum Field

What Is a Museum?

The idea of what a museum is can be answered by evoking an image of a brick and mortar building full of artifacts and educational programming. Traditionally, this has been the mode by which we have defined museums. From the time of antiquity through the late twentieth century, museums could be understood in these terms. But increasingly, some professionals within the field have sought to reinvent and expand perceptions by converging on concepts that museums can be free of physical dwellings, or large collections of artifacts. Stripped of their physical representations, can what constitutes a museum expand into a more guerrilla-style of production?

Consider sculpture gardens. Are they not outdoor museums? For history museums, artifacts are the crux of the story because the individual is typically no longer with us. This is where material culture, an item in the place of the person, can be used for storytelling. In fact, what a museum ultimately can be depends on what the public is willing to accept as a means for educational programming, sometimes in collaboration and other times in competition with entertainment. Professionals in the field have challenged expectations by looking closely at visitor engagement, audience demographics and representation, new technologies that enhance the content, and new ways of presenting information to



the public that are not of the traditional museum sphere. It continues to be an evolution of what comes next, how professionals adapt to contemporary attitudes, concerns and new technologies, and what vehicles for engagement are the most cost-efficient and innovative in storytelling that shape the museum field.

Accessibility

Similarly, the concept of accessibility has become paramount in how museum professionals discuss design and implementation of their programming. For much of the history of museums, accessibility was usually of minimal concern. For modern audiences, concerns over accessibility run into the reality of a shortage in appropriate funding to modernize buildings and programming to meet these needs.

Accessibility can be defined broadly as the acknowledgement, planning and implementation of content, facilities and programming that can be engaged by individuals with physical and mental disabilities. Our society continues to embrace diversity in a number of identifiable manners, and it's been a positive development that individuals who require support are now among the top priorities during the early planning stages. It's a balancing act of recognizing, respecting and adhering to differences while also addressing stigmas that could be misused to reinforce prejudices.

For this thesis, an objective from the beginning was to consider how accessibility can be maximally optimized. As someone with an autistic sibling, who worked four years as a special education instructor, and who has been around friends and family with different accessibility needs, applying the appropriate means developed in this program to this project would demonstrate core

takeaways learned at the university. That is, how can we tell stories that reach the widest audiences? While it's not realistic to conceive reaching every single individual, the goal nevertheless should be to create designs and experiences that can be accessible to as many people as possible. When the scope is too narrow, the result could be inadvertently shutting people out of what information is being presented. This is no different for people with accessibility needs. When designers fail to consider their needs, or worse, make assumptions about what they need, the results could fall well short of the ultimate goal of providing spaces and programming that are accessible.

Rationale

When this topic was conceived as the choice for this thesis, it was important to demonstrate how the highway impacted – and continues to impact – Philadelphia's waterfront in various ways. After all, it's not an overstatement to say, "everyone has an opinion about I-95." As a lifelong resident of southern New Jersey, a personal account of the number of times driving on I-95, or visiting Penn's Landing cannot be counted. What wasn't considered was how the road was built, why it was built, and

how that has interacted with the city and the waterfront. Starting from a place of familiarity touched on earlier in this thesis, a potential for a design that pulled elements from the museum field's continuing trajectory of expanding beyond the confines of traditional interpretive means became the focal point for developing a concept design.

The first basic question was: what personal interest would be brought to the experience? Using cartography as a starting point, incorporating visual representations of the waterfront changing through the centuries would be a necessary component. This would either serve as a primary or secondary feature. This coupled a fascination of direct engagement with audiences. If possible, a call to action of some sort to give audiences the feeling they're part of the conversation about city planning and urban development. Lastly, a location of significance would be paramount to ensuring the design's relevance would be insured through maximum exposure.

The real challenge with this concept design was intent and who it should be speaking to. The first renditions sought out the visitor and general public; while these are still the primary audiences for the engagement, are they ultimately who this concept should be pitched to? Upon further discussion with professionals in the museum field, it became clear that the client for this project would be the Delaware River Waterfront Corporation. Being responsible for designing and

building the cap at Penn's Landing, persuading the DRWC that this concept design would be an essential component to their overall layout of the park on the cap became the pitch. Would the story have to change to match?

The answer is the story remains the same: how the waterfront has continued to change over the centuries since Philadelphia's founding in 1682. Interstate-95 is just one component within that story; its impact has had very real effects on the city, both good and bad. And the continued commitment to addressing accessibility to the waterfront at Penn's Landing has created opportunities for engagement involving civil planning and civic engagement. All of these elements are intertwined in this narrative. Having an onsite experience brings the story to the visitor by placing it at the site itself. By placing this experience directly above I-95, it will demonstrate the continuing evolution of how people interact with this space. It will give visitors context while leaving room for thought about how individuals use and interact with future spaces within the city. The historic Penn's Landing waterfront is to be the centerpiece of this renewed conversation. It should take advantage of engagement opportunities that create moments of reflection and understanding. This concept design seeks to achieve those things while being a template for other outdoor exhibit projects in the future.

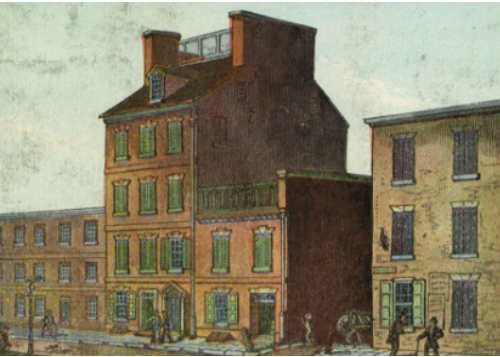
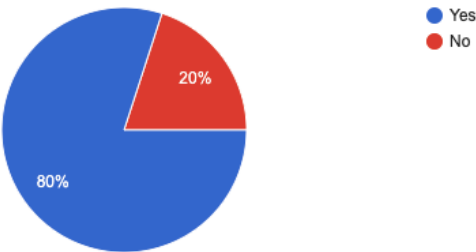
Evaluation Instrument

It became clear once this concept design was explained to colleagues and professors the need for a front-end survey evaluation would help assure this was something the public would be interested to interact with. Despite it being a small sample size, the results remained steady for the duration of the 72 hour period the evaluation was made available via social media. The only weighted control was limiting the survey to people who have no stake in the museum profession to remove institutional bias.

The evaluation stated the following, “This thesis gives a brief overview of the history and development of I-95 along Penn’s Landing in Philadelphia, and how the highway has impacted residents of the city from accessing the historic waterfront. Recently, the city has finally agreed to undergo development of a cover or ‘cap’ over I-95 at Penn’s Landing that will create a park and space available for recreational activities. The following survey asks what interest there is in creating an outdoor art/museum exhibition that allows visitors to learn about this relationship.” Providing a digital rendering made available by the Delaware River Waterfront Corporation for reference, four simple questions that prompted a Yes or No response were provided to those that participated in the evaluation. With 55 respondents, the results indicate 84% wanted to see the cap have some sort of recognition of the highway’s impact on the waterfront; 80% would be interested in an outdoor museum exhibition summarizing this story; 78% liked the idea of an interactive component that asked them to share their ideas about how the city can improve urban planning, and 59% responded they were not interested in sharing stories of how I-95 has impacted their lives.

Would you be interested in visiting an outdoor 'museum' exhibition detailing the history/impact of I-95 on the Philadelphia waterfront?

55 responses



Real World Application

The evaluation confirms, albeit from a small sample size, that the proposed cap space at Penn’s Landing is the correct spot for a design to present this story. Using activating space and the power of place, the results indicate the assumption put forth by this thesis is a unique opportunity that may not occur elsewhere.

Concept Development

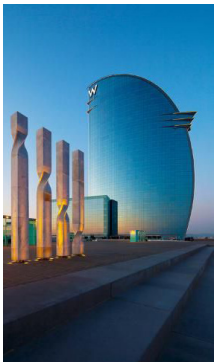
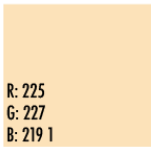
To activate the space along the waterfront, the need was to find elements that best spoke to what constitutes a wall, both physical and psychological. Influences from popular music, such as Pink Floyd’s concept album, *The Wall*, and Jonathan Borofsky’s 100-foot tall *Molecule Man* in Berlin, Germany, established imagery of a physical barrier being challenged by a human element. From there, conceptual development included a 3D map; a cutout of I-95 that shows how it severs the city from the waterfront; a cutout of a bathtub to simulate the design nickname of the Penn’s Landing section of the highway; a call to action that reflected the results of the evaluation instrument, and finally a bird’s eye view of the changing waterfront by having maps below people’s feet showing different periods of Penn’s Landing and what it looked like. This design was referred to as the “Kitchen Sink,” a nod to the ‘bathtub’ nickname. And as one can see from the included sketches, the design had too many things going on. While the individual elements made sense, the design did not speak to the client or to the purpose of this thesis.

After productive conversations with advisors, instead of designing the ‘thing’ first and working backwards to connect it to the story, the big idea was reshaped to fit the intended main takeaways. From there, identifying the client: the Delaware River Waterfront Corporation, was priority number one. The second was revisiting the location: why the cap? What about its placement there was so important? How would this activate the space, and what of using the space in ways that were less intrusive than what the previous design had instilled?

The cap does many things: it covers a 500 foot length span of I-95 between two major city streets; its tilted park concept will create an artificial slope that descends down to the water’s



Clockwise from Left: *Molecule Man*; thoughts on Adobe Software; a handful of the old sail warehouses along Front Street in 1910; a portion of the Independence Seaport Museum’s collection; considering the aesthetics of shape and movement; color palette for the concept design.



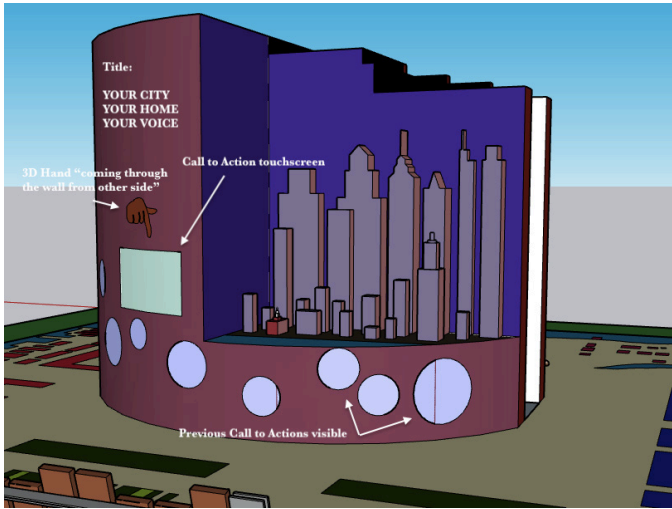
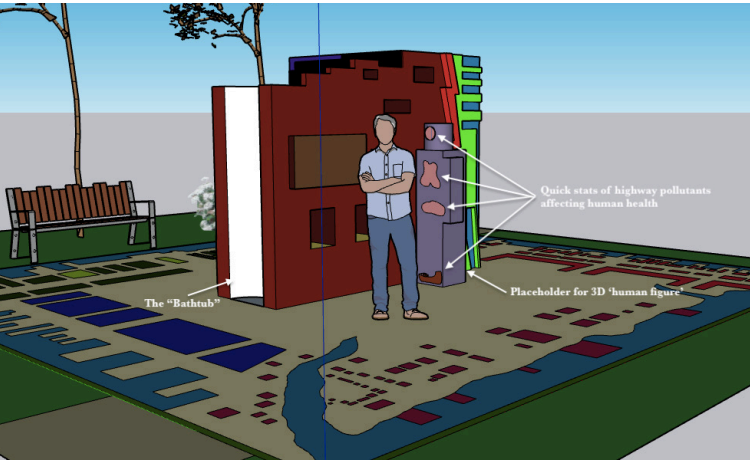
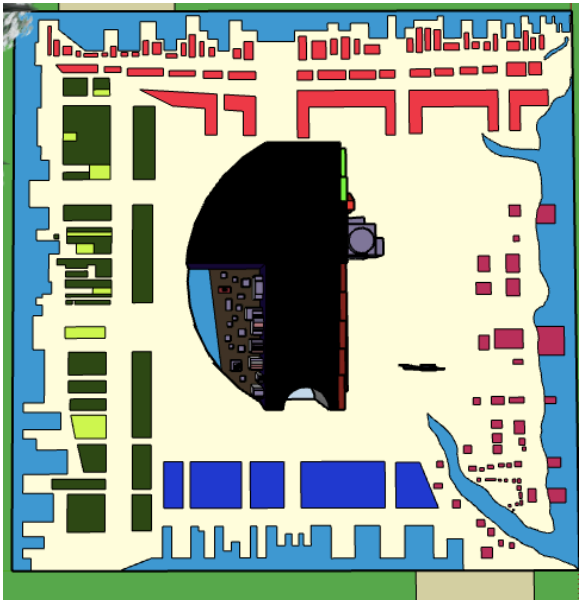
edge along the river; it will provide dozens of acres of greenspace that will be promoted by the city for recreational use, among other things. The opportunity then is proposing a design that spurs reflection on how Philadelphia developed, changed and continues to maintain itself over the span of the city’s lifetime. It’s an opportunity to be a sight for social concern in that there has been an ongoing thrust to increase visitation to this part of the waterfront for decades.



Considering these statements and observations, along with identifying the client and location, an earlier discarded concept involving landscape architecture was reconsidered. The bulk was stripped away, including the ‘breaking through walls’ concept taken from *Molecule Man*. Instead, the concept shifted its focus to the four different time periods (1702, 1778, 1820, 1920) depicted through maps. It was suggested recreating these four time periods via an acrylic or glass wall cutout in the shapes of buildings and landmarks that existed at each period in time. It was reminiscent of the clear-glass panels that have stenciled outlines of buildings and fortifications visitors can transpose over remaining ruins. A colleague shared an example, and this was briefly considered a possibility. However, none of the former structures along Penn’s Landing remain intact. But the idea of recreating the waterfront stuck. Was there a way of recreating the waterfront during each of the four time periods?



With the outdoor setting concept (pictured above) in mind, the first concept sketch involved a more traditional museum panel with artifacts along the waterfront (Top Left); a call to action took precedent for the next conceptual design, along with tie-ins to pollution and city planning; what was salvaged from this was the four-point map shown in the Upper Right. Dock Creek and the 1702 waterfront can be found in dark red to the right; 1778, 1820 and 1920 turn counterclockwise from there. Though deemed disorienting, the idea of using four distinctive time periods was kept.

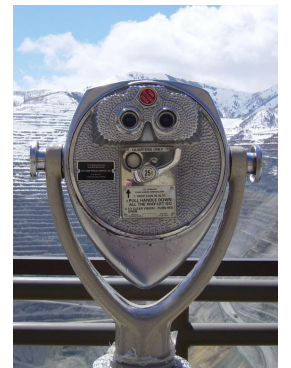
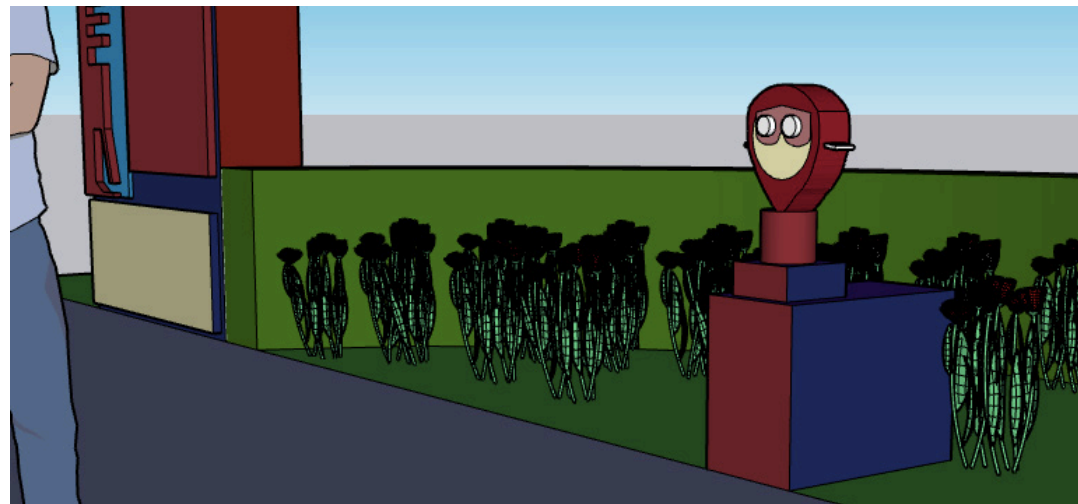
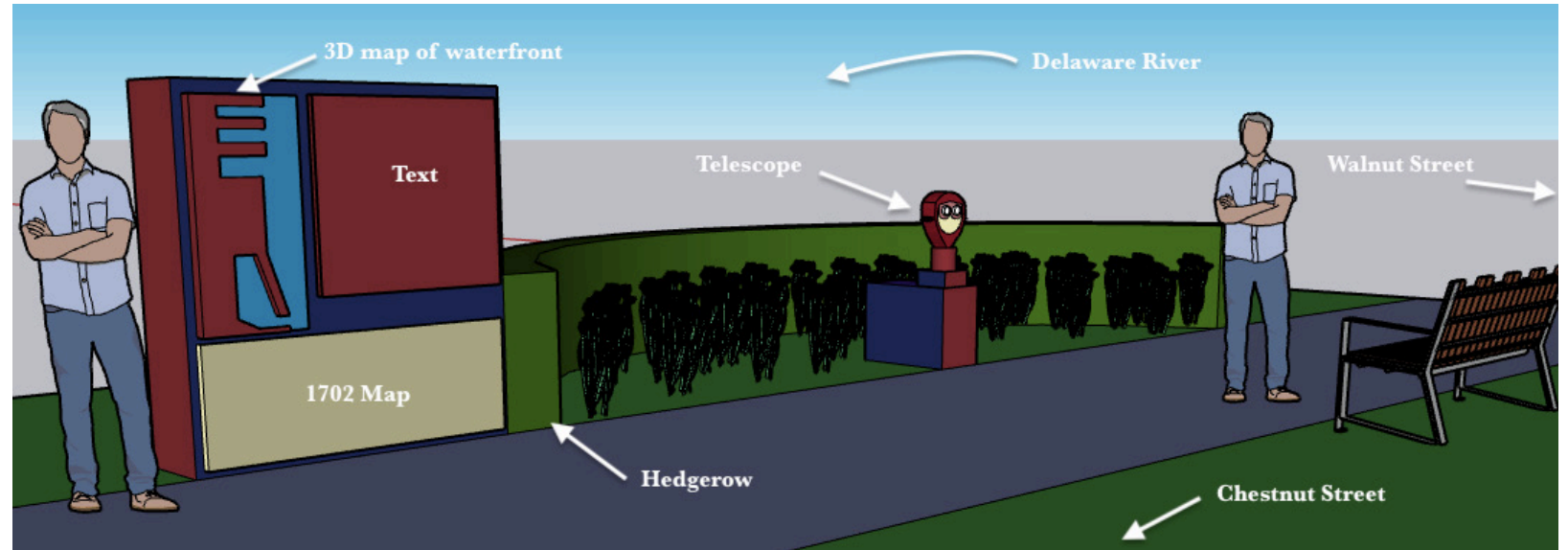


Concept Design

Settling on using a redesigned sightseeing telescope, or a tower viewer, that are common along waterfronts and national parks, the purpose is to bring something mechanical and playful in a twentieth-century-sense as a means of accessing the past. When the visitor looks through the lenses, instead of seeing the magnified real time surroundings in view, what if there were projected imagery instead?

One notable contemporary exhibit using VR technology in a bold production is the Chicago History Museum's Chicago OO Project. John Russik of the CHM and filmmaker Geoffrey Alan Rhodes conceived the idea of blending archival photographs together through augmented virtual reality, and presenting a seemingly fully immersive experience to the visitor by transporting them back in time to various events in the city's history. While the project itself brings into focus several factors for this thesis's design, the two primary goals of the Chicago OO Project align directly with the intention here: creating history experiences outside the museum walls, and engaging new communities by bringing experiences to the places where those stories occurred.¹ This is the power of place. It also gives credence to the idea of using immersive technology to bring the past to the present and allow modern audiences a brief trip through time.

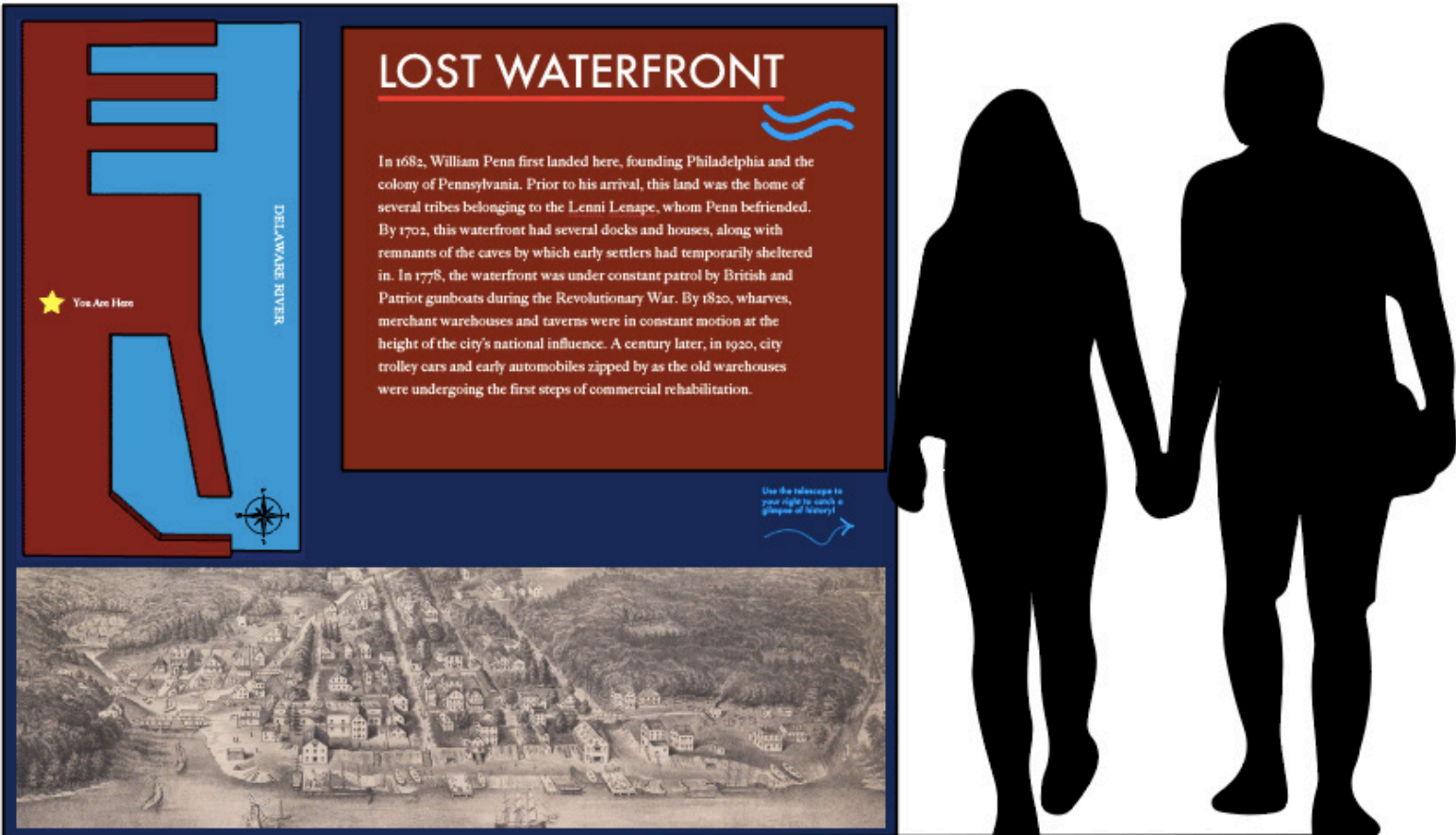
¹ chicago00.org



The Penn's Landing Telescope (PLT) seeks to give visitors a time capsule experience by bringing the past back to life in a brief simulation. The intent is to bring awareness to this history in order for visitors, many of whom are hoped to be residents of the city, to better understand this particular portion of the city's history. The greater goal is visitors/users of the PLT will walk away with newfound appreciation for the changes Penn's Landing has undergone through the centuries, and how this has contributed perceptions to the city's identity. If successful, it is hoped contemporary audiences and members of local communities will feel a greater sense of attachment to the city's past.

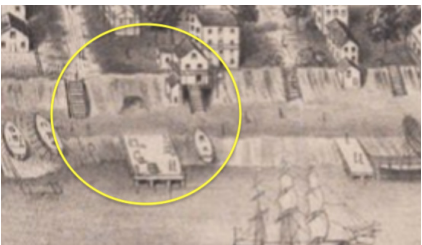
This design will combine an augmented experience with natural landscaping elements that seek to blend into the park setting while presenting the experience to the public off a pathway between Chestnut and Walnut streets. A small brick wall measuring 6' x 6'6" x 1'6" will sit a foot off the pathway. On the wall will be a 3D map of Penn's Landing marking the location of the design, and a small text panel that will read the following:

"In 1682, William Penn first landed here, founding Philadelphia and the colony of Pennsylvania. Prior to his arrival, this land was the home of several tribes belonging to the Lenni Lenape, whom Penn befriended. By 1702, this waterfront had several docks and houses, along with remnants of the caves by which early settlers had temporarily sheltered in. In 1778, the waterfront was under constant patrol by British and Patriot gunboats during the Revolutionary War. By 1820, wharves, merchant warehouses and taverns were in constant motion at the height of the city's national influence. A century later, in 1920, city trolley cars and early automobiles zipped by as the old warehouses were undergoing the first steps of commercial rehabilitation. Use the telescope to your right to catch a glimpse of history!"

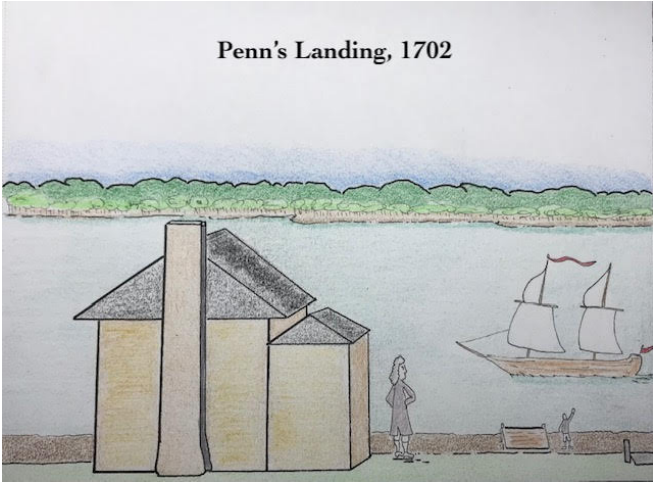


A summarization of this text, along with additional information on the waterfront and the purpose of the design, will be available via audio format through a QR code on the bottom corner of the panel. This will be for audio users and for visually impaired individuals who can access the content with a swipe of their cell phone across the code.

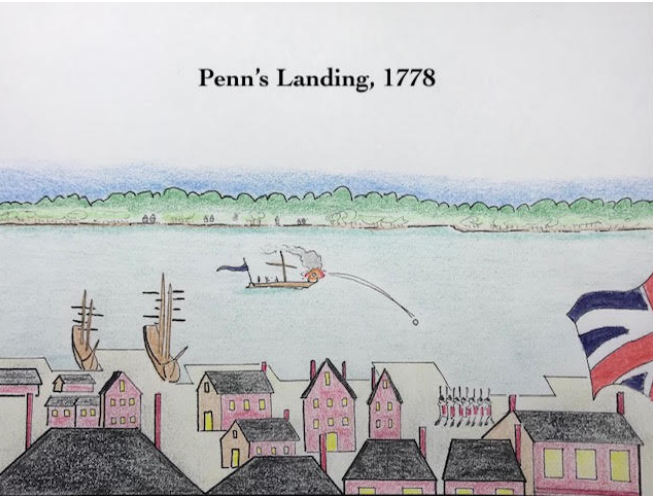
To the right of this text will be a half-wall hedgerow of 3' in height, measuring 26'4" in length along the pathway. The half-wall hedgerow represents I-95, a distinctive barrier to the waterfront, but representing only *half* the story. The road is only one element within the story of the changing waterfront: an outsized one in recent decades, but only one of many over the centuries. Planted flowers, thirty-five bundles in all, represent each decade the waterfront has been active since the city's founding. At the center will be the PLT on a mount. Similar to a periscope, the visitor can use handles on either side of the PLT to raise or lower it to suit their height. When lowered and resting on the base, the PLT's eye lenses will be precisely 4' from the ground to allow wheelchair-bound individuals unobstructed access to the lens. Upon looking into the lens, visitors will see a simulated digital landscape of the waterfront beginning in 1702. Each simulation will run for approximately thirty seconds before a message appears stating, "Please flip the view-finder lever to see the waterfront in another time." The lever below the lens will allow the viewer to flip to the next digital landscape. A total of four options will be available to represent the waterfront in the years 1702, 1778, 1820 and 1920. Within each of these options will be augmented imagery showing digitized people, ships, trollies and cars at their respective time periods along with various changes in buildings along Penn's Landing. Adding to the augmented simulation, the PLT can swivel 90 degrees north or south, enhancing the experience by furthering the simulation to span the entire waterfront in either direction. A small bumper attached below the neck of the telescope will read, "Eastbound, the sun rises. Life, a new."



A close up reveals one of the first docks in Philadelphia which, along with the house behind it, were used for the concept for the first simulation. Of note, in the center of the yellow circle is one of the early caves colonists lived in until they built houses for themselves.



A sketch of a Revolutionary War gunboat was used for inspiration for the next simulated scene. Between September 1777-June 1778, Philadelphia was occupied by the British army. Several battles, including Germantown and Red Bank, were fought to dislodge them. Instead, the British enjoyed their stay with lavish parties.

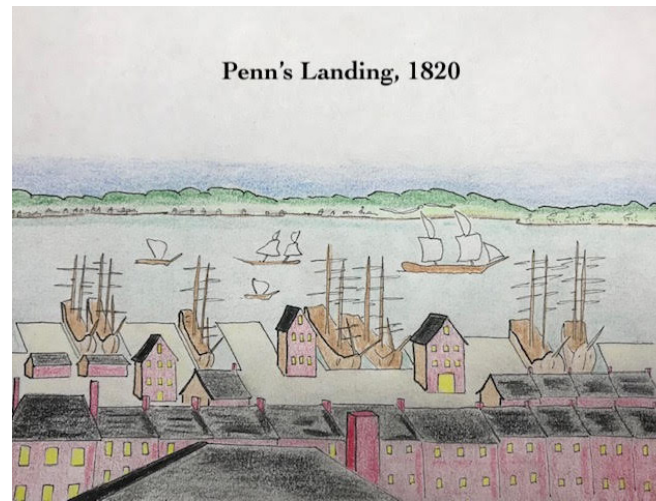


Outcome and Impact

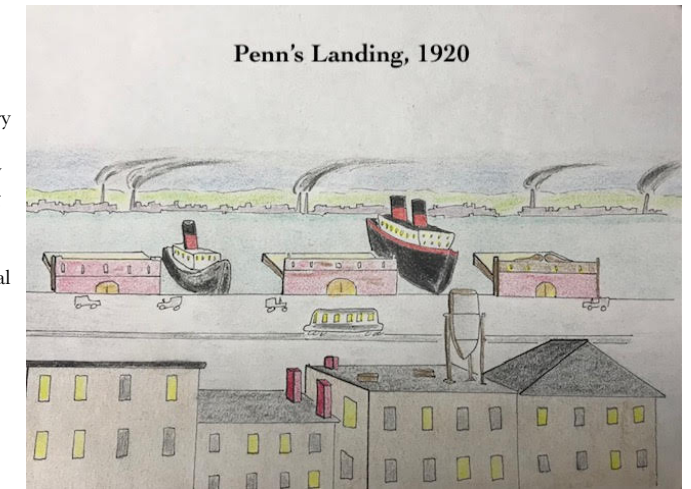
Success will be measured with visitor engagement and feedback to the Delaware River Waterfront Corporation, and to the city. As this is intended as a conceptual design, discussion for what future steps can be taken to maximize its potential development in the real world will be briefly explained in the following sections.

In the interim, bringing greater awareness to the waterfront's history, and its various incarnations is the priority of this design. The intended audiences for the PLT can be broken down into the following three groups: primary: DRWC; secondary: local residents; tertiary: tourists, city government officials, museum professionals, and landscape architects. If done correctly, the takeaway for visitors will be a new understanding of what the waterfront looked like at different times throughout the centuries, leaving them to consider where Penn's Landing goes in the future.

It should be stated that this design does not seek placing blame on any singular entity or individual for the continued obstructed access to Penn's Landing. While the first portion of this thesis paints the decisions and the development of the highway in a disruptive manner, the proposed design is meant to transcend those disruptions by showing constant change is at the very nature of what a city is. In truth, the complete story shows the waterfront sustaining several



Left: Philadelphia at the height of its power and influence, a commercial trade and manufacturing behemoth. Right: Industry had overtaken the skyline while trolley cars and early automobiles were zipping along Delaware Avenue. The old wharves were either used for commercial passenger ships or were slowly decaying.



changes to its identity over the centuries, and remaining a place of interest, spectacle and visitation for residents and tourists. Above all else, these conflicting realities of identity between the waterfront, the city, and people show how human beings persist in adapting to innovation, culture, and unforeseen circumstances that can create obstacles towards resolution, or incentivize distrust among the intentions of city planning and development. All of which play into how people interact with the spaces within the city: do they serve the needs of a community, and do they help foster a collective identity that is desirable among residents? The intention with this thesis and design is to state that these factors are real, serious and should not be underestimated or taken for granted. They also provide opportunities for engagement and persuasion. If the museum field can create change, perhaps that change is really how the message is delivered on behalf of the community. In this case, that message is clear: Penn's Landing is vital to Center City, and accessing it must remain a priority.

The topic of this thesis was chosen to highlight the imperfections behind accessing memory and interpreting history. Museum professionals in Philadelphia need not look beyond the 'walls' of the city to find stories involving them. And if the cap does render a smooth transitional park experience over I-95, *the great barrier*, has this wall been removed? Or has it simply changed, along with perceptions, of what walls are, what they can be, and what they ultimately can and cannot do? They may be disruptors but they cannot stop human determination of connectivity. A road serves that same determination of connectivity. It's the conflict inherent in this story, part of the Penn's Landing story, that has created a figurative wall from uncoupling the two from one another. For now, they are interlocked, destined to be bedfellows for the foreseeable future. And we need to accept that.

Ensuring a Successful Application

The opportunity for a real world application has been the crux of completing this thesis. Philadelphia is rich in art, culture and history. This story provides the chance to combine all three to inform visitors. It could also be a way to expand the conversation beyond the confines of Penn's Landing and touch on city planning itself. "I love the idea of an urbanist history museum about highways and space. It's a great idea for a museum," said Ms. Saffron for this project's potential. The interest may be there, but to ensure the subject's ability to reach visitors in new ways, perhaps the best way to start that conversation is by working with the waterfront's planners on designs that introduce what fundamental stories are important for visitors to know.

Gathering quantitative data after the PLT has been installed is a priority to gauge visitor usage. If the PLT is installed in May 2024, data should be collected for the next three months over the summer at peak visitation hours: weekends between the hours of 10:00am-4:00pm. Furthermore, museum professionals could stop and ask users their opinions of what they've experienced, collecting qualitative data too. The University of the Arts' Museum Studies Program would be a great candidate to instruct graduate students in course work by having them conduct these evaluations. Taking it a step further, the university would be the best candidate to develop

the PLT, and other guerrilla-type street designs that incorporate elements of the museum field into the urban sphere. By having a direct-to-work pipeline for students, this thesis seeks to inspire change at the university too. The timeline for the development and implementation of this concept design is eight months; therefore, students could develop and design it over the course of two semesters.

Funding and Other Applications

Among the questions going forward is cost, particularly among building materials and electronic components. The digital imagery and mini-films for each time period would require hiring actors and designers to create a virtual waterfront at four different times in the city's history. Accuracy being among the top priorities, accessing the practicality of this design component will be foundational to ensuring its within the scope for success and for meeting the intended goals set forth within this thesis. Seeking grants for public art and interpretive displays through the PEW Center for Arts & Heritage could establish funding of \$300,000.¹ Similarly, partnering with existing museums like the Independence Seaport Museum or art institutions like the Philadelphia Contemporary offer ways of collaborating to decide the proper role for this design, or collaborate on programming that could

¹ <https://www.pewcenterarts.org/>

help market and promote it. Another programming idea would have Pig Iron Theatre Company from Fishtown recreate live action interpretations onsite of the four time periods that could further bring public awareness to the telescope.¹

Working on this design brought questions of practicality within outdoor spaces, whether activating them or ensuring the location best serves the design. This thesis relies on the DRWC's intended plan to build the cap over I-95 at Penn's Landing, scheduled for completion by 2026 at the time of this writing. However, this concept can be successful without the cap. Its sole purpose is to create an augmented reality of what the waterfront looked like over centuries. This application can be produced and located at any point along Philadelphia's waterfront. Therefore, this design could serve as a singular entity, or one of several telescopes to be placed throughout the city, recreating the experience depending on its location. This could afford greater accessibility opportunities, particularly to grade schools, whose students could use the interactives as a means of accessing not only the historical content, but also a means for discussing interpretive methods. In short, its application can be adaptable to its surrounding environment and used in a variety of ways.

¹ <https://www.pigiron.org/>

Conclusion

Museums have been classified as being, among their many functions, social instruments. This first came to prominence with the publication of Theodore L. Low's *The Museum as a Social Instrument* in 1942, but took on new relevance and expanded meaning during the 1960s civil rights movement.¹ The concept has continued to push museums into how they view themselves as cultural centers for interpretation, social justice and change, and increasingly, serviceable to underrepresented communities.

The story and concept design presented in this thesis should be viewed by museum professionals as a case study in taking an ongoing issue: the impact of I-95 on the city's waterfront, and using it as a form of telling a larger narrative (the continuing change of the waterfront/city impacts its identity). As stated earlier, one must be careful framing this topic as different neighborhoods within the city have been impacted in various ways that do not fit into the scope of this thesis. Nevertheless, Penn's Landing is where the city was born and was most identifiable for its first two centuries until a westward drift finally changed how the city viewed this portion along the Delaware River. It offers us further insight into how change occurs and impacts people and places in unforeseen ways, and how opportunity (connecting to the intercontinental highway system) can bring with it consequences that can reverberate for decades. And

further still, these relationships craft new identities, and perceptions of those identities, within cities and their communities. These relationships, and how we dissect and interpret them, are vital to the museum field, and the backbone to the exploration behind this thesis.

What has been presented here is a case study in how changes affect a city's identity, how residents react and identify with those changes, and how barriers can prevent accessing the history behind what shapes and defines those identities.

As Thomas Jefferson once observed, "The earth belongs always to the living generation."¹ Museums become their best selves when they present stories of the past that people in the present can relate to while simultaneously affording the opportunity of participation by contemporary audiences. This is achieved through collections, archives, interpretation, programming and leadership that creates an experience of informative exchange to the benefit of modern visitors and communities. At its root, the exchange is more than a transfer of cultural and historical markers. It's a connection to the human experience that has remained constant for thousands of years.

Without this connectivity, individuals form their own walls and trend towards their worst impulses. The world will move on with or without the human species. Humanity can only make better choices if it chooses to forge better means of accessing the reasons why.

So yes, roads can be walls in the present and to the past. But just as innovation inadvertently created these barriers, innovation can create new ways of alleviating them too. The planned building of the cap, and the continued dialogue between the city and its people of reckoning with its collective memory are steps in that direction. This thesis is a contribution to how the museum field might play a role in leading it.

¹ Alexander, p. 221.

¹ Ibid, 15.

Appendix

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Note: All interviews have been condensed from my original notes for accuracy and for time. These were conducted via phone and were not recorded.

Dan Knight, March 15, 2022

Q: How did you get involved with I-95?

A: I have a background in civil engineering so I was naturally drawn to them building the highway. I wasn’t opposed to it. But I also had concerns over what was being done with all the contents they were digging up.

Q: Can you speak to that a bit?

A: Sure. Excavators essentially came in and moved all that earth and its contents, and dumped it south of the city in a handful of places near the airport. There was no archaeological survey, no real concern for what might have been disturbed. Just a need to get the debris out of there.

Q: Were there others interested in finding artifacts?

A: There were people who were curious and concerned that the city had neglected properly sifting through everything. I’m lucky to have gotten in there and found what I did. The items are important in explaining the waterfront’s history. The history deserves to be known.

Q: What of these artifacts now?

A: I still have everything I pulled from the dirt. The archaeological group I’m affiliated with donated a large portion of our findings to the Seaport Museum. There’s all sorts of cool things we found: cannonballs, barshot, forks and knives, buckles, hooks. Everything you’d expect to find in an area that saw tremendous action for centuries.

Harry Kyriakodis, author and historian, September 8, 2022

Q: What interested you about this subject?

A: The waterfront was of interest to me. I lived for a time in the Pier 3 condo complex and took an interest in everything along the river. I discovered along the way that much of it was destroyed by the highway.

Q: What stories stand out when you did your research?

A: The waterfront was dying when they built the highway. Development of the city suburbs has always had a westerly push. There was talk of putting it outside the inner city, at least briefly, but generally, the direct route through the city is the most cost effective. That's why they did what they did.

Q: In your opinion, does the highway serve a community good? To the city?

A: Without the highway, the city would have been cut off from other major cities like New York, Baltimore and DC. There was no way Philadelphia could do that.

Q: What has the city gained/lost by the highway's inclusion?

A: It lost access to the river by way of the city. It's a lost opportunity too from a historical perspective. It erased the memory of what had come before. There was no [archaeological] work done by the city before everything was removed. It felt purposeful by the city government, that they didn't care about the history. All that mattered was the automobile took precedence over any talk of slowing down the inevitable: building the highway along the river. Access to the river has been permanently cut, but it's good that the city continues to rehab the effect to the waterfront. The recreational reclaim is a positive development which I support.

Q: Thanks for your time, Harry. I really appreciate it.

A: You're welcome, Adam. Take care.

Inga Saffron, The Philadelphia Inquirer, October 31, 2022

Q: What drew you to focus on 95 and the waterfront?

A: It was terrible that cities had done things to themselves during urban renewal. Before my time writing on this subject for the Inquirer, I spent time overseas and had an eye on architecture and design. As a foreign correspondent, I saw the impact on other cities. Highways were an obvious subject for me to focus on when I got back. I was interested in writing about more than aesthetics in just buildings. Parking lot/garages, etc.

Specifically, what set me off was when Ed Rendell was mayor. One failed event after another to develop Penn's Landing. Simon Property group/Shopping mall developer expressed interest in building on Penn's Landing onto a giant parking garage. We're so lucky we dodged a bullet that didn't get built. I wrote a column on urban development off that proposal that said, "We should not be aspiring to this." My editors at the Inquirer encouraged me to look at what went wrong with Penn's Landing, and I went from there. I attended multiple sessions that advocated changing the city. It became a big thing.

Q: What about 20th century urban planning did we get right and did we get wrong?

A: It would be interesting to compare some cities that bypassed the highways from those that embraced it. Some defense of the highways could be that the multi-links and extensions to other highways brought in new people from the suburbs. It helped local economies. That part of the story is important. It's just how they ripped up so much that seems careless....The real 95 is the NJ turnpike. Philly freaked out and demanded they be included.

Q: How often do you spend time at Penn's Landing? What emotions/feelings come to mind?

A: Tremendous progress. Reconstituting the PL corporation into the Delaware River Water Commission is much more progressive/reflective of city planning attitudes. They've done a lot of great things to ensure people see the waterfront as a place of many attractions and things to do. They gave all these reasons for people to come to the waterfront, making it far more accessible. Not just festivals but housing. And the beer gardens are fabulous, I've spent a lot of time down there. One of the most bizarre buildings is the Seaport Museum, which was not built to be a museum, but for the bicentennial.

Q: I consider architecture a mode of identity, and how we define cities based on the buildings that inhabit them. The same can be said for roadways. Is that how you view 95 and perhaps its impact on the identity of the city?

A: That's a great question. Roads can be walls. Absolutely, yes. Look at what they could have done with the section south of the Ben Franklin Bridge. We have two roads, actually. 95 and Columbus Boulevard. The volumes of traffic fall off dramatically south of the BF bridge. Can't we lose one of the roads?

Q: In the museum field, we continue to challenge the concept that museums must be brick/mortar buildings with artifacts. Sculpture and botanical gardens, Zoos, aquariums, are types of museums. I'd like to tell the story of 95 and the city on the cap. What would you like to see? What are must haves and what would you avoid?

A: One of the problems with Philly history museums is their exhibits don't change. Is this an opportunity to do something, more like an art museum? The Philly Contemporary Museum - current installation at the Cherry St. Pier is about the river (art piece), about how mussels filter water. The Waterworks has an exhibition on freshwater mussels too. But to Penn's Landing, it's a little late to some degree. I have my concerns about the cap. I was disappointed they didn't do a conventional capping or find a removal of 95. To be bold, it would have been nice to get rid of 95. We lost this opportunity. This is the second best solution. How committed are they to transit accompanying this? How will they activate all that space? How will the space be used? When will add-on development be added? Will the design be resilient to climate change? How connective will it be? All these things change our perception of Penn's Landing. I love the idea of an urbanist history museum, highways and space. A great idea for a museum. I love the idea. A Penn's Landing museum? Market street wharf was the hub, the city began there. The city was built on trade there. It has been obliterated and it's interesting what has followed.

Q: Inga, it's been a pleasure speaking with you. Thank you so much for your time today.

A: It's been my pleasure. Good luck with your thesis, Adam. Take care.

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http://www.pennways.com/I95_PA_CS_Const.html

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<https://www.inquirer.com/news/i95-park-cap-delaware-river-curious-philly-20190624.html>

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<https://www.delawareriverwaterfront.com/>

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<https://sojo1049.com/njs-grounds-for-sculpture-night-exhibit/>

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<https://allthingsliberty.com/2017/10/american-perspective-guard-boats-hudson/>

Omnis magnus casus initium habet

