

ABSTRACT

Title of Thesis: RAZING THE BAR: COASTAL RESILIENCE
AND COMMUNITY COHESION THROUGH
ECOLOGICAL DESIGN

Erin Hamilton Nivison, Master of Architecture,
2024

Thesis Directed By: Professor Brian Kelley, Associate Dean, School
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Separated by iron fences, dense trees and drastic changes in elevation, two seemingly close communities are divided by economic greed, a lack of urban planning and community engagement. Over the last two decades the shoreline along National Harbor, Maryland has transformed from abandoned plantation land to a revitalized urban center. Now home to the MGM Casino, Gaylord Convention Center, Tanger Outlet Malls, the iconic Capital Wheel, and million-dollar townhouses, National Harbor's master plan has been realized into a dense economic hub. While it has grown extensively, it lacks connectivity to the surrounding suburbs of Fort Washington on a multitude of scales. On a macro scale, it is one of the few suburbs of DC that isn't serviced by a metro line and on a micro scale it lacks porosity to neighboring developments. Iron fences aren't the only issue Fort Washington is facing, with the continued effects of climate change, sea levels are expected to rise an additional two feet by 2100 and commercial and residential developments will be put at risk. While the Potomac River is finally

showing signs of improvement after half a century of pollution from sewage, agricultural runoff and sediment runoff, how can we protect both the natural and built environments harmoniously?

RAZING THE BAR: COASTL RESILIENCE AND COMMUNITY COHESION
THROUGH ECOLOGICAL DESIGN

by

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Thesis submitted to the Faculty of the Graduate School of the
University of Maryland, College Park, in partial fulfillment
of the requirements for the degree of
Master of Architecture
2024

Advisory Committee:
Professor Brian Kelley, Chair
Professor Hooman Koliji
Professor Jana Vandergoot
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Preface

This thesis is shaped by my deep curiosity about urban design, a passion for architecture, a brief chapter as an ecologist, and a lifelong love of the outdoors. Though originally from Iowa, I've lived in Tennessee, Florida, Alabama, Georgia, Virginia, and now Maryland, each place offering unique insights into the relationship between people and the environments they inhabit. Living near the Potomac River, I've come to appreciate its beauty and the vital role it plays in this region's diversity and identity. Through this work, I hope to contribute to its preservation and protection, ensuring its significance endures for generations to come.

Dedication

Although my journey to architecture has been anything but traditional, I am deeply grateful for the people and experiences that have guided me to the University of Maryland School of Architecture, Planning, and Preservation. To my parents, for their steadfast support; to my children, for their love, energy, and chaos; and to my partner, for always believing in my potential, thank you. I am equally appreciative of my professors, whose patience and wisdom have shaped my growth, and my classmates, who have continually challenged and inspired me while being there to lift me up when I needed it most. To everyone who has profoundly impacted my life, I extend my heartfelt thanks.

Acknowledgements

I would like to begin by thanking my thesis committee; Brian Kelly, Hooman Koliji, and Jana Vandergoot—for their invaluable guidance and support throughout this project. Your mentorship provided both the structure and freedom I needed to explore my ideas fully, and your insights were instrumental in helping me grow as a designer. A heartfelt thanks to Matt Bell for challenging me to analyze and deepen my understanding of modern architecture. Your thoughtful critiques pushed me to elevate my approach and broaden my perspective. To Eric Jenkins, I am forever grateful for teaching me the fundamentals of architectural drawing, analysis, and critique, skills that have been the foundation of my education. Finally, I want to thank Professor Noonan for his enthusiasm and dedication to the field. The countless hours of instruction during our study abroad trip to Finland have left a profound and lasting impact on my architectural journey, enriching my education in ways I will always carry forward. To all of you, I owe my deepest gratitude for shaping this incredible path.

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Chapter 1: History of National Harbor

Introduction

National Harbor, Maryland is perfectly situated along the Potomac River, just south of the District of Columbia. It's connected to the beltway that circulates vehicular traffic around the DC metropolitan area. The most notable features include the MGM Casino and Hotel, the iconic Capital Wheel, the Gaylord Convention Center and Tanger Outlets. Interspersed among these features are mixed used developments of residential, retail and office space, along with high end restaurants, and other privately owned tourist-gearred attractions. While it is considered an economic hub of Prince George's County, it wasn't always this way. This chapter will examine the cultural, demographic, economic, physical, and educational history of National Harbor within its surrounding context.

History of English Settlement

Although the town is known as 'National Harbor' to residents and tourists alike, the name is relatively new since its inception in 2008. The history of the land that National Harbor resides can be recalled back to the 1600's when English explorer John Smith arrived in Maryland and noted the Piscataway-Cony tribes that inhabited the land. The Piscataway tribe and its smaller constituents spread from the Chesapeake Bay to the Potomac River, going as far south as current day St. Mary's County and as far north as Baltimore City. Through colonization efforts, wars and disease, the Piscataway tribes were split up and their populations dropped drastically. The few that remained in southern Maryland assimilated

within the local communities, leading to an entire culture essentially being lost. ¹ Starting in 1660 European settlers, their slaves and indentured servants began occupying present day Prince Georges County. By 1850 there were over 11,000 slaves in the county and the African American population exceeded the white population. ²

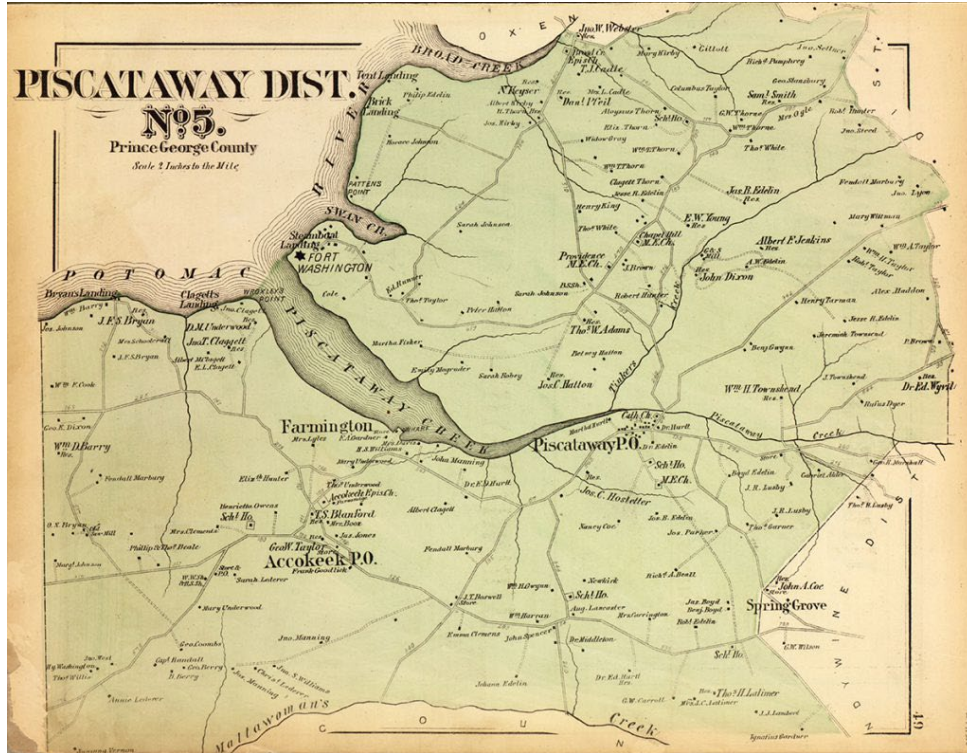


Figure 1: Map of Native American Tribes in Southern Maryland in 1600's

Salubria Plantation

The earliest records of the land where National Harbor now sits dates to 1811. The Addison family owned hundreds of acres of land along the Maryland coast of the Potomac River, part of which was Oxon Hill Manor. In 1827 Dr. John Bayne acquired 64 acres of Oxon Hill Manor when he married his first wife, and they named the plantation 'Salubria'

¹ Hamilton, Tim. "Piscataway-Conoy: Rejuvenating Ancestral Ties to Southern Parks." Natural Resources News. October 1, 2018

² Countywide planning and historic preservation, and Jennifer Stabler (2020).

meaning “healthful”.³ The Salubria plantation occupied present day National Harbor and the plantation house sat on present day Tanger Outlets.

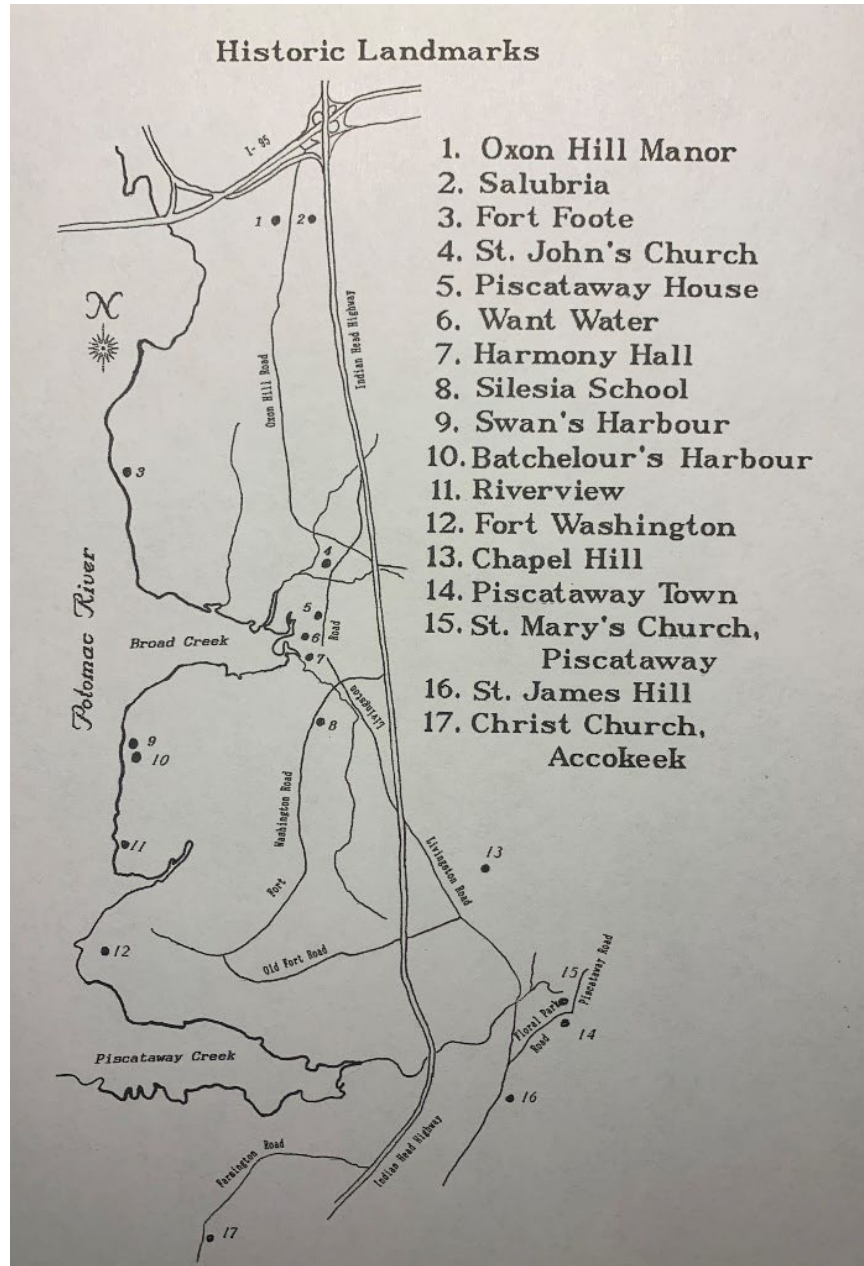


Figure 2: Map of Fort Washington Area Historic Landmarks

³ Collins, Pauline. "Salubria - a Maryland Plantation Home by Pauline Collins 1992." Salubria - A Maryland Plantation Home by Pauline Collins, 1992.

Dr. John Bayne was a doctor, horticulturalist, politician, and slaveholder that influenced Prince Georges County in many ways. Salubria plantation is known for one of the earliest acts of slave resistance in Maryland. A 14-year-old slave named Judah fatally poisoned three of Dr. Bayne's children and set fire to the home. She later confessed to the murders, was found guilty in court, and hung in nearby Upper Marlboro.⁴ This is one of the youngest women reported to be hung in America.⁵ Despite the atrocity, Dr. John Bayne went on to become a Union officer and worked with the state of Maryland to compensate slave owners to free their slaves as well as provide public education to emancipated slaves.

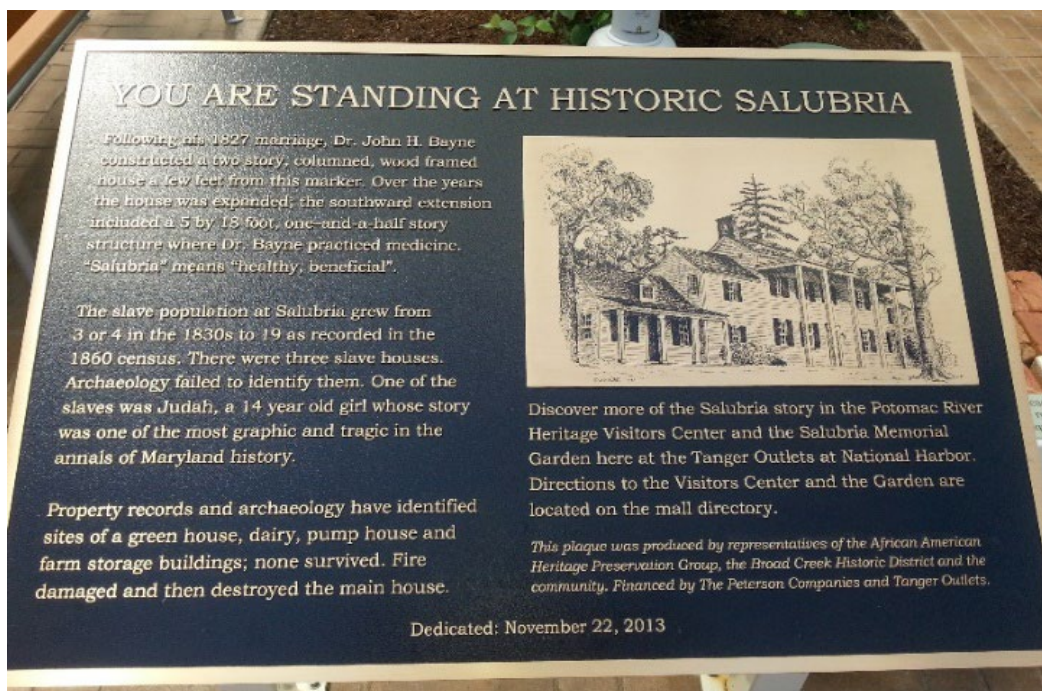


Figure 3: Historic Placard at Tanger Outlets

⁴ Brown, DeNeen L. "Using Painful Pieces of History, Prince George's Hopes to Boost Tourism Plantation Life's Underside." *The Washington Post*, Jun 04, 2014.

⁵ Muhammad, Askia. "Plantation Where 14-Year-Old Slave Was Hung to Become Outlet Mall." February 3, 2012.

Development of National Harbor

In 1984 the Salubria house burned down and was offered for sale, thus starting the 20-year conflict to rezone and redevelop the waterfront area. Port America was the first redevelopment plan proposed in 1988. The zoning board later approved the rezoning for mixed use and commercial development in the mid 90's.



Figure 4: Burgee-Johnson- Port America

When the Port America project fell through, the National Harbor project was later proposed and broke ground in 2004. The original slave quarters on Salubria plantation were torn down in 2003 and in 2012 the land lost all historical designation after PG County Historic Preservation voted to end its historical designation and refrain from nominating it for the national register. ⁶ The archeological artifacts that remained were placed in an exhibit at Tanger Outlet mall called the Potomac River Heritage Visitors Center. The visitors center also consists of the Salubria Memorial Garden and History Walk along the shoreline. Nearby residents assert that stripping history from the land is a great injustice since the redevelopment was subsidized by taxpayer money and little was done to fight and preserve it.

7



Figure 5:: Salubria Memorial Garden

⁶ Muhammad, Askia. "Plantation Where 14-Year-Old Slave Was Hung to Become Outlet Mall." Final Call. February 3, 2012.

⁷ Muhammad, Askia. "Plantation Where 14-Year-Old Slave Was Hung to Become Outlet Mall." Final Call. February 3, 2012.



Figure 6: The Potomac River Heritage Visitors Center

Demographics and Socioeconomics

National Harbor lies within Prince George's County, Maryland which the population is 68% black/African American. The population shifted throughout the 1900's due to migration from Washington DC, to Prince George's County and now it is shifting further away from DC to surrounding counties such as Anne Arundel, Charles and Howard counties. Prince George's County was once known as the most affluent black county in America but now Charles County holds that title. A study from DeRenzis and Rivlin found that the migration in and out of PG County was relatively similar except the income population was mostly black and the outgoing population was mostly white. This shift coupled with missing middle housing and lower household incomes led to economic disparities and unsafe communities.⁸

⁸ DeRenzis, Brooke, and Alice M. Rivlin. *A pathway to the middle class: Migration and demographic change in Prince George's County*. Brookings Greater Washington Research Program, 2007.

The economic analysis of National Harbor provides statistics of the local economy alongside socio-economic information. National Harbor residents that commute out of the area are two times larger than non-residents and residents who work in National Harbor, which is a large imbalance (18,000 vs 51,000). This can also be contributed to the lower cost of housing in Southern Maryland compared to neighboring Virginia areas. The opening of MGM Casino and Hotel created 3,000 new jobs which they conclude would put a burden on regional transportation and infrastructure. The improvement of the Woodrow Wilson Bridge from 2001 to 2009 was influenced by both the development of National Harbor and the amount of people commuting from Maryland to Virginia.

The analysis also examined a multitude of economic factors, including employment growth, forecasted growth, growth due to the competitive effect, and the location quotient (LQ) which measure how unique the local economy is. National Harbor has an above average LQ in the following areas: Sciences, Military, Maintenance and Food Services.⁹

Education

Since National Harbor is a relatively new community, this section will primarily focus on Prince George's County as whole, as well as the surrounding community of Fort Washington. Prince George's county education gap began in the 1960's when segregation of races was at it's height. Although the emancipation proclamation freed slaves almost 100 years ago, black/African American populations were being sent to separate schools.

⁹ National Harbor Economic & Workforce Analysis | PGCAJC, September 17, 2016.

Eventually the schools decided to bus black kids to the white schools in Fort Washington which led to further fights and complications amongst races.¹⁰

Jordan Ware from the Department of Educational Leadership at the University of Oklahoma explores how social economic status (SES) and Free or reduced-price lunch status relates to property values. Through examining PISA scores, it is evident that more advanced social groups substantially outperform their disadvantaged peers. Students' socioeconomic status in urban environments can prevent them from deep learning and development. He also discusses how the script should be flipped from "poverty" to "access to capital", as how can we provide capital to these students of low SES, and how free or reduced lunch is the bare minimum, we need to be doing much more to help these students succeed with their peers from average to high SES backgrounds.¹¹

A researcher at the University of Columbia, Martin Guhn explores successful and unsuccessful school reform programs when facing poverty and ethno-cultural segregation. Two successful reform practices he examines are the School Development Program (SDP) and Child Development Program (CDP). The analysis is guided by bio-ecological theory of human development which relates to several different processes; relationship building, autonomy, resistant to change, competence, leadership, team support, and school- family-community partnerships. He concludes that reform is not uniform, it will not look that same since every system is culturally, economically, and politically different. Reform must be a multi-level approach that includes all stakeholders in the process; the student, parents, teach,

¹⁰ Guhn, Martin. "Insights from successful and unsuccessful implementations of school reform programs." *Journal of Educational change* 10 (2009): 337-363.

¹¹ Ware, Jordan K. "Property value as a proxy of socioeconomic status in education." *Education and Urban Society* 51, no. 1 (2019): 99-119.

staff, family neighborhood, community, district, and cultural characteristics that make up the educational “environment.”¹²

Conclusion

While Prince George’s County and the Fort Washington Area have experienced turbulent times, the new economic hub of National Harbor would seem like it would have an overall positive effect on the surrounding areas. But this couldn’t be further from the truth. The following Chapters will continue to critique National Harbor and show how it’s poor urban planning, lack of government oversight and withholding of public input has caused immense problems for the future of National Harbor. By analyzing programmatic elements such as engagement, movement, commemoration, and innovation we can begin to reintegrate National Harbor back into its context while cultivating its identity.

¹² Guhn, Martin. "Insights from successful and unsuccessful implementations of school reform programs." *Journal of Educational change* 10 (2009): 337-363.

Chapter 2: Environmental Engagement

Introduction

There's a reason why most early American towns were built on waterways, water is an essential for life, a way to transport goods and services, and connect communities together. The Chesapeake Bay watershed is one of the most notorious watersheds in the US, known for its overharvesting of oysters and abundant amounts of fertilizer runoff which led to systematic destruction of a very large ecosystem. The Chesapeake Bay watershed is a drainage basin that is comprised of creeks, streams, and rivers that all flow into the Chesapeake Bay and it encompasses six states; New York, Pennsylvania, West Virginia, Maryland, Delaware, Virginia, and the District of Columbia.¹³ Environmental systems are multifaceted, interconnected webs, and the health of these watersheds are important for a multitude of reasons aside from just environmental impacts; they also affect economic and social wellbeing.¹⁴

The Chesapeake Bay Watershed

Due to its rapid environmental degradation, it was the first estuary in the US to be pursued by Congress for restoration and protection which led to the Chesapeake Bay Agreement of 1983, and subsequently the Chesapeake 2000 agreement and the Chesapeake Bay Watershed Agreement. These agreements set goals to reduce pollution, restore habitats, protect living resources, promote sound land use practices, and emphasize eco-system-based fisheries management.¹⁵

¹³ Haggerty, P. "Chesapeake Bay Watershed Boundary, USA." USGS. Last modified February 19, 2021.

¹⁴ "Healthy Watersheds Protection." EPA. Last modified 2024.

¹⁵ "Our History." Chesapeake Bay Program, Last modified 2024.

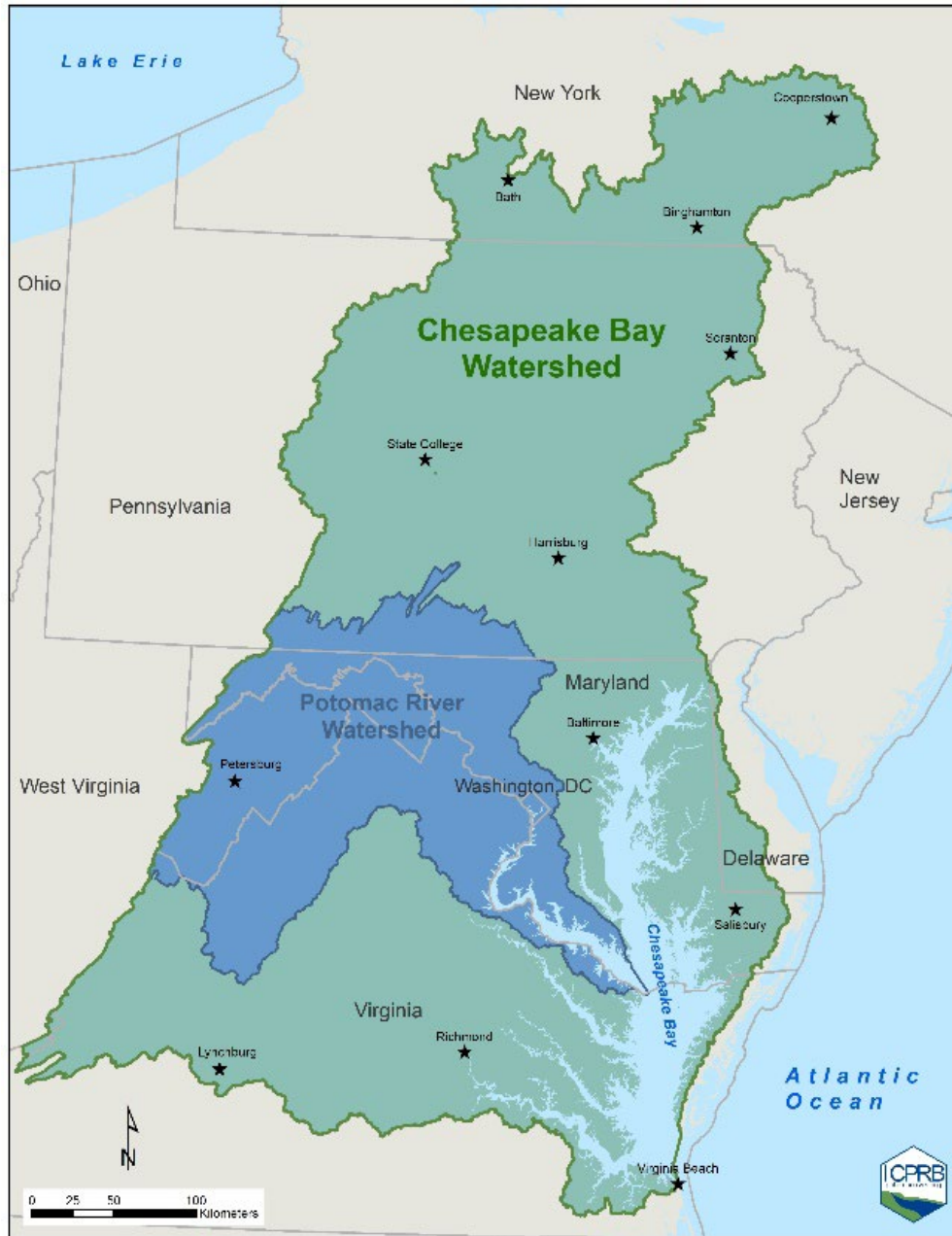


Figure 7: Chesapeake Bay Watershed Map

National Harbor is nestled along the Potomac River which lies within the Potomac River Watershed which in course runs into the Chesapeake Bay. Derived from the Native America village “Patawomeck”, the name Potomac later became the accepted Europeanized name after John Smith’s map in 1608. The tidal waters of Washington, DC were once home

to many native American tribes that used it as a place of commerce and transportation, it is no surprise that early colonizers recognized its importance and eventually seized the land.



Figure 8: John Smith's Map of Virginia¹⁶

The Potomac River is split into four sections: the Upper Potomac, Middle Potomac, Lower Potomac and Tidal Potomac. The Tidal Potomac section is a transition zone where the saline, tidal waters of the Chesapeake Bay meet the Potomac River. The estuary where the Potomac meets the Chesapeake is brackish but transitions to freshwater further north; from Potomac, MD to Quantico, VA it is considered a freshwater tidal river and is home to forested/shrub and emergent wetlands. During the 1900's this section of the Potomac River experienced a cataclysmic failure of environmental stewardship. The combination of sewage overflow, the Blue Plains waste treatment facility, agricultural runoff and sediment runoff from the city contributed to eutrophication of the river. This is when large amount of

¹⁶ "John Smith's Map of Virginia: A Closer Look (U.S. National Park Service)." National Parks Service. Last modified February 10, 2022. <https://www.nps.gov/articles/000/smith-map-of-virginia.htm>.

phosphorus and nitrogen cause algal blooms which in turn deplete the water of oxygen and can kill off fish and other native aquatic species. Through many federal funded programs and grassroots initiatives, the Potomac River's condition has improved from a D to a B over the last 30 years, it has gone from sludge and unsafe swimming conditions to approaching a time in which we may be able to enjoy the river again. As we begin to see improvement and plan for the future, we must also consider other environmental factors caused by climate change such as sea level rise and sea temperature rise.

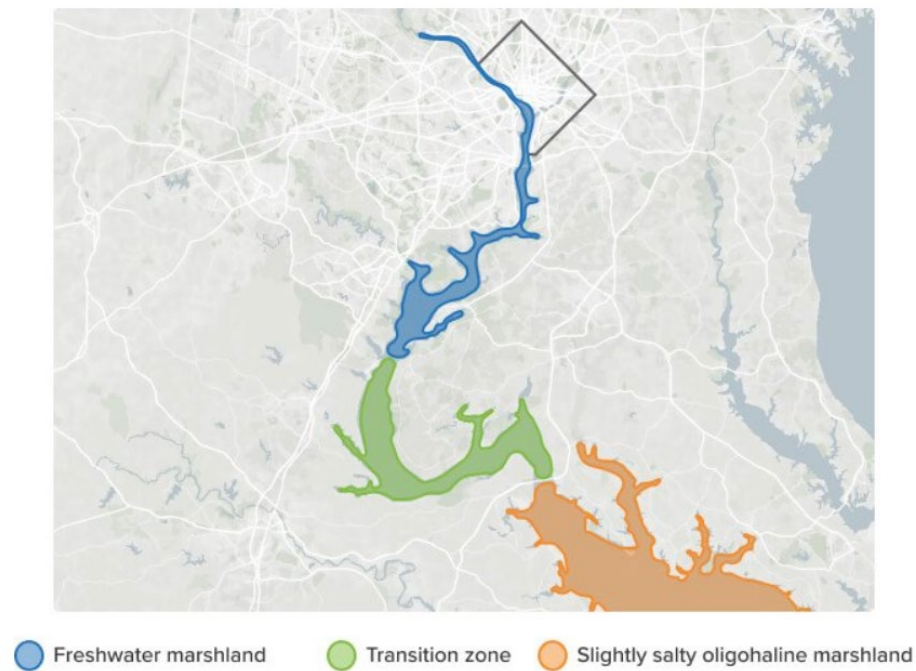


Figure 9: Potomac Watershed Salinity Map ¹⁷

¹⁷ Kean, Rosie. "Rising Waters Threaten the Potomac's Tidal Marshes." Potomac Conservancy, Last modified April 5, 2022. <https://potomac.org/blog/2022/03/potomac-tidal-marshes-climate>.

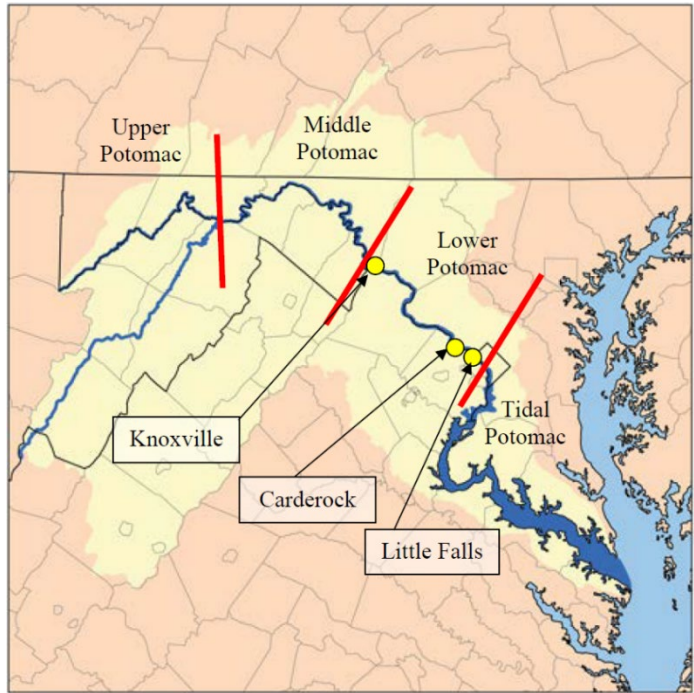


Figure 10: Potomac River Segments¹⁸

Sea Level Rise and Responsive Infrastructure

Sea level rise is an important concern for all bodies of water connected to oceans worldwide. Since the tidal section of the Potomac is affected by sea level rise as well as tributary contributions and storm water runoff, this area is rising at twice the global rate.¹⁹ With the rising waters brings the threat of brackish waters creeping further north towards D.C. which can have adverse effects on the local ecologies native to the freshwater tidal region.

The metropolitan area is susceptible to three types of flooding risks which include riverine, coastal, and interior flooding.²⁰ Climate and ecological change are causing extreme weather

¹⁸ “Potomac River Mainstem.” ICPRB, Last modified January 13, 2022. <https://www.potomacriver.org/focus-areas/aquatic-life/potomac-river-mainstem/attachment/map-4/>.

¹⁹ Kean, Rosie. “Rising Waters Threaten the Potomac’s Tidal Marshes.” Potomac Conservancy, Last modified April 5, 2022. <https://potomac.org/blog/2022/03/potomac-tidal-marshes-climate>.

²⁰ Caffrey, Maria A, Rebecca L Beavers, and Cat Hawkins Hoffman. “Sea Level Rise and Storm Surge Projections for The ...” National Park System, Last modified May 2018.

events to become more common which means hurricanes and heavy rainfall can also contribute to flooding risks. The image below shows increase rainfall events in the northeastern United States.

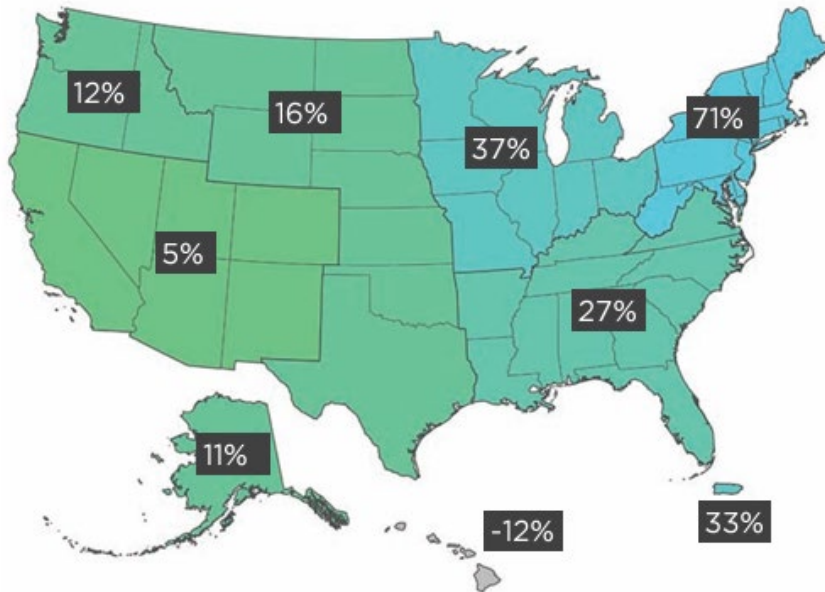


FIGURE 1: Observed change in very heavy precipitation events (defined as the heaviest 1% of all daily events) from 1958 to 2012. The District lies on the divide between the Northeast and the Southeast regions. Source: Walsh et al. 2014a

Figure 11: Rainfall Events US ²¹

The City of Alexandria’s historic waterfront is only two feet above sea level and is very susceptible to flooding so they issued a flood analysis that examines not only historic storm events and tidal backflow but the impact that sea level rise may also have. Since 1900 we have experienced 1 foot in seal level rise, and it is predicted under mid-level emissions scenarios that we will experience another 2 feet in seal level rise by 2100. Extreme scenarios

²¹ Wells, Tommy. Climate Projections and Scenario Development . Last modified September 2013. https://doec.dc.gov/sites/default/files/dc/sites/ddoc/publication/attachments/150828_AREA_Research_Report_Sm_all.pdf.

completed by the NOAA placed this prediction at 11 feet and high to intermediately high scenarios estimate 7-9 feet of sea level rise.²²

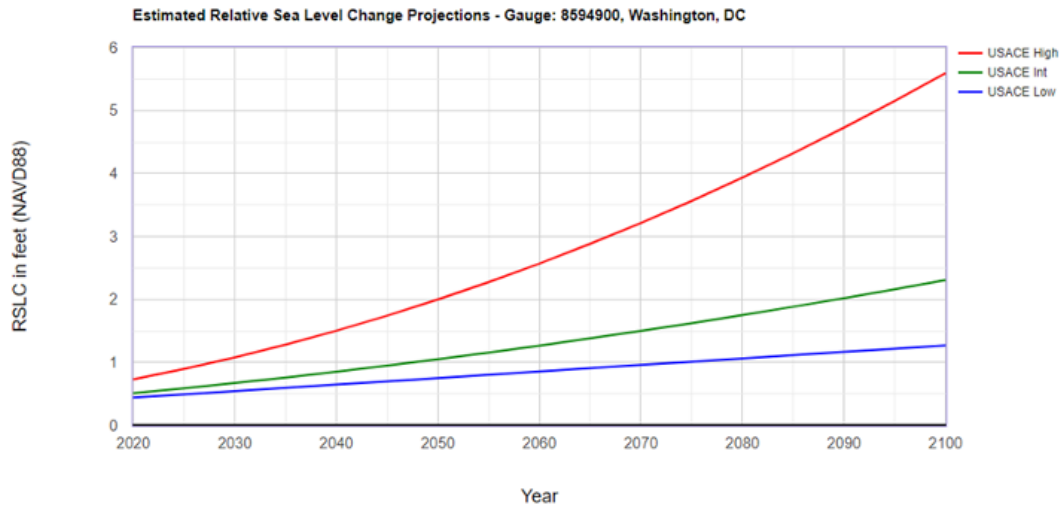


Figure 7 USACE SLR Projections at Washington DC Tide Gauge, 2020-2100

Figure 12: USACE SLR Projections at Washington DC Tide Gauge 202-2100²³

Since Fort Washing is less than a mile down river from Alexandria’s Historic Waterfront area we can utilize this sea level rise analysis. The National Atmospheric and Oceanic Administration (NOAA) evaluates mean higher high water levels which is the 19 year average of the highest high time of each tidal day, and this average in Alexandria is 2.19 feet.

²² Manuszak, J. (2022, May). *Potomac River Flood Frequency Analysis*. City of Alexandria. https://www.alexandriava.gov/sites/default/files/2023-03/TM2_Potomac River Flood Frequency Analysis.pdf

²³ Manuszak, J. (2022, May). *Potomac River Flood Frequency Analysis*. City of Alexandria. https://www.alexandriava.gov/sites/default/files/2023-03/TM2_Potomac River Flood Frequency Analysis.pdf

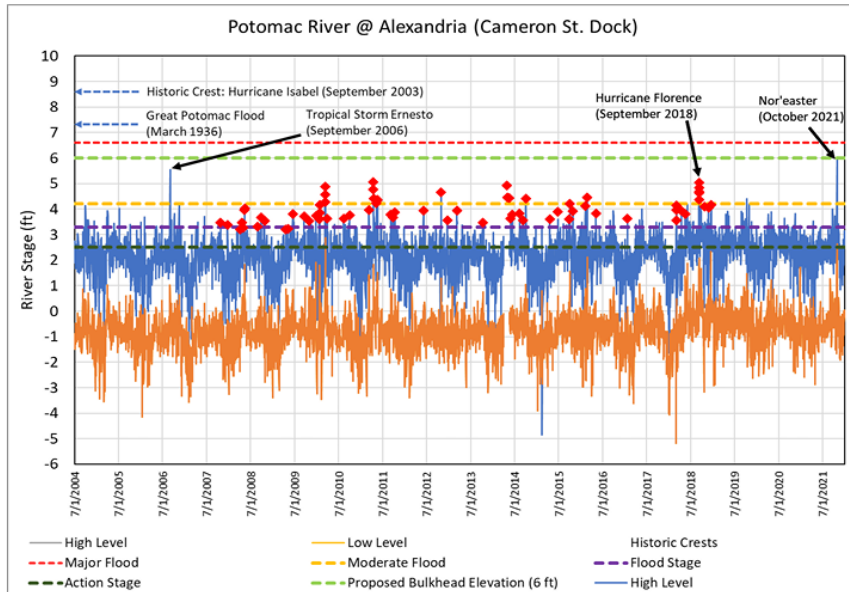


Figure 13: Potomac River Daily High and Low Levels with Proposed 6 foot Bulkhead

When attempting to plan for sea level rise we must also consider tidal backflow flooding which is when the water level in the river exceeds the street elevation of stormwater sewer inlets or manholes.²⁴

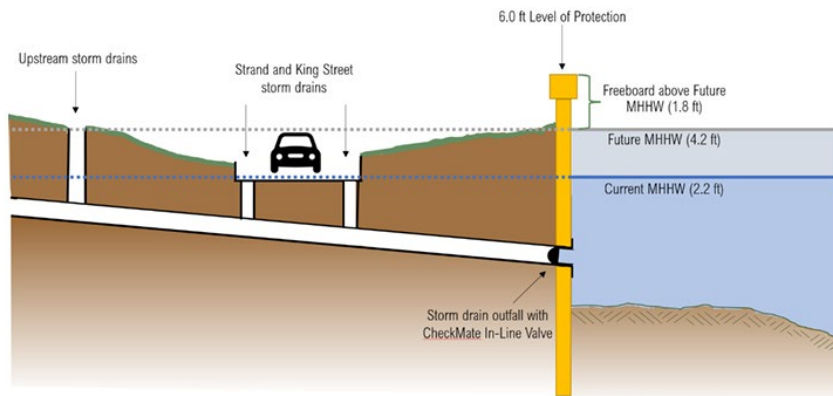


Figure 14: Impacts of Seal Level Rise on Mean Higher High Water

²⁴ Manuszak, J. (2022, May). *Potomac River Flood Frequency Analysis*. City of Alexandria. [https://www.alexandriava.gov/sites/default/files/2023-03/TM2_Potomac River Flood Frequency Analysis.pdf](https://www.alexandriava.gov/sites/default/files/2023-03/TM2_Potomac%20River%20Flood%20Frequency%20Analysis.pdf)

The economic risk of sea level rise is also something that should be considered when planning for new infrastructure. According to a study completed by the National Parks Service, 1 meter of sea level rise would put \$40 billion of National Parks assets at risk within the DC area. Another study evaluated additional long-term risks of sea level rise and estimated \$4.6 billion at risk in property values that are less than 6 feet above mean high tide.²⁵

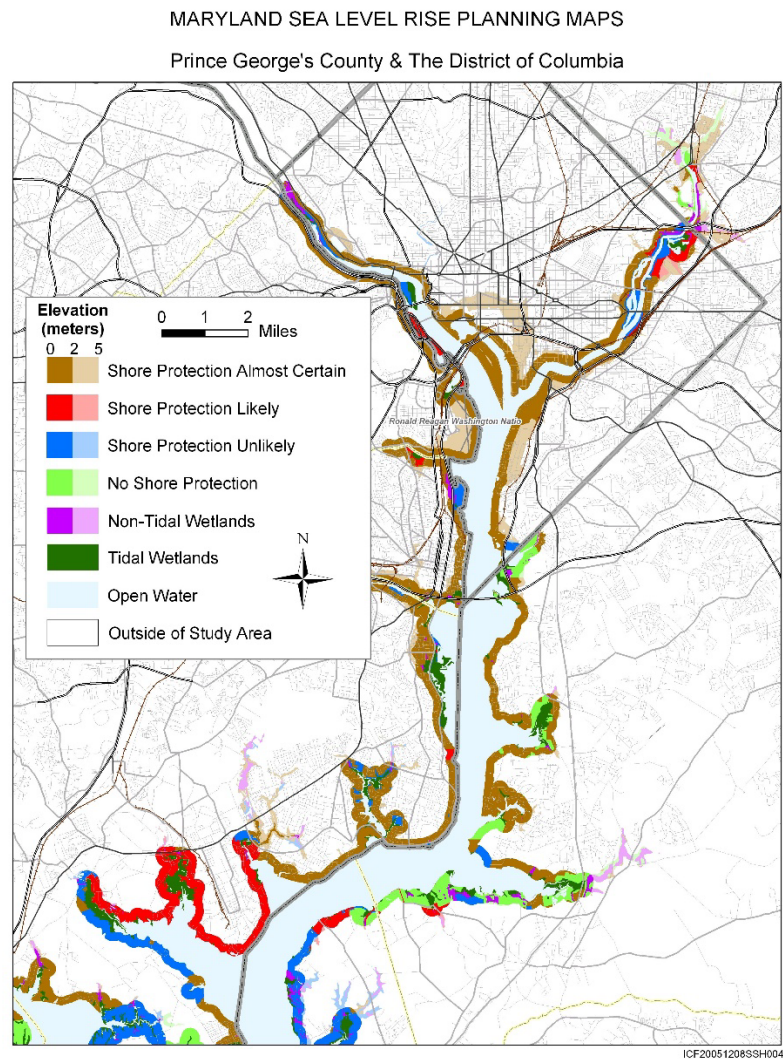


Figure 15: PG County Sea Level Rise Planning Map

²⁵ Strauss, Benjamin H., Scott A. Kulp, D. J. Rasmussen, and Anders Levermann. "Unprecedented threats to cities from multi-century sea level rise." *Environmental Research Letters* 16, no. 11 (2021): 114015.

When considering infrastructure strategies to combat the rising sea level we should consider how ecology, hydrology and wildlife will be affected. Learning from past mistakes of poor wetland development, we should utilize more nature-based strategies to work with the changing topography and hydrology rather than working against it. Innovative strategies for coastal infrastructure in tidal rivers include modular floating structures that adapt to changing water levels, tidal energy harvesting for renewable power, natural shoreline stabilization using features like mangroves, adaptive flood management with green infrastructure and barriers, smart monitoring systems, multi-use infrastructure designs and community engagement for sustainable development.²⁶

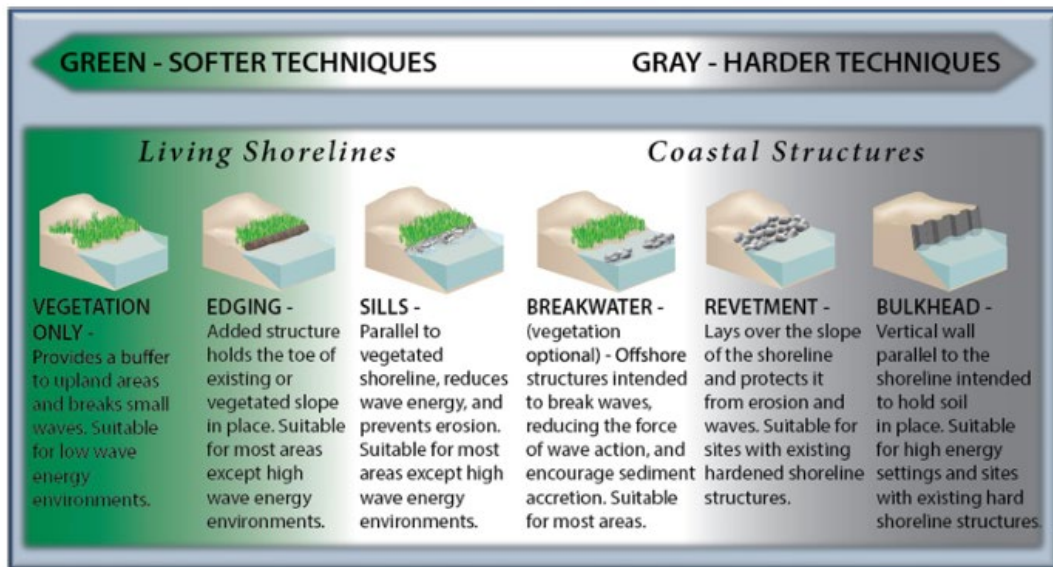


Figure 1: A continuum of green (soft) to gray (hard) shoreline stabilization techniques. Source: This continuum is based on the more detailed continuum in the Systems Approach to Geomorphic Engineering (SAGE) Natural and Structural Measures for Shoreline Stabilization brochure (SAGE 2015).

Figure 16: Living Shoreline Techniques²⁷

²⁶ NOAA, LS. "Guidance for considering the use of living shorelines." (2015): 1-36.

²⁷ NOAA, LS. "Guidance for considering the use of living shorelines." (2015): 1-36.

Cleaning up the Potomac

Revitalizing the Potomac River demands innovative tactics that tackle diverse pollution sources and environmental deterioration. One strategy involves deploying green infrastructure solutions such as constructed wetlands and bioretention basins to intercept and treat stormwater runoff before it enters the river. These nature-based filtration systems play a critical role in curbing nutrient overflow, sediment buildup and harmful substance infiltration, ultimately enhancing water quality and reviving aquatic ecosystems.²⁸

Restoring riparian buffers along the riverbanks serves as natural shield against erosion, soil destabilization and offers a habitat for indigenous plants and wildlife. Community involvement and educational outreach initiatives play a pivotal role in nurturing stewardship and awareness regarding the significance of conserving the Potomac River.

Alexandria is home to Dyke Marsh which is a heavily studied wetland area and one study they heavily examined the health of the wetland, its importance and if it could be restored. The study identifies Dyke Marsh and similar tidal wetlands in the Chesapeake Bay watershed as crucial sites for denitrification, playing a vital role in buffering the increasing nitrogen load in the estuary. They are also important in preventing anoxic conditions in the Potomac River and Chesapeake Bay due to eutrophication. However, historic human alterations to freshwater marshes may have lasting impacts, affecting their ability to adjust to tidal dynamics and leading to marsh loss over time. The study predicts that Dyke Marsh is currently in advanced stages of failure, with erosion stripping sediment from the marsh and fragmenting tidal creek networks. Without intervention to restore the balance between marsh

²⁸ Environmental Protection Agency. (n.d.). *Green Infrastructure Design and Implementation*. EPA. <https://www.epa.gov/green-infrastructure/green-infrastructure-design-and-implementation#Design%20Tools>

and tide, Dyke Marsh is likely to continue degrading and fragmenting, potentially disappearing by 2035.²⁹

Eminent Domain and Public Trust Doctrine

The Public Trust Doctrine serves as a legal principle ensuring that the state's natural resources, especially navigable waters and submerged lands are held in trust for the benefit of the public. This doctrine is rooted in English common law and mandates that these resources be preserved and protect for the enjoyment of all residents, both now and in the future. This means that the state has the responsibility to safeguard these valuable assets for everyone's use, whether its for fishing, recreation or maintain the health of aquatic ecosystems.³⁰

By considering the Public Trust Doctrine, project planners can ensure that their initiatives align with state regulations and community interests, promoting sustainable development while safeguarding the ecological integrity of the shoreline. This doctrine influences how decisions are made regarding waterfront development, conservation efforts and public access to waterways in Maryland. When considering the scope of this thesis project it could provide the legal framework for protection of waterways for public use and ensure the Potomac River is preserved as a natural resource for future generations.

Conclusion

By integrating these innovative strategies into coastal infrastructure development projects, we can enhance resilience, sustainability, and functionality in tidal river environments

²⁹ Litwin, Ronald J., Joseph P. Smoot, Milan J. Pavich, Erik Oberg, Brent Steury, Ben Helwig, Helaine W. Markewich, Vincent L. Santucci, and Geoffrey Sanders. "Rates and probable causes of freshwater tidal marsh failure, Potomac River estuary, northern Virginia, USA." *Wetlands* 33 (2013): 1037-1061.

³⁰ Messer, Emily. "Waterfront Property Rights: The Potential Impact of Government Projects." (2018).

while minimizing negative impacts on natural ecosystems and local communities. While giant strides have been made to improve the Potomac, Anacostia and Chesapeake watersheds, the continued threat of climate change means we must continue to improve the health of the river while combating future issues of rising sea levels, rising water temperatures and continued erosion and loss of habitat. Wetlands are one of the most crucial natural ecosystems we have. To protect the natural ecosystems as well as the built environment, preserving and establishing additional wetlands is key. When we improve the natural experience and environmental conditions, we can improve land values, thus improving other social systems and local economies. By implementing an engaging and environmentally advocating infrastructure project we can create harmony within the landscape and the built environment.

Chapter 3: Commemoration

Introduction

The land surrounding National Harbor is rich in culture and history but unfortunately it isn't as accessible as compared to similar sites throughout the DMV area (DC, Maryland, Virginia). Lack of access, poor infrastructure, and failure to accurately represent the history and culture of this land are a few of the common problems in this area.

Parallel Infrastructure

The reciprocal coastline of National Harbor, MD lies in Alexandria, VA which is lined with the George Washington Memorial Parkway and the Mount Vernon Trail. The parkway is not only a scenic byway, but also a method of connecting historical sites while protecting wildlife and their surrounding environments. This project stems from the McMillan plan which was created in 1902 by Senator James McMillan and included famous architects such as Frederick Law Olmstead Jr. It was a comprehensive plan to create a monumental park system in which visitors could discover history while enjoying nature's beauty.³¹



³¹ Davis, Kim. "Exploring 50 Years of the Mount Vernon Trail." *Alexandria Times*. Last modified June 2, 2022. Accessed April 10, 2024. <https://alextimes.com/2022/06/exploring-50-years-of-the-mount-vernon-trail/>.

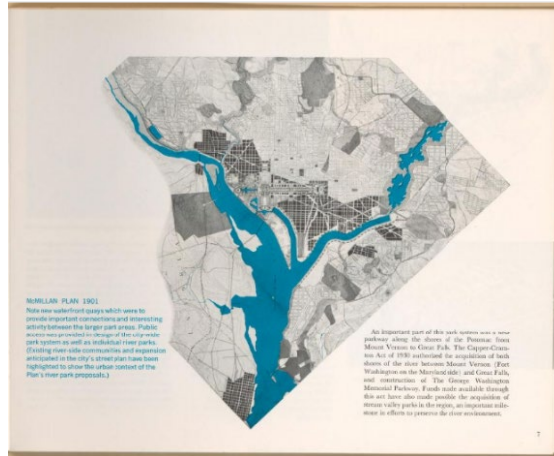


Figure 17: L'Enfant Plan of 1791 and McMillan Plan of 1901³²

The Mount Vernon Trail which runs concurrently with the parkway from George Washington's Estate, Mount Vernon, north 18 miles, and reconnects to the Potomac Heritage Trail, Memorial Bridge, and Arlington National Cemetery. This trail was pieced together over many years, but the most remarkable section was the first section to be completed. It was spear headed by two women of Alexandria civic groups, Ellen Pickering and Barbara Lynch, who lobbied for a trail due to unsafe conditions for bikers along the length of the parkway. They acquired 700 signatures on a petition to build a trail from Belle Heaven Park to Gravelly Point Park but the National Park Service shot down the petition due to lack of funding as well as having no precedent of a trail through park land. However, they did agree to provide them with the gravel needed and a right of way area if the two women could coordinate volunteers to implement the work. The project took 400 volunteers and 4,200 tons of gravel over several cold winter months, but they were successful in creating the first 4.5 mile stretch of the mount Vernon trail. These two women were fierce advocates, not only for the mount Vernon trail, but for the city of Alexandria and the Old Town historic district.

³² United States National Capital Planning Commission. *Proposed Urban Design Concepts*. [Washington U.S. Govt. Print. Off, 1972] Map. <https://www.loc.gov/item/73696018/>.

They combated large private institutions from redeveloping sections of old town so that they could preserve the natural views and historic culture of the town. This is vastly different from the redevelopment of National Harbor. Instead of Prince George’s County protecting the harbor and allowing the community to use this area as a public space that would connect various historic site and trails in the area, they turned their backs on the community to create a privatized economic hub closed off to the nearby public.

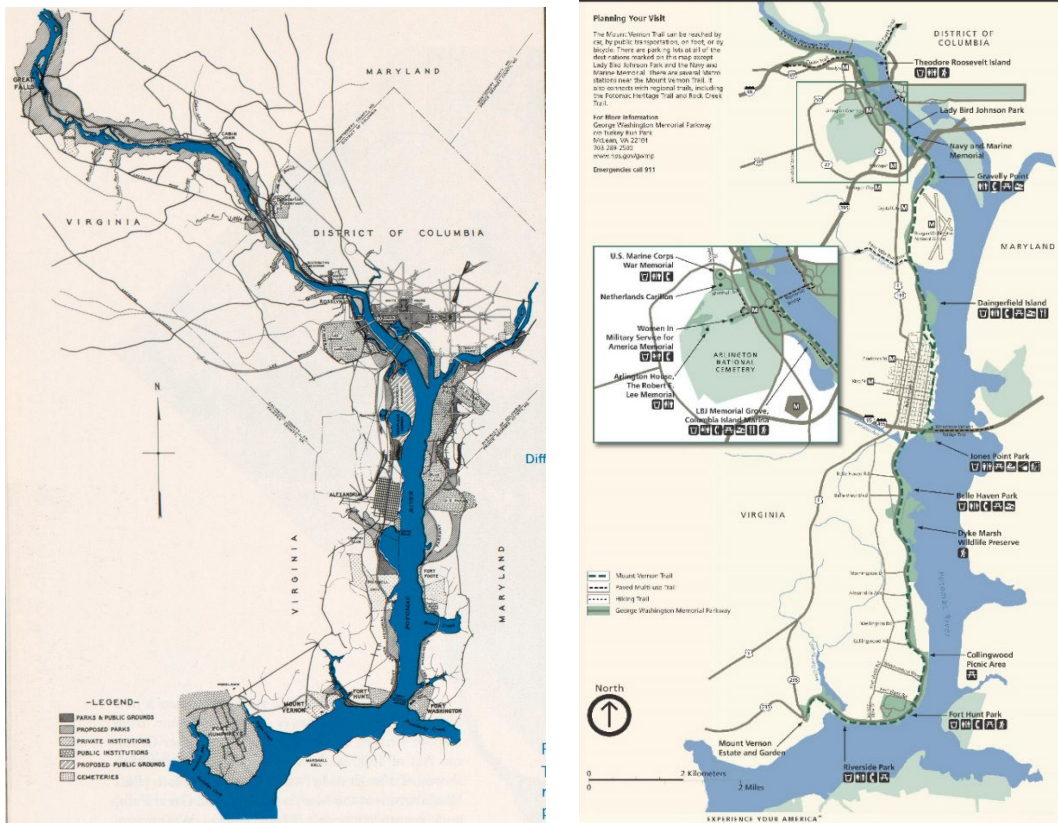


Figure 18

Potomac River Parks Plan 1928³³ & Current Mount Vernon Trail Map

Ethos of Testimony

There’s a concept called ethos of testimony which is an aesthetic derived from the Holocaust, meaning to create a record for those without a voice or for those that may have

³³ United States National Capital Planning Commission. *Proposed Urban Design Concepts*. [Washington U.S. Govt. Print. Off, 1972] Map. <https://www.loc.gov/item/73696018/>.

died and been forgotten if not for the narrative recorded by those who survived.³⁴ Narratives are often used in the field of architecture to tell a story of the site or context in which the designed structure lies. We are taught as students of architecture to carefully understand and analyze the site before beginning the design process. By crafting these narratives to have our projects accepted we may unknowingly fall into this trap of creating representation as a substitute for action.

While National Harbor attempted to acknowledge the history of the site, through a small exhibit tucked away in Tanger Outlets and placards placed along the trail leading away from National Harbor, they have failed to provide an engaging narrative for visitors. It appears Peterson Companies, the developer of National Harbor, has used their power to do the bare minimum to acknowledge the testimony of the site. They were able to successfully remove its historic designation and substitute any large-scale recognition for a measly display of artifacts found on site and in return they have used this narrative to sell the idea of an economic hub to Prince George's County. They have violated the ethos of testimony by creating a retro-topia, or a model for a new city based on a misunderstanding of the past. Instead of commodifying the testimonies of the past, how can we let visitors see a narrative that inspires something better? Since people read landscapes more than they read books, or in this case a placard in an ill-suited location, there should be something within the built environment that is well placed, easily engageable and realistically conveys the ethos of testimony.

³⁴ Casey, John A. "Out on the Crab Grass Frontier." John A Casey Jr, Last modified March 21, 2019. <https://johnacaseyjr.com/2019/03/27/out-on-the-crab-grass-frontier/>.

Equitable Communities

Combining the commemoration of black history with the strategies of “Creating Equitable Communities” presents a unique opportunity to honor the contributions of black communities while fostering inclusive and equitable urban environments. One approach is to integrate commemorative elements into architectural designs and urban spaces such as monuments, memorials and cultural landmarks that celebrate Black heritage and resilience. These commemorative spaces can serve as focal points for education, reflection, and community engagement, promoting greater awareness and appreciation of black history and culture.³⁵

Additionally, architects can incorporate principles of equity, diversity, and inclusion into their design process to ensure that urban developments are accessible and welcoming to all residents, regardless of race or socioeconomic status. This involves prioritizing community input and participation, conducting inclusive outreach efforts, and designing spaces that address the needs and preferences of diverse populations. By incorporating elements such as affordable housing, community centers and public transportation infrastructure, architects can help create environments that promote social cohesion and economic opportunity for Black communities.

Architects can leverage their expertise to advocate for policies and initiatives that address systemic inequalities and promote social justice within the built environment. This may involve collaborating with community organizations, government agencies and other stakeholders to develop strategies for equitable development, affordable housing and community revitalization. By advocating for policies that prioritize equitable access to resources and opportunities, architects can help create more inclusive and resilient

³⁵ Asal, Elaine, Sabrina Mason, Sophie Morley, Allie O’Neil, and Genevieve Will. *Architect’s Role in Creating Equitable Communities*. The American Institute of Architects, September 2022. Last modified September 2022. Accessed February 8, 2024.

communities that honor and celebrate black history while advancing social and economic equity for all residents.³⁶

Implementation

Implementing black commemorative design involves incorporating architectural elements and strategies that celebrate the history, culture, and contributions of Black communities. Some architectural strategies for this purpose include creating monuments, memorials, cultural centers, and museums dedicated to Black history and heritage. These structures serve as focal points for reflection, education, and community gathering, showcasing artifacts, artworks, and interactive exhibits that celebrate the achievements and resilience of Black individuals and communities.

Additionally, integrating public art installations, such as murals, sculptures, and street art, that depict themes related to Black history and culture can beautify urban spaces while promoting dialogue and awareness about Black experiences (Smithsonian Institution). Preserving and repurposing historic buildings and sites associated with Black history through adaptive reuse projects can also transform former schools, churches, and community centers into cultural landmarks and gathering spaces that honor the legacy of Black leaders and activists.³⁷

Engaging local residents, community leaders, and stakeholders in the design process ensures that commemorative projects reflect the needs and aspirations of the Black

³⁶ Asal, Elaine, Sabrina Mason, Sophie Morley, Allie O’Neil, and Genevieve Will. *Architect’s Role in Creating Equitable Communities*. The American Institute of Architects, September 2022. Last modified September 2022. Accessed February 8, 2024.

³⁷ U.S. Department of the Interior. (n.d.). *NPS ethnography: African American Heritage & Ethnography*. National Parks Service. <https://www.nps.gov/ethnography/aah/aaheritage/index.htm>

community. Participatory design approaches foster a sense of ownership and pride in commemorative spaces, making them inclusive and meaningful.³⁸

Conclusion

The land surrounding National Harbor holds a rich cultural and historical significance, yet its accessibility and representation fall short in comparison to similar sites in the DMV area. The development of National Harbor, while privatized and economically successful, lacks the inclusive and commemorative ethos seen in projects such as the Mount Vernon Trail. The Mount Vernon Trail's creation, spearheaded by Ellen Pickering and Barbara Lynch, illustrates the power of community-led initiatives in creating spaces that honor history, connect communities, and promote equitable access to public resources.

By integrating black commemorative design principles into architectural projects, we can create spaces that celebrate the contributions and resilience of Black communities. Monuments, memorials, cultural centers, and public art installations can serve as focal points for education, reflection, and community engagement, fostering greater awareness and appreciation of Black history and culture.

Preserving and repurposing historic buildings associated with Black history through adaptive reuse projects can transform them into meaningful cultural landmarks and gathering spaces. Engaging local communities in the design process is essential to ensuring that commemorative projects authentically reflect the needs and aspirations of the Black community. Participatory design approaches empower residents to shape their built environment, fostering a sense of ownership and pride in commemorative spaces. By prioritizing equity, diversity, and inclusion in architectural design and urban planning, we can

³⁸ Bowdler, Janis, Henry Cisneros, Jeffrey Lubell, and Patrick L. Phillips. *Building Equitable Cities: How to Drive Economic Mobility and Regional Growth*. 2017.

create more inclusive and resilient communities that honor and celebrate Black history while advancing social and economic equity for all residents.

Chapter 4: Movement in Cities

Introduction

At its inception, National Harbor was created as a planned and branded community. The designs are very clear, this area wasn't meant to intermingle with its surroundings, it was designed as a destination, to have its own identity and entertain its guests. The company that designed the master plan for National Harbor, LandDesign, says they intended to activate the public realm, meet evolving demands, and create a timeless brand identity.³⁹ While they may have met these goals, there are many missed opportunities for creating an area that is well integrated with its surrounding communities. This is commonly referred to as weaving the fabric of the city, where the built environment is a complex web of interwoven parts. National Harbor's iron fences and dense forests create a barrier that does not allow for any porosity other than vehicular traffic. This chapter will explore several concepts that should be considered when planning a community within a moderately dense urban area. These interventions include both public and privately owned spaces such as pedestrian and bike paths, mass transit, and privately owned-public squares.

Lacking Connectivity

Amanda Hurley who is an editor for Bloomberg Green and has contributed to many architectural articles critiquing buildings and urban planning projects in DC, wrote a critique of National Harbor's presence within the DC metro area and boils the issues down to its "woeful lack of connectivity". She compares National Harbor to other local privately planned spaces and other public spaces such as Barcelona. In these comparisons she addresses how it has an essence of their design but fails short in every way. She describes National Harbor as

³⁹ "National Harbor: Laying the Groundwork for Legacy." *LandDesign*. Last modified July 21, 2023. Accessed February 15, 2024

an archipelago that only has one way in and out, rather than a necklace, such as Boston's necklace of greenspaces.⁴⁰

People have been moving between communities since the beginning of mankind. We started by walking, then by boat, horseback and eventually by bike, train, car and plane and now we can even hover from one place to the next. With each new invention our towns and modes between them shifted. And we even witnessed another shift with the onset of the covid 19 pandemic, the modes in which communities interacted shifted, and architecture and planning had to shift with them very rapidly.

As Nikos Salingaros discusses in his paper "Connecting a Fractal City", he constitutes what a fractal city is and how the introduction of the automobile and large populations interrupted these fractal properties in the modern urban fabric. Fractal is defined from a mathematical standpoint as something that possesses structure on a hierarchy of scales, coherence and self-similarity and has components at all sizes, from the size of the city down to the microstructure of building materials. He concludes by stressing that we may have false ideas of modernity and need to look at successful historic cities that are fractal and able to reconnect the urban fabric through the sum of its smaller parts.⁴¹

The Paradigm Shift

In the same way cars created a paradigm shift in city planning, we are needing another paradigm shift towards pedestrian oriented design and development. As the book "Connecting Places Connecting People" suggests, car-based planning has led to a disconnect

⁴⁰ Hurley, Amanda Kolson. "National Harbor Is a Private Urban Island Designed for Fun-If You Can Get There." *Washington City Paper*. Last modified August 29, 2020. Accessed February 15, 2024.

⁴¹ Salingaros, Nikos A. "Connecting the fractal city." *5th Biennial of towns and town planners in Europe, Barcelona* (2003).

and we should be refocusing on people and places rather than the movement of vehicles.⁴² In another paper focusing on DC, Paul Knox mentions this epochal change within the new urban setting at the time (1990's) because of contemporary capitalism such as: private master planned communities, high-tech corridors, mixed use development, gentrified neighborhoods and historic buildings. He highlights the transfer from the "fordist" industrial capitalism to advanced capitalism and then reiterates how this new capitalism is reinforcing broad fragmentation and polarization of urban spaces.⁴³

Aside from shifting away from car-based planning we also need to implement additional techniques to make this shift toward pedestrian oriented design and eliminate barriers between communities. In a case study by a thesis student at Hammons University, Alexander Reeves studied Cleveland's disconnected neighborhoods, split by public infrastructure and a disengaged waterway. He discusses the issues that infrastructure plays with connecting cities while simultaneously disconnecting areas which then causes barriers for urban growth and marginalizing nearby cities. Reeves concludes that community involvement, a multifaceted approach, and reprogramming otherwise obsolete spaces can create a "Beta" space that eliminates barriers between communities.⁴⁴ Connecting with these interstitial spaces can create many positive changes such as preventing existing problems, improve the compactness of existing cities and increase the quality of life. These in-between spaces create a flow of goods, people and ideas and without public infrastructure there is a huge gap in the urban fabric. Cities should not be viewed as static objects but they are the product of micro and macro changes.⁴⁵

⁴² Tiwari, Reena. *Connecting places, connecting people: a paradigm for urban living in the 21st century*. Routledge, 2017.

⁴³ Knox, Paul L. "The restless urban landscape: economic and sociocultural change and the transformation of metropolitan Washington, DC." *Annals of the Association of American Geographers* 81, no. 2 (1991): 181-209.

⁴⁴ Reeves, Alexander. "[Beta] Space: Reprogramming Urban Infrastructure to Reconnect Society," 2016.

⁴⁵ Rembeza, Magdalena, and Aleksandra Sas-Bojarska. "The changing nature of in-between spaces in the transformation process of cities." *Urban Planning* 7, no. 1 (2022): 32-43.

Adding Public Transit

Now that we've reoriented design towards the pedestrian and the in between spaces of urban design, how do we bring people into National Harbor as a tourist destination if not for vehicular modes? There has been a lot of talk about extending the DC Metro Blue Line down into National Harbor and connecting it in a loop back into DC. This additional would be increasingly beneficial to the economic development of National Harbor but without connection to the surrounding neighborhoods only a select population will be able to benefit from this change. Although metro stations create accessibility for low-moderate income households, they also create high housing costs which can displace current residents and prevent future low-income households from moving in the area. Dense, mixed-income communities are ideal for these transit areas, but affordable housing is not often admired by developers. Transit-oriented development and affordable housing in Prince George's County can be limited in these areas due to developers not receiving economic benefit, thus involving government subsidization and creating a stigma against affordable housing.⁴⁶ Since transit oriented development is a tool for economic growth we should be careful when designing and planning a city with public transit. Transit Oriented Developments should use their efforts towards attracting new firms, rather than relocating firms from within the same region.⁴⁷

⁴⁶ Smith, Jerah A. *Transit-Oriented Development and Affordable Housing in Prince George's County: A Case Study-Based Approach*. Partnership for Action Learning in Sustainability (PALS), 2018.

⁴⁷ Iseki, Hiroyuki, and Robert P. Jones. "Analysis of firm location and relocation in relation to Maryland and Washington, DC metro rail stations." *Research in Transportation Economics* 67 (2018): 29-43.

Pedestrian Oriented Design

Implementing pedestrian-oriented design in areas like Fort Washington and Fort Hunt involves prioritizing the needs and safety of pedestrians over vehicular traffic. Strategies for pedestrian-oriented design include establishing well-connected sidewalk networks, designated pedestrian plazas and crossings, traffic calming measures, mixed-use development patterns, public transit integration, and pedestrian amenities.⁴⁸ Comparing movement between Fort Washington and Fort Hunt, a compelling argument for pedestrian-oriented design emerges based on several factors. Both areas have historical significance, with Fort Washington serving as a historic fort and Fort Hunt as a former military base.⁴⁹ Prioritizing pedestrian infrastructure in these areas can help preserve and showcase their historical heritage by allowing visitors to explore them on foot and engage with their cultural significance. Additionally, both areas are situated in scenic natural environments along the Potomac River, making them ideal for pedestrian-oriented design. Enhancing pedestrian access and connectivity allows residents and visitors to enjoy the natural beauty of these areas while promoting environmental sustainability by reducing reliance on cars.⁵⁰

Furthermore, pedestrian-oriented design fosters community connectivity by creating walkable neighborhoods where residents can easily access local amenities, parks, and recreational facilities on foot. This strengthens social bonds, promotes active lifestyles, and reduces dependence on cars for everyday activities.⁵¹ Both Fort Washington and Fort Hunt attract tourists and outdoor enthusiasts seeking opportunities for hiking, biking, and sightseeing. Pedestrian-oriented design supports tourism and recreation by providing safe and

⁴⁸ Ink, S. (2017, November 13). *Urban Street Design Guide*. National Association of City Transportation Officials. <https://nacto.org/publication/urban-street-design-guide/>

⁴⁹ U.S. Department of the Interior. (n.d.-a). *History & culture*. National Parks Service. <https://www.nps.gov/fowa/learn/historyculture/index.htm>

⁵⁰ U.S. Department of the Interior. (n.d.-a). *History & culture*. National Parks Service. <https://www.nps.gov/fowa/learn/historyculture/index.htm>

⁵¹ Bowdler, Janis, Henry Cisneros, Jeffrey Lubell, and Patrick L. Phillips. *Building Equitable Cities: How to Drive Economic Mobility and Regional Growth*. 2017.

accessible pedestrian pathways that allow visitors to explore the area's attractions and natural beauty at their own pace. In summary, pedestrian-oriented design makes sense in Fort Washington and Fort Hunt due to their historical significance, natural environment, community connectivity, and tourism/recreation potential. Prioritizing pedestrian infrastructure and amenities in these areas enhances the quality of life for residents, preserves their cultural heritage, and promotes sustainable transportation options for visitors.

Conclusion

The chapter explores the challenges and opportunities of movement in cities, using National Harbor as a case study. Initially planned as a branded community, National Harbor prioritized a distinct identity and entertainment, but lacked integration with surrounding communities, hindering connectivity and community cohesion. Critiques by urban planning experts like Amanda Hurley emphasize the area's "woeful lack of connectivity," likening it to an archipelago with limited access points. This lack of connectivity contrasts sharply with the paradigm shift needed towards pedestrian-oriented design, moving away from car-centric planning to prioritize people and places. Scholars like Nikos Salingaros advocate for a return to fractal city principles, emphasizing the importance of smaller-scale interventions to reconnect urban fabrics.

As cities evolve, the need for accessible public transit becomes paramount. Suggestions to extend the DC Metro Blue Line to National Harbor aim to enhance economic development but may exacerbate issues of affordability and displacement. Transit-oriented development presents an opportunity for economic growth but requires careful planning to mitigate adverse effects on housing affordability and community cohesion.

Transitioning towards pedestrian-oriented design entails prioritizing pedestrians over vehicular traffic, establishing well-connected sidewalk networks, pedestrian plazas, and public transit integration. Comparing movement between areas like Fort Washington and Fort

Hunt underscores the benefits of pedestrian-oriented design, preserving historical significance, enhancing community connectivity, and promoting sustainable transportation options. In conclusion, prioritizing pedestrian infrastructure and amenities not only enhances the quality of life for residents but also preserves cultural heritage and fosters tourism and recreation potential in urban areas.

Chapter 5: Program

The scope of this thesis will explore several different scales of engagement, ranging from the overall infrastructure that intersects the urban landscape and riparian edge while providing a connection with the built environment. Each of these themes will consist of programmatic elements on a macro and micro scale. The infrastructure on a macro scale will utilize environmentally sustainable strategies to promote movement through the entirety of the project. These strategies will adapt to the local conditions which have been identified as lowland residential, bluff residential, lowland park, park bluff, commercial lowland, commercial seawall and inland low threat areas. While some of these conditions may have similar programs, the strategies or implementation of the program may differ depending on the site, meaning that the infrastructure at a lowland residential site may employ different strategies than the commercial seawall in order to create the same programmatic elements.

Zones to Concept Program

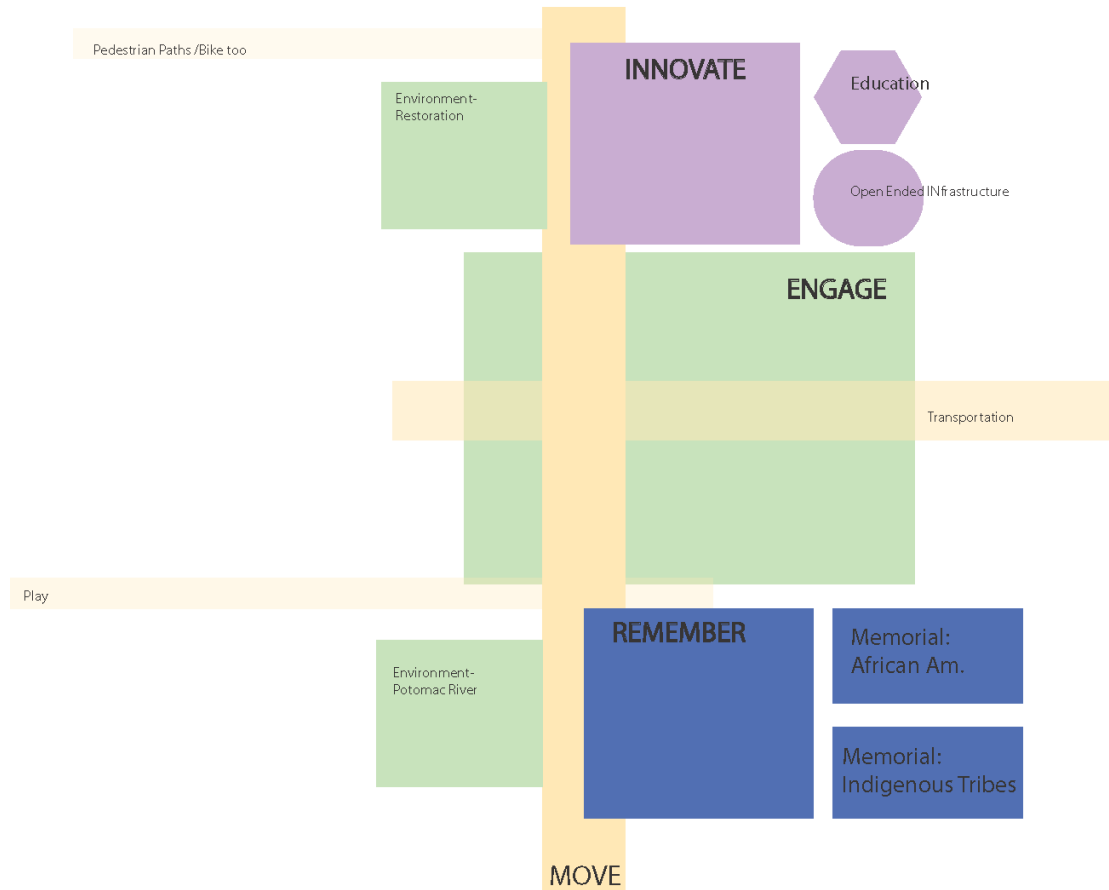


Figure 19: Programmatic Diagram

This diagram highlights the programmatic elements of this thesis project in a simple, conceptual way. There will be areas of engagement whether that is with the environment or the history of the area and this is intersected by the infrastructure that will connect the selected sites with its surrounding communities. There will be interstitial spaces created by these intersections which are opportunities for additional programs such as educational nature facilities, memorials to indigenous tribes or the slaves that worked the land. The program goals are to connect environments, people and communities while protecting and advocating

for these groups and lastly engage these communities with each other through nature based solutions.

Program in Tabular and Graphic Format

Table 1: Program in Tabular Format

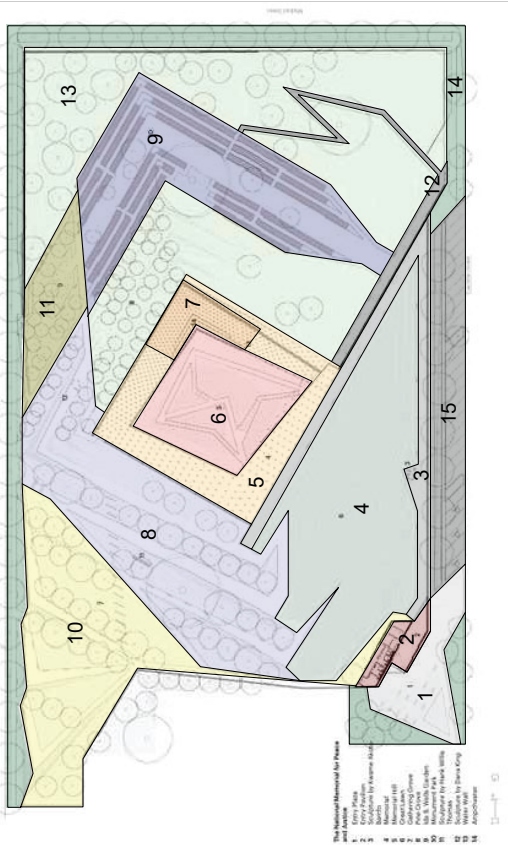
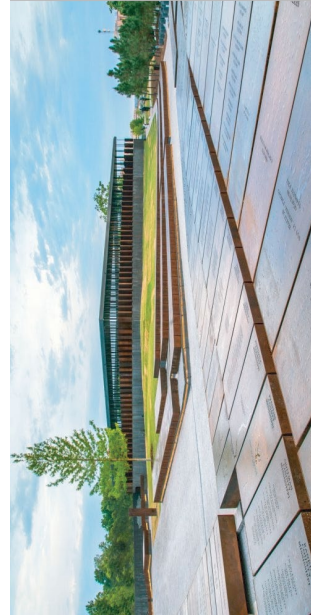
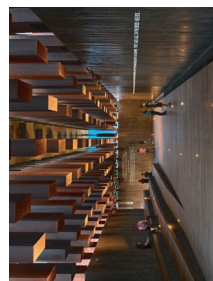
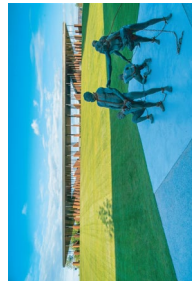
| Program | | | | |
|---|--------|----------|------------------|--|
| Description | Sqft | quantity | sub-total | acres |
| INFRASTRUCTURE | | | | |
| Circulation | | | | |
| movement | 316800 | 1 | 316800 | |
| historical zones (3) | 21,120 | 3 | 63,360 | living sea walls, shorelines, boardwalks, wetlands, (5 miles) |
| environmental zones (3) | 21,120 | 3 | 63,360 | circulation brings you through historical area (1 mile total) |
| zones of rest (6) | 240 | 6 | 1,440 | circulation brings you through area with environmental engagement (1 mile total) |
| fitting into existing neighborhoods | | | | ? Maybe this goes into pavilions but could be a bench |
| Sub-total | | | 444,960 | 10 Trail would cover 7 miles of Maryland coastline, using 12' wide for path = roughly 10 acres |
| ARCHITECTURE | | | | |
| Pavilions | | | | |
| promenade | 360 | | | some pavilions may be on land and others on the water |
| Shaded areas for rest | 600 | | | 12 x 30' |
| bathrooms | 400 | | | 30 x 20' |
| emergency services | 25 | | | |
| ways to engage with environment/history | 100 | | | |
| Sub-total | 1,485 | 3 | 4,455 | |
| Community Site | | | | |
| promenade | 600 | | | South Pointe Location |
| welcome area? | 500 | | | 12 x 50' |
| circulation | 1,000 | | | 20 x 25' |
| interactive Educational nature space | 2,000 | | | |
| Historic/ Commemorative space | 2,000 | | | |
| public space with open ended uses | 2,000 | | | |
| interactive art installation | 1,000 | | | in lieu of childrens park |
| bathrooms | 800 | | | |
| sports playing fields | 2,000 | | | or outdoor open spaces? |
| boat rentals/swimming areas? | | | | to show off health of the river- safe for human use |
| staff area | 500 | | | |
| cafe/bar | 1,000 | | | |
| Sub-total | 13,400 | | | |
| LANDSCAPE | | | | |
| riparian buffer zones | 50 | 18,480 | 924,000 | 21 50' deep / 3.5 miles along N Broad Creek area |
| wet and remediation | 43,560 | 4 | 174,240 | 4 1 acre = 43560 |
| reforested areas | | | - | 5 |
| sea level rise accommodations/topo | | 6 | 261,360 | 1 south point, potomac park, fort foote, RVerview Park, Hett on Point |
| Subtotal | | | 1,359,600 | 31 |
| Total | | | 1,822,415 | 42 |

Reverse Engineering

The following is an exercise in reverse engineering the National Memorial for Peace and Justice in Montgomery Alabama. It is a significant architectural landmark designed to commemorate victims of racial violence and lynchings in the US. The layout of the memorial is carefully planned to guide visitors through a journey of remembrance and contemplation. The program consists of an entrance, pavillion, promenade, great lawn, central memorial, , amphitheatre, gallery, monument park, a gathering grove, and many gardens. As visitors traverse the site the encounter each monument, engraved with the names and dates of lynching victims. This design encourages reflection and dialouge, fostering a deeper understanding of the historical injustices faced by African Americans. It also seamlessly integrates with the surrounding landscpaes, incorporating pathways, water features and natural elements to create a tranquil environment. The harmonius blend of architecture and landscpae enhances the emotional impact of the memorial.

NATIONAL MEMORIAL FOR PEACE AND JUSTICE

Erin Nilsson
 ARCH797
 Spring 2024
 Prof. Tighman



- The National Memorial for Peace and Justice
- 1 Entrance
 - 2 Pavilion
 - 3 Promenade
 - 4 Great Lawn
 - 5 Memorial Hill
 - 6 Memorial Hill
 - 7 Amphitheatre
 - 8 Gallery
 - 9 Monument Park
 - 10 Gathering Grove
 - 11 Ida B Wells Garden
 - 12 Exit
 - 13 Greenspace
 - 14 Urbanspace
 - 15 Parking

| Program | Sqft |
|-----------------------|----------------|
| 1 Entrance | 7,950 |
| 2 Pavilion | 2,800 |
| 3 Promenade | 10,000 |
| 4 Great Lawn | 39,500 |
| 5 Memorial Hill | 16,000 |
| 6 Memorial Hill | 15,500 |
| 7 Amphitheatre | 4,400 |
| 8 Gallery | 43,000 |
| 9 Monument Park | 32,100 |
| 10 Gathering Grove | 32,000 |
| 11 Ida B Wells Garden | 8,250 |
| 12 Exit | 4,500 |
| 13 Greenspace | 80,800 |
| 14 Urbanspace | 32,600 |
| 15 Parking | 13,800 |
| Total | 343,200 |

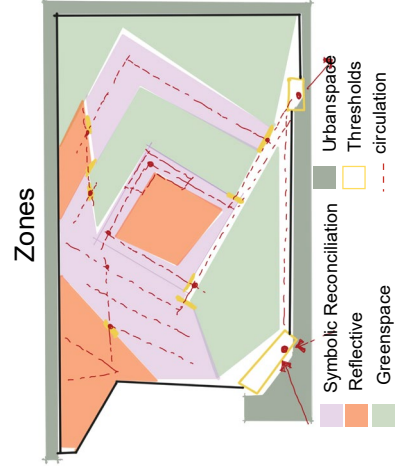


Figure 20: National Memorial for Peace and Justice, Precedent Study

Precedent Analysis

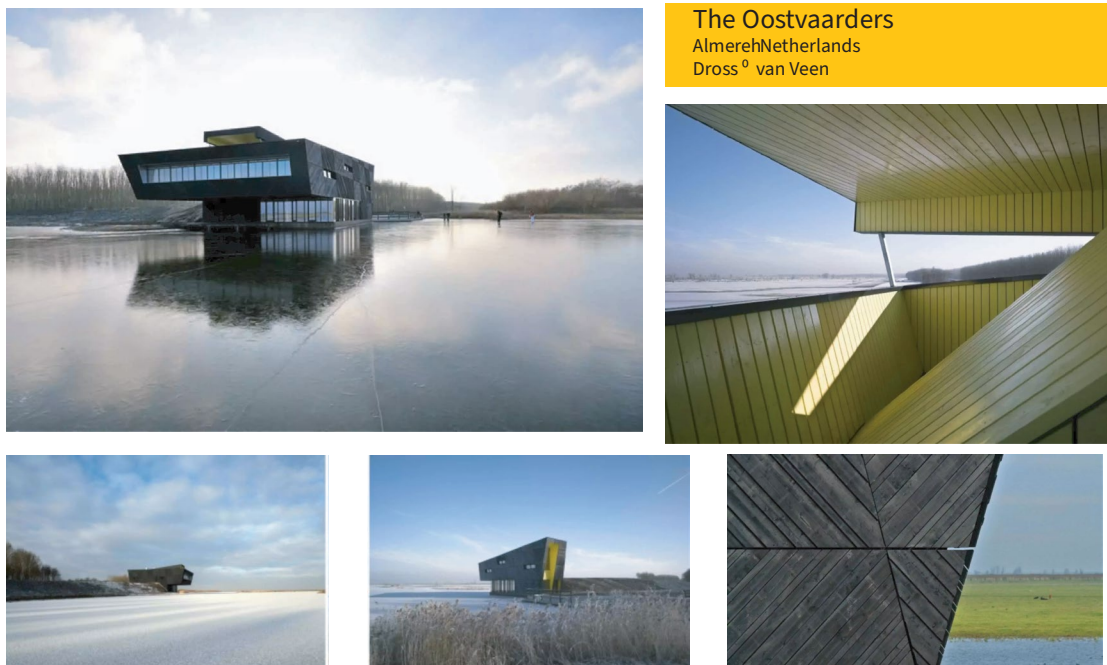


Figure 21 Oostvaarders, Precedent Study

The Oostvaarders is a project known for its innovative approach to urban planning and sustainability. It demonstrates forward-thinking integration of architecture, landscape and ecological principles. The design seamlessly blends in with surrounding landscapes, and includes extensive greenspaces, parks and wetlands while creating habitats for wildlife and enhancing the balance of the area. The project serves as a model for creating livable, resilient and environmentally friendly cities.

Ganette USA OTday HQ
TysonshVA
Michael Vergason Landscape Architects

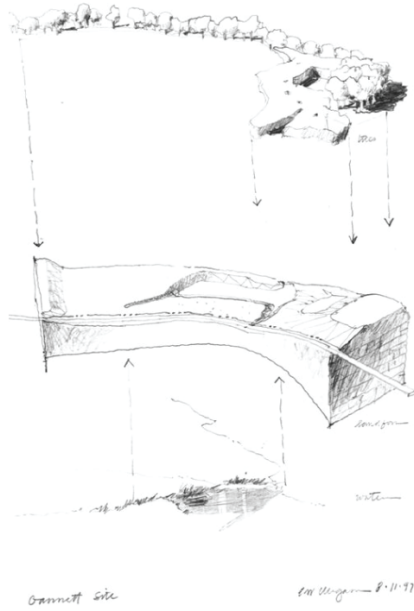


Figure 22 Gannett USA Today, Precedent Study

The Gannett USA Today Headquarters landscape project showcases how outdoor spaces can be transformed into dynamic and inviting environments. The project integrates greenery, pedestrian pathways and functional elements to create a harmonious balance between nature and urban life. Gannett USA Today exemplifies how landscape architecture can enhance public spaces, fostering community engagement and well-being.



Figure 23 Angsila Oyster Scaffolding Pavilion, Precedent Study

The Angsila Oyster Scaffolding Avillion project is an innovative architectural endeavor that combines sustainable oyster farming with hospitality infrastructure. Using modular oyster scaffolding structures, the project aims to revive oyster populations while providing unique accommodation experiences for guests. Architecturally, the project features sleek and functional design, integrating the oyster farming elements seamlessly with the hospitality facilities. This novel approach not only promotes environmental conservation but also offers visitors an immersive and educational experience, showcasing the potential for symbiotic relationships between architecture, aquaculture, and ecotourism.

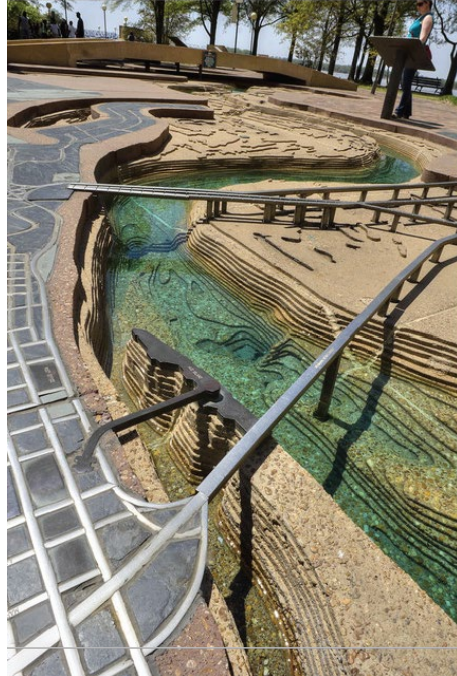


Figure 24: Mud Island, Precedent Study

Located on Mud Island in Memphis, Tennessee, the project features a scale model of the lower Mississippi River, providing visitors with an interactive experience to learn about the river's geography, history, and importance to the region. Architecturally, the project includes visitor centers, pedestrian pathways, and viewing platforms designed to integrate seamlessly with the natural landscape while offering opportunities for recreation and exploration. Through its innovative design and educational focus, the Mud Island Mississippi River project serves as a landmark destination that celebrates the cultural and ecological significance of the Mississippi River.

Aquatic Cultural Center
CopenhagenDenmark
Kengo Kuma & Associates

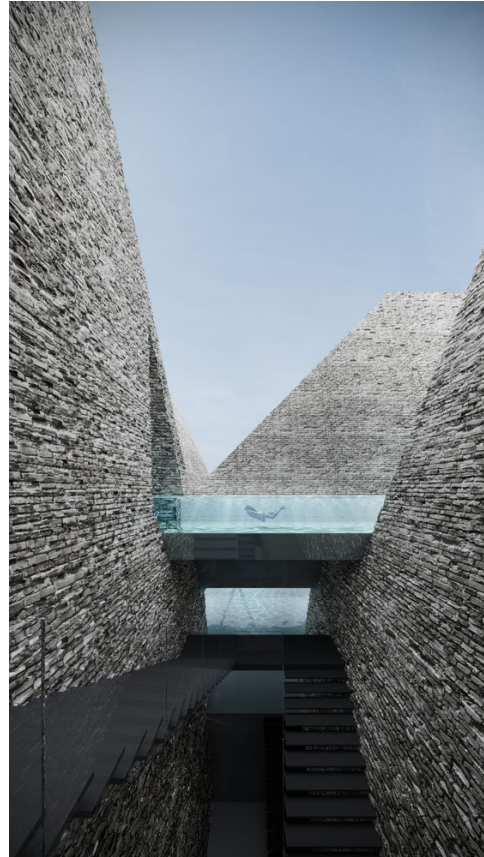
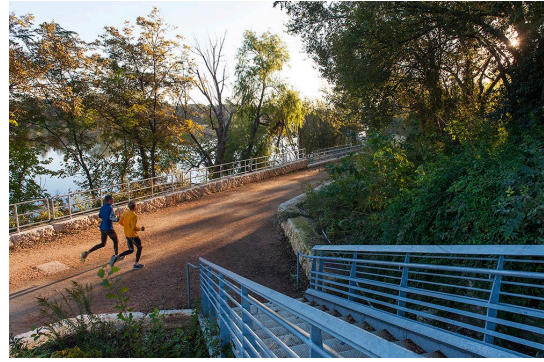


Figure 25; Aquatic Cultural Center, Precedent Study

The Aquatic Cultural Center project in Copenhagen, Denmark, represents an innovative architectural approach to combining cultural and aquatic activities. Designed to integrate with the surrounding waterfront landscape, the center features modern, sustainable architecture that reflects the city's commitment to environmental stewardship. Architectural designs include dynamic, fluid forms inspired by water, with transparent elements that provide panoramic views of the harbor. The center utilizes flexible spaces for exhibitions, performances, and water-based activities, fostering community engagement and cultural exchange. It serves as a vibrant hub for artistic expression, recreation, and environmental awareness, showcasing the intersection of architecture, culture, and sustainability.



Boardwalk on Lady Bird Lake
AustinTX
Limbacher z Godfrey



Figure 26 Boardwalk on Lady Bird Lake, Precedent Study

The Boardwalk on Lady Bird Lake in Austin, Texas, is an architectural marvel that enhances the city's waterfront experience. Designed to provide a scenic pathway for pedestrians and cyclists, the boardwalk seamlessly integrates with the natural landscape of the lake and surrounding greenery. Architecturally, it features sleek, modern materials and minimalistic design elements that complement the natural beauty of the area.

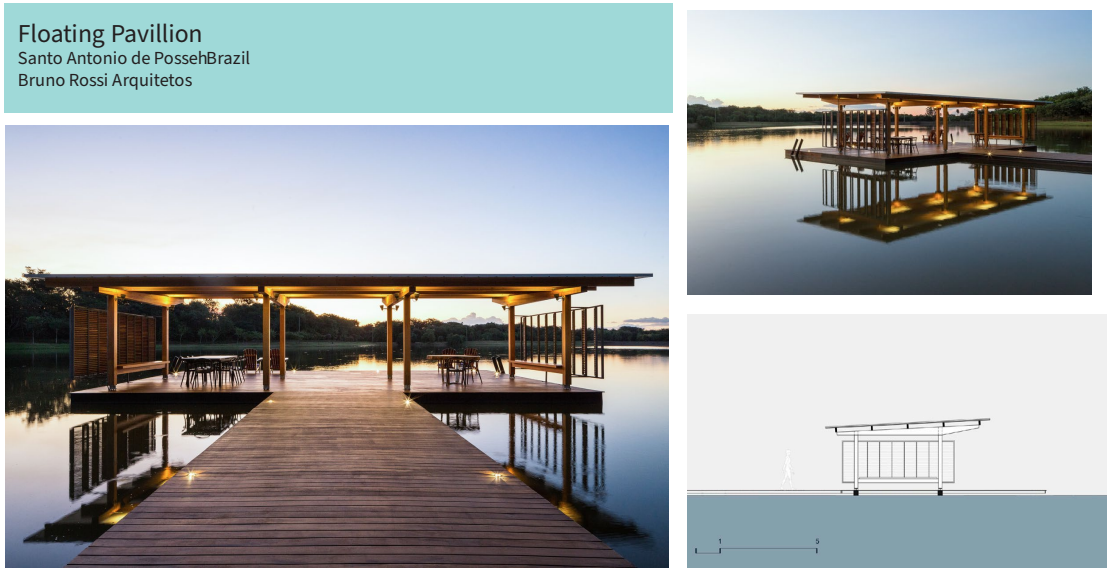


Figure 27 Floating Pavilion, Precedent Study

The Floating Pavilion in Santo Antônio da Patrulha, Brazil, seamlessly blends into its natural setting. Designed to host cultural happenings and community gatherings, the pavilion floats atop the waters of Lagoa dos Barros, grabbing attention as a striking focal point.

Architecturally, it boasts a modern aesthetic, marked by sleek lines and lightweight materials that create an illusion of weightlessness above the water's surface. With its transparent design, the pavilion invites guests to immerse themselves in the scenic beauty surrounding them, blurring the lines between the indoors and the outdoors. Beyond its architectural appeal, the pavilion serves as a symbol of innovation and environmental consciousness, offering a one-of-a-kind venue for social interactions and cultural experiences in the region.

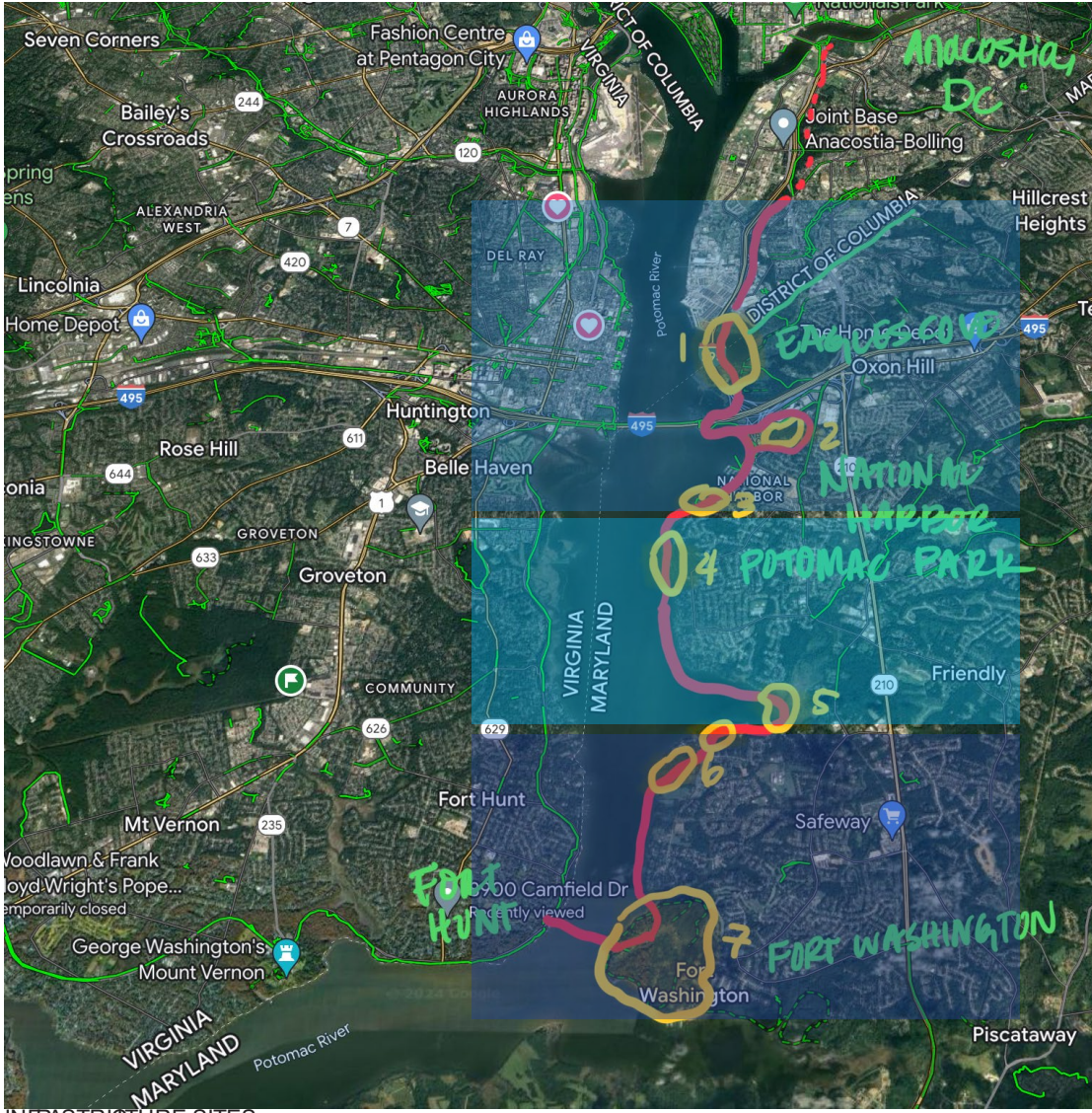
Chapter 6: Site Selection and Analysis

This thesis was derived from analyzing the site through personal observations. Although National Harbor is less than 10 years old, the surrounding communities have preserved history dating back to pre-civil war times. The site began as only national Harbor but through additional research and site analysis it became evident that this would be a multi-site thesis analysis. The criteria evaluated when selecting a site, stems from a multifaceted approach in which these sites all adhere to a variety of criteria that specifically meet the program and goals of the project. First and foremost, the most important criteria are if the site is affected by sea level rise. Subsequently it must be a connection point between communities that allow them to access public infrastructure. Evaluating the environment as well as economic factors allows the site to address any environmental issues that could also have an impact on local economies.

While the scope of this project will cover 7 miles of Maryland coastline, it will be broken down into more manageable pieces to understand the different conditions within the overall site. As mentioned in the program analysis these conditions are lowland residential, bluff residential, lowland park, park bluff, commercial lowland, commercial seawall and inland low-threat areas. The infrastructure project will begin at National Harbor, near the Woodrow Wilson Ridge and end at Fort Washington Park. Coincidentally this site mirrors a portion of the GW Parkway in neighboring Virginia and while there were similar infrastructure plans for Maryland in the early 20th century, this thesis will address 21st century issues as well as accommodate future needs of the environment and the community.

Site Selection Criteria Matrix

Through site analysis and critique, the criteria matrix has evolved from a three-phase plan to a single phase plan that will have access to future phases if the county wishes to expand the project to connect to other nearby infrastructure projects.



INFRASTRUCTURE SITES

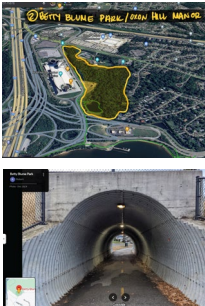
| | infrastructure | | |
|--|----------------|-----------|-----------|
| | PHASE 1 | PHASE 2 | PHASE 3 |
| proximity to the water | 5 | 5 | 5 |
| affected by sea level rise | ? | ? | ? |
| riparian rights of homeowners | ? | ? | ? |
| connection to the potomac heritage trails/other trails/paths | 5 | 4 | 5 |
| views to/from the water/bridge | 5 | 5 | 5 |
| provides connectivity to disjointed communities | 5 | 5 | 5 |
| provides access to new metro station | ? | ? | ? |
| possible endangered species/habitat | 5 | 5 | 5 |
| cultural significance | 5 | 5 | 5 |
| provides opportunity for public space/placemaking | 4 | 4 | 4 |
| Total | 34 | 33 | 34 |

Figure 28 Initial Site Analysis



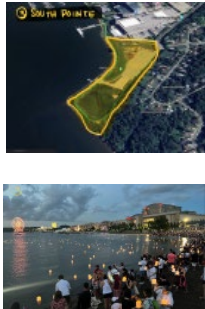
1. OXON CREEK

| | Miles | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| proximity to the water | 5 | 3 | 5 | 4 | 5 | 3 | 5 |
| affected by sea level rise | 7 | 0 | 7 | 7 | 7 | 7 | 7 |
| if part an rights of horsewe ns | 5 | 0 | 5 | 4 | 5 | 3 | 3 |
| come close to the potomac/ heritage trails/ other trails/ paths | 5 | 3 | 4 | 5 | 3 | 3 | 5 |
| views/ or from the water/ for/ dge | 4 | 3 | 5 | 4 | 4 | 2 | 5 |
| provides come civity to dispersed/ common lines | 4 | 5 | 5 | 3 | 3 | 2 | 2 |
| provides access to new metro station | 4 | 5 | 5 | 3 | 3 | 1 | 1 |
| pos. like endan gened/ species/ habitat | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| cultural significance | 3 | 5 | 0 | 1 | 5 | 1 | 5 |
| provides opp. rtunity for public space/ placemaking | 1 | 5 | 5 | 4 | 4 | 1 | 5 |
| Total | 31 | 29 | 34 | 28 | 32 | 16 | 31 |



2. BETTY BLUM PARK / OXON HILL MANOR

| | Miles | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| proximity to the water | 5 | 3 | 5 | 4 | 5 | 3 | 5 |
| affected by sea level rise | 7 | 0 | 7 | 7 | 7 | 7 | 7 |
| if part an rights of horsewe ns | 5 | 0 | 5 | 4 | 5 | 3 | 3 |
| come close to the potomac/ heritage trails/ other trails/ paths | 5 | 3 | 4 | 5 | 3 | 3 | 5 |
| views/ or from the water/ for/ dge | 4 | 3 | 5 | 4 | 4 | 2 | 5 |
| provides come civity to dispersed/ common lines | 4 | 5 | 5 | 3 | 3 | 2 | 2 |
| provides access to new metro station | 4 | 5 | 5 | 3 | 3 | 1 | 1 |
| pos. like endan gened/ species/ habitat | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| cultural significance | 3 | 5 | 0 | 1 | 5 | 1 | 5 |
| provides opp. rtunity for public space/ placemaking | 1 | 5 | 5 | 4 | 4 | 1 | 5 |
| Total | 31 | 29 | 34 | 28 | 32 | 16 | 31 |



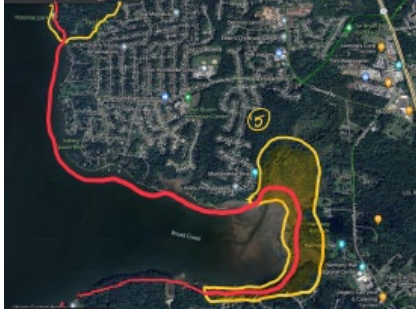
3. SOUTH POINT NATIONAL HARBOR

| | Miles | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| proximity to the water | 5 | 3 | 5 | 4 | 5 | 3 | 5 |
| affected by sea level rise | 7 | 0 | 7 | 7 | 7 | 7 | 7 |
| if part an rights of horsewe ns | 5 | 0 | 5 | 4 | 5 | 3 | 3 |
| come close to the potomac/ heritage trails/ other trails/ paths | 5 | 3 | 4 | 5 | 3 | 3 | 5 |
| views/ or from the water/ for/ dge | 4 | 3 | 5 | 4 | 4 | 2 | 5 |
| provides come civity to dispersed/ common lines | 4 | 5 | 5 | 3 | 3 | 2 | 2 |
| provides access to new metro station | 4 | 5 | 5 | 3 | 3 | 1 | 1 |
| pos. like endan gened/ species/ habitat | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| cultural significance | 3 | 5 | 0 | 1 | 5 | 1 | 5 |
| provides opp. rtunity for public space/ placemaking | 1 | 5 | 5 | 4 | 4 | 1 | 5 |
| Total | 31 | 29 | 34 | 28 | 32 | 16 | 31 |



4. POTOMAC PARK

| | Miles | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| proximity to the water | 5 | 3 | 5 | 4 | 5 | 3 | 5 |
| affected by sea level rise | 7 | 0 | 7 | 7 | 7 | 7 | 7 |
| if part an rights of horsewe ns | 5 | 0 | 5 | 4 | 5 | 3 | 3 |
| come close to the potomac/ heritage trails/ other trails/ paths | 5 | 3 | 4 | 5 | 3 | 3 | 5 |
| views/ or from the water/ for/ dge | 4 | 3 | 5 | 4 | 4 | 2 | 5 |
| provides come civity to dispersed/ common lines | 4 | 5 | 5 | 3 | 3 | 2 | 2 |
| provides access to new metro station | 4 | 5 | 5 | 3 | 3 | 1 | 1 |
| pos. like endan gened/ species/ habitat | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| cultural significance | 3 | 5 | 0 | 1 | 5 | 1 | 5 |
| provides opp. rtunity for public space/ placemaking | 1 | 5 | 5 | 4 | 4 | 1 | 5 |
| Total | 31 | 29 | 34 | 28 | 32 | 16 | 31 |



5. HARMONY HALL

| | Sites | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| proximity to the water | 5 | 3 | 5 | 4 | 5 | 3 | 5 |
| affected by sea level rise | 7 | 0 | 7 | 7 | 7 | 7 | 7 |
| in plain sight of homeowners | 5 | 0 | 5 | 4 | 5 | 3 | 3 |
| come closer to the potomac heritage trails/other trails/paths | 5 | 3 | 4 | 5 | 3 | 3 | 5 |
| views to/from the water/bridge | 4 | 3 | 5 | 4 | 4 | 2 | 5 |
| provides connectivity to dispersed common ties | 4 | 5 | 5 | 3 | 3 | 2 | 2 |
| provides access to new metro station | 4 | 5 | 5 | 3 | 3 | 1 | 1 |
| possible endin gened species/habitat | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| cultural significance | 3 | 5 | 0 | 1 | 5 | 1 | 5 |
| provides opportunity for public space/placemaking | 1 | 5 | 5 | 4 | 4 | 1 | 5 |
| Total | 31 | 29 | 34 | 28 | 32 | 16 | 31 |



6. RIVERVIEW RECREATION

| | Sites | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| proximity to the water | 5 | 3 | 5 | 4 | 5 | 3 | 5 |
| affected by sea level rise | 7 | 0 | 7 | 7 | 7 | 7 | 7 |
| in plain sight of homeowners | 5 | 0 | 5 | 4 | 5 | 3 | 3 |
| come closer to the potomac heritage trails/other trails/paths | 5 | 3 | 4 | 5 | 3 | 3 | 5 |
| views to/from the water/bridge | 4 | 3 | 5 | 4 | 4 | 2 | 5 |
| provides connectivity to dispersed common ties | 4 | 5 | 5 | 3 | 3 | 2 | 2 |
| provides access to new metro station | 4 | 5 | 5 | 3 | 3 | 1 | 1 |
| possible endin gened species/habitat | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| cultural significance | 3 | 5 | 0 | 1 | 5 | 1 | 5 |
| provides opportunity for public space/placemaking | 1 | 5 | 5 | 4 | 4 | 1 | 5 |
| Total | 31 | 29 | 34 | 28 | 32 | 16 | 31 |



7. FORT WASHINGTON

| | Sites | | | | | | |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| proximity to the water | 5 | 3 | 5 | 4 | 5 | 3 | 5 |
| affected by sea level rise | 7 | 0 | 7 | 7 | 7 | 7 | 7 |
| in plain sight of homeowners | 5 | 0 | 5 | 4 | 5 | 3 | 3 |
| come closer to the potomac heritage trails/other trails/paths | 5 | 3 | 4 | 5 | 3 | 3 | 5 |
| views to/from the water/bridge | 4 | 3 | 5 | 4 | 4 | 2 | 5 |
| provides connectivity to dispersed common ties | 4 | 5 | 5 | 3 | 3 | 2 | 2 |
| provides access to new metro station | 4 | 5 | 5 | 3 | 3 | 1 | 1 |
| possible endin gened species/habitat | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| cultural significance | 3 | 5 | 0 | 1 | 5 | 1 | 5 |
| provides opportunity for public space/placemaking | 1 | 5 | 5 | 4 | 4 | 1 | 5 |
| Total | 31 | 29 | 34 | 28 | 32 | 16 | 31 |



Sites Selected and Analysis

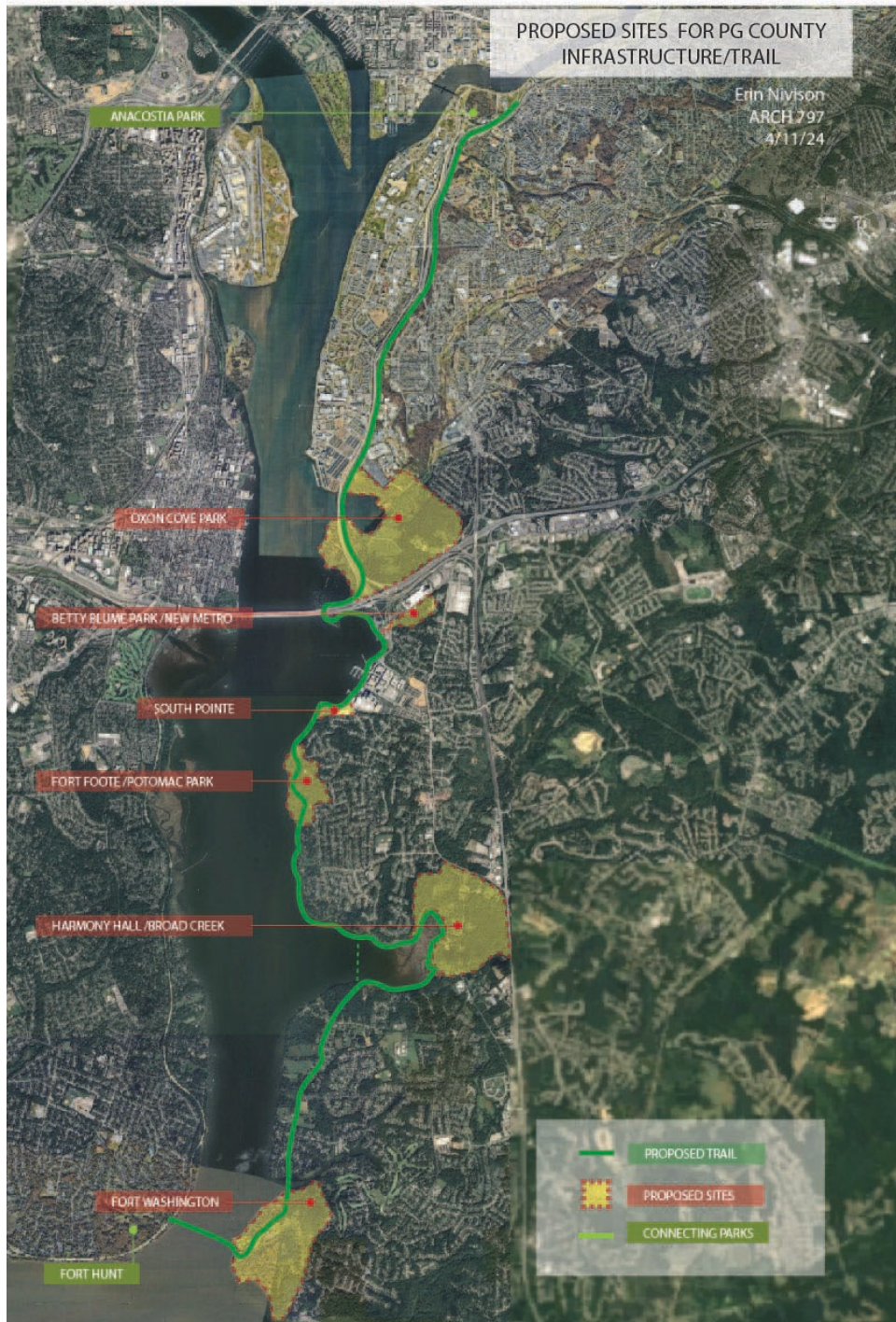
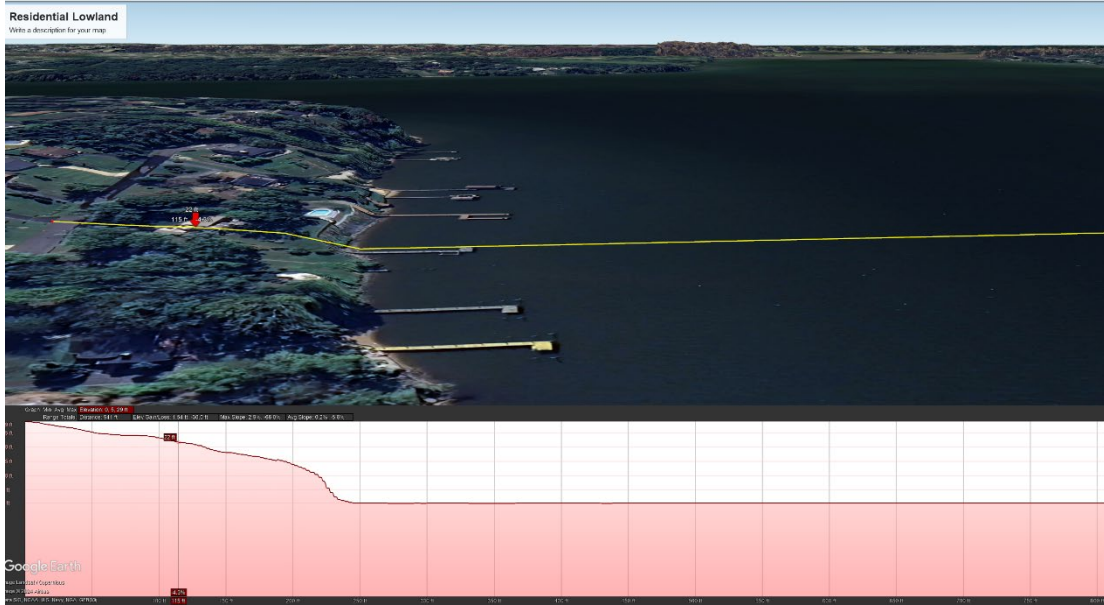


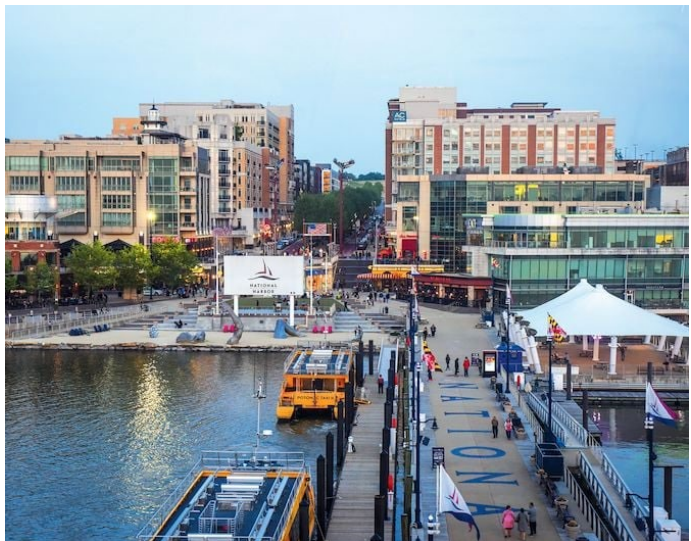
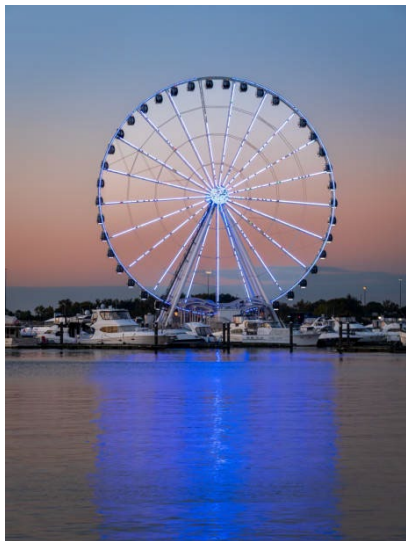
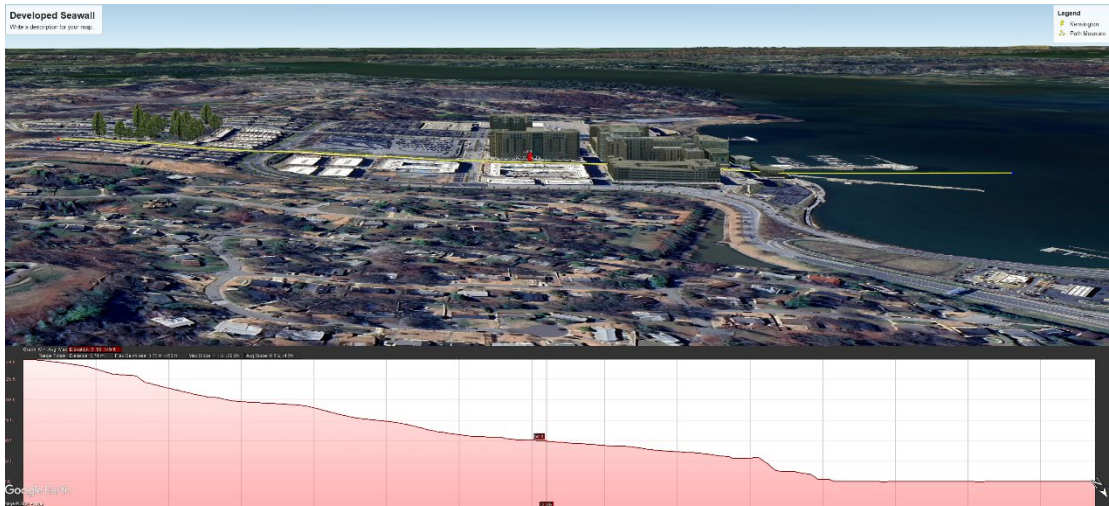
Figure 29 Preliminary Site Selection

The following site have been selected as conditions that repeat within the scope of this project: lowland residential, bluff residential, lowland park, park bluff, commercial lowland, commercial seawall and inland low-threat areas.

Lowland residential:



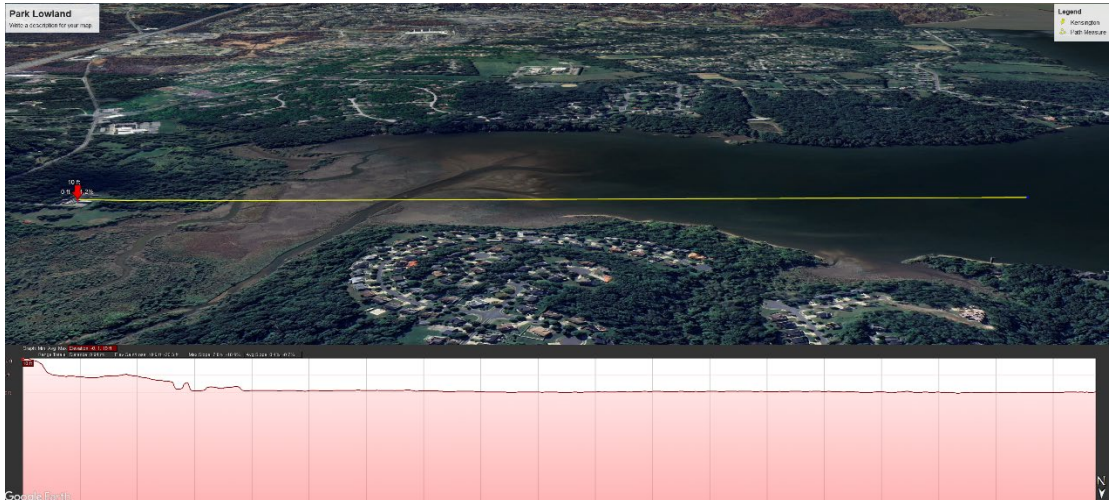
Commercial Sea Wall: National Harbor, MD



Developed Lowland: South Point, National Harbor



Park Lowland: Broad Creek Park



The following diagrams analyze the site as a whole through many different lenses including: environmental factors such as critical overlay zones, flood zones, sea level rise, topography and community influences such as local parks, walkability and pedestrian oriented streets.

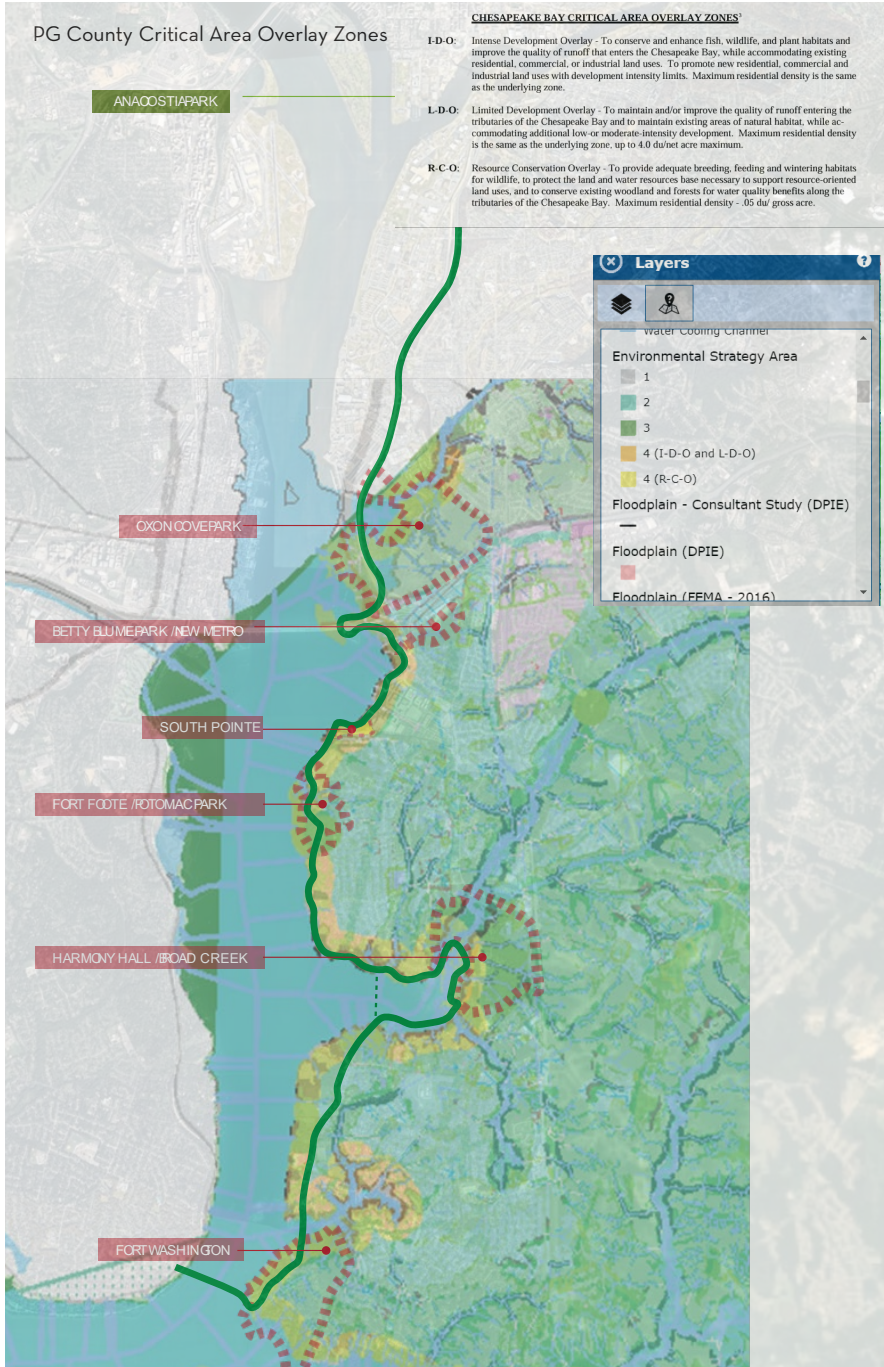


Figure 30 Critical Overlay Zones

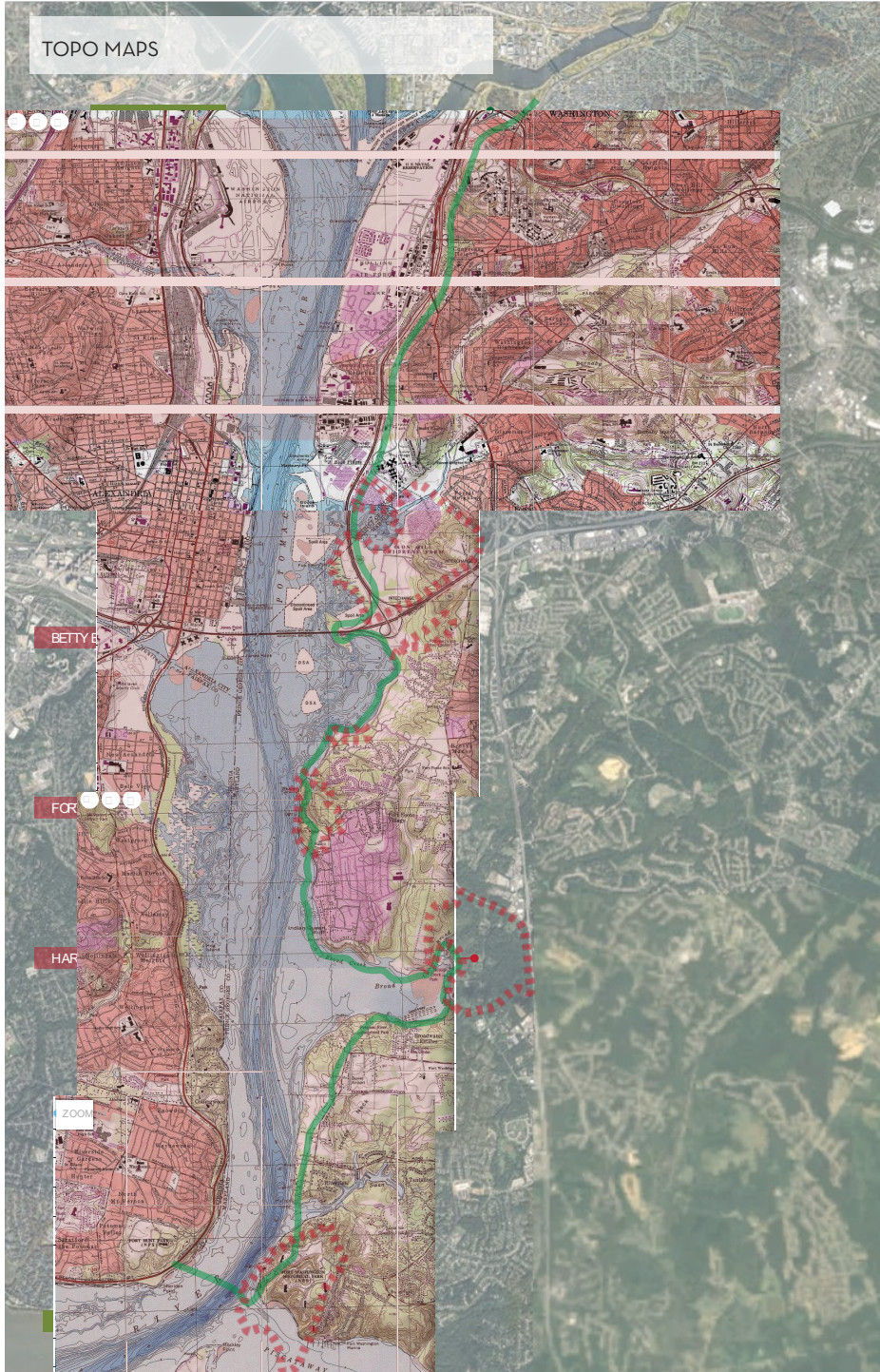


Figure 32: Topography Maps

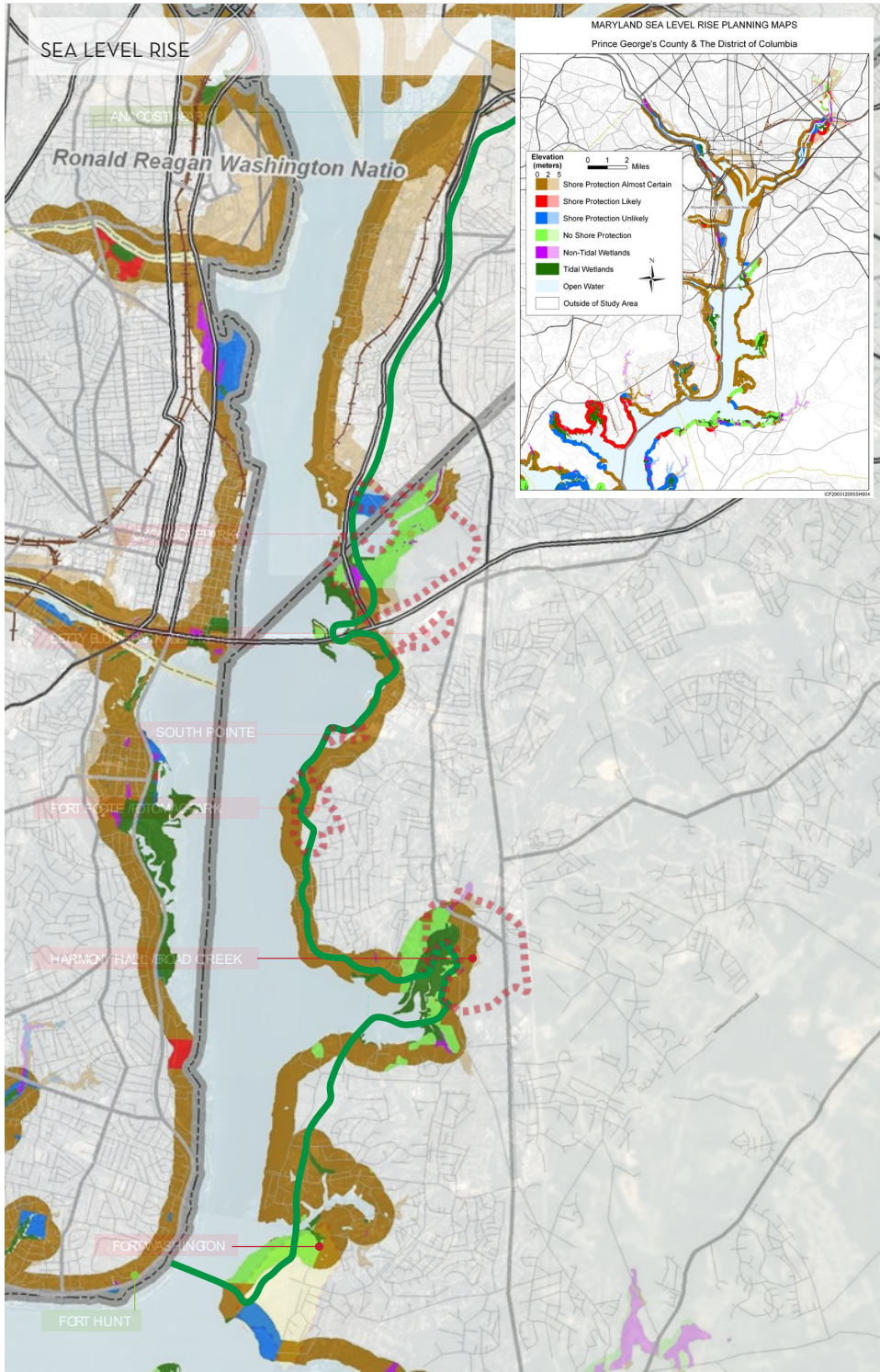


Figure 33: Sea Level Rise Planning Maps

WALKABILITY

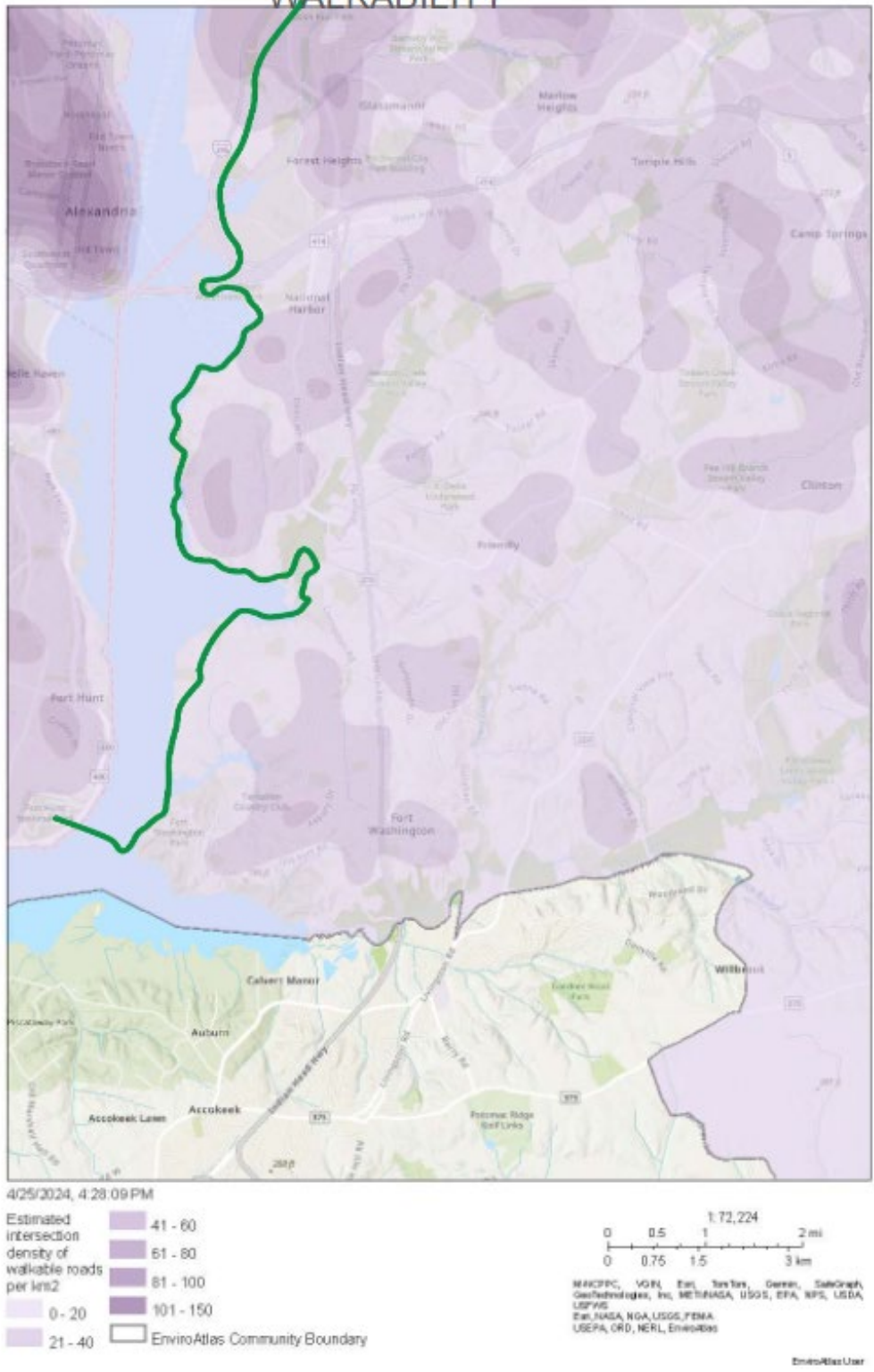
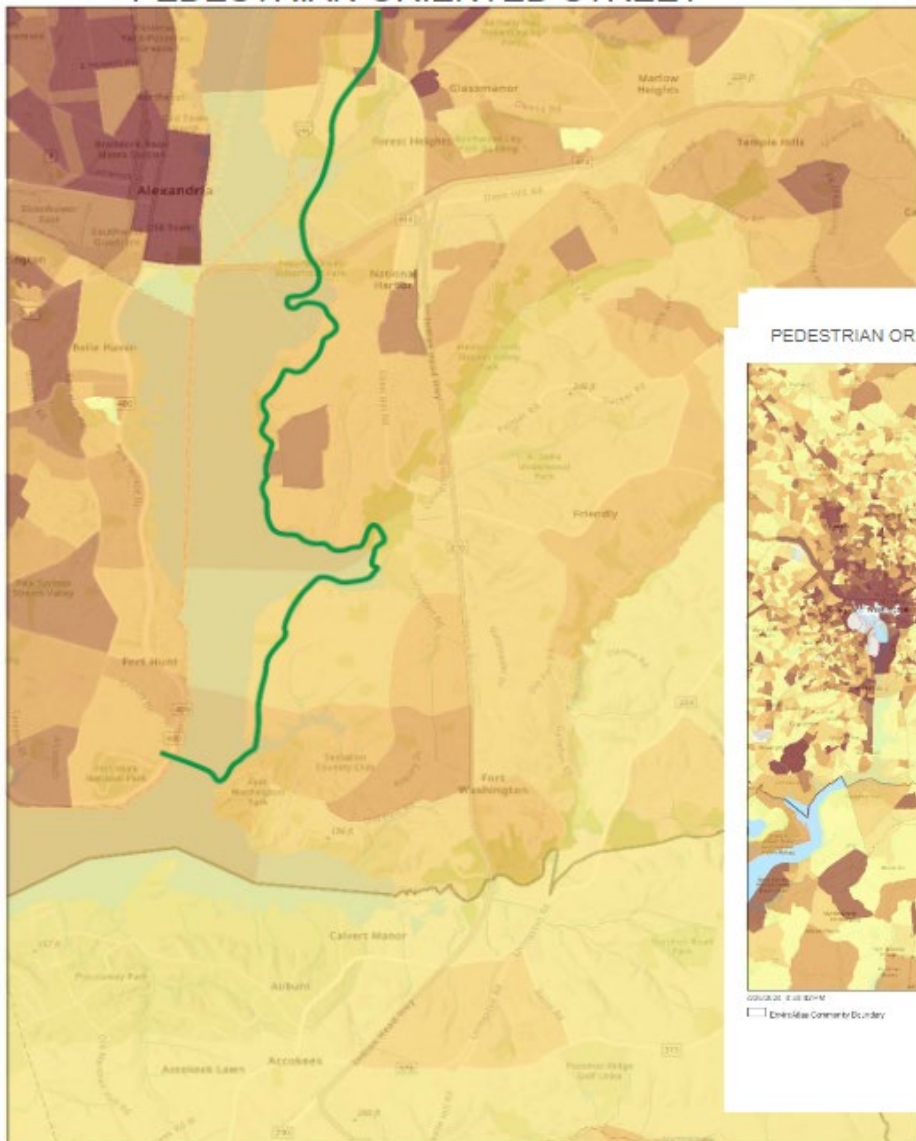


Figure 34: Walkability Site Analysis

PEDESTRIAN ORIENTED STREET



PEDESTRIAN ORIENTED STREET-DC



4/25/2024, 4:29:23 PM

Pedestrian-oriented street intersection density (intersections per square mile)

| | |
|--------------|---------------|
| > 29 – 49.7 | > 131 – 0,172 |
| > 49.7 – 71 | |
| > 71 – 95.8 | |
| > 95.8 – 131 | |
| 0 – 2.3 | |
| > 2.3 – 11 | |
| > 11 – 29 | |

□ EnviroAtlas Community Boundary

1:72,224

0 0.5 1 2 mi
0 0.75 1.5 3 km

MANPCPC, VGN, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METRANSA, USGS, EPA, NPS, USDA, USFWS
Esri, NASA, NOAA, USGS, FEMA
USEPA, ORF, NERL, EnviroAtlas

EnviroAtlas User

Figure 35: Pedestrian Oriented Street Site Analysis

Watersheds

Land coverage

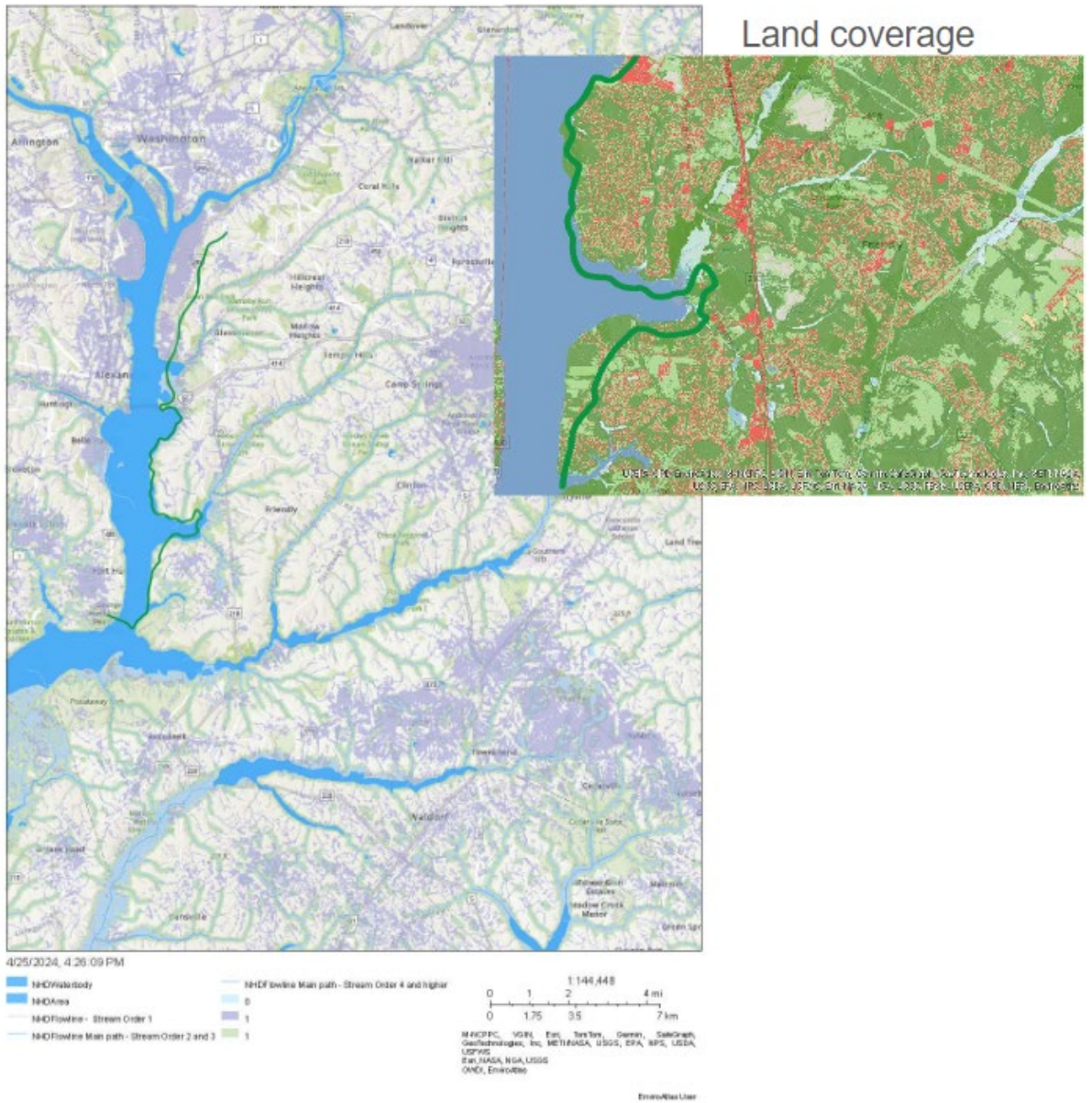
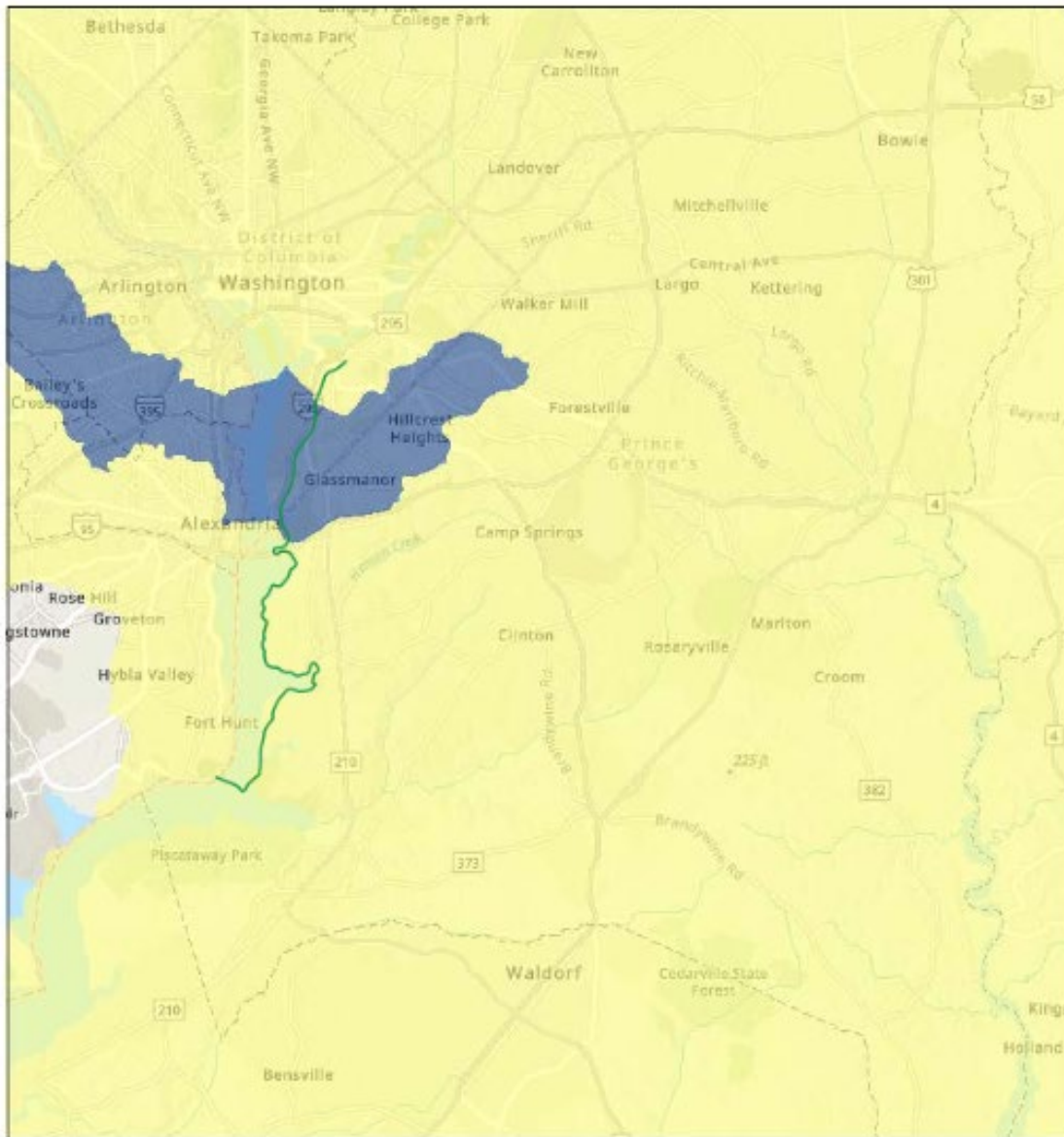


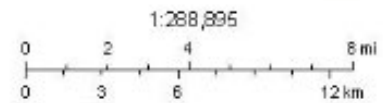
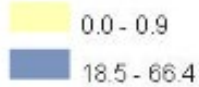
Figure 37: Watershed Analysis

Combined Sewer Events



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Number of
combined sewer
overflow events



Map: NASA, NOAA, USGS, B-NOFPC, VGIN, Esri, TomTom, Garmin, SafeGraph, METRNAS, USGS, EPA, MFS, USDA, USFWS

Esri and/or its
U.S. Environmental Protection Agency

Figure 38 Combined Sewer Events Analysis



Figure 39 PG County Amenities

Chapter 7: Convergence

The thesis project unites a detailed site analysis, environmental strategies, and symbolic themes to create an architectural intervention that addresses ecological and cultural concerns while fostering community connections. The South Pointe site at National Harbor was analyzed for its unique position as a transition zone between land and water, offering opportunities for ecological restoration and community engagement. Complementing this is the study of the Fort Washington riverfront areas, which highlight historical and cultural ties to the Piscataway people, African American heritage, and the natural history of the Potomac River. These analyses informed the environmental strategies integrated into the project, emphasizing water filtration, habitat restoration, and adaptive design in response to future flooding scenarios.

At the heart of this thesis is a programmatic vision that merges the built and natural environment. The proposed aquatic center at South Pointe serves as both a recreational hub and a symbol of water's transformative potential. This intervention connects to a trail system that stitches together Fort Washington, National Harbor, and broader networks such as the Piscataway Trail, Mount Vernon Trail, and D.C. trail systems. Along the trail, commemorative symbols such as the cardinal directions and water collection elements serve as cultural markers, drawing attention to the region's history and the critical role of ecological stewardship. Together, these components form a cohesive design narrative, transforming fragmented waterfronts into a unified, accessible, and resilient landscape.



Figure 40 Disconnection Diagram

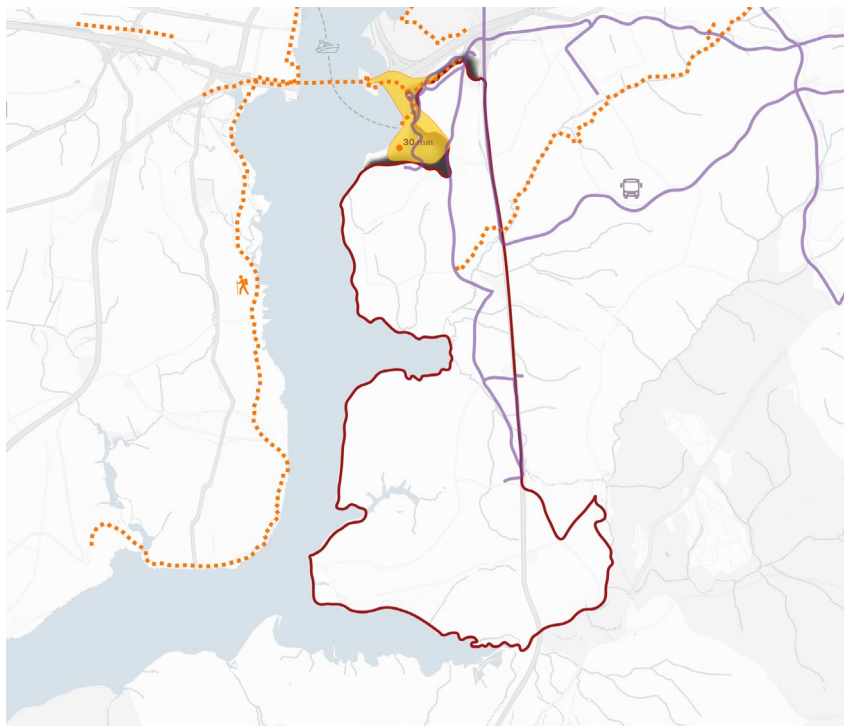


Figure 41: Disconnect/ Transit Diagram



Figure 42: Greenspaces Diagram



Figure 43: Illustrative Trail Plan

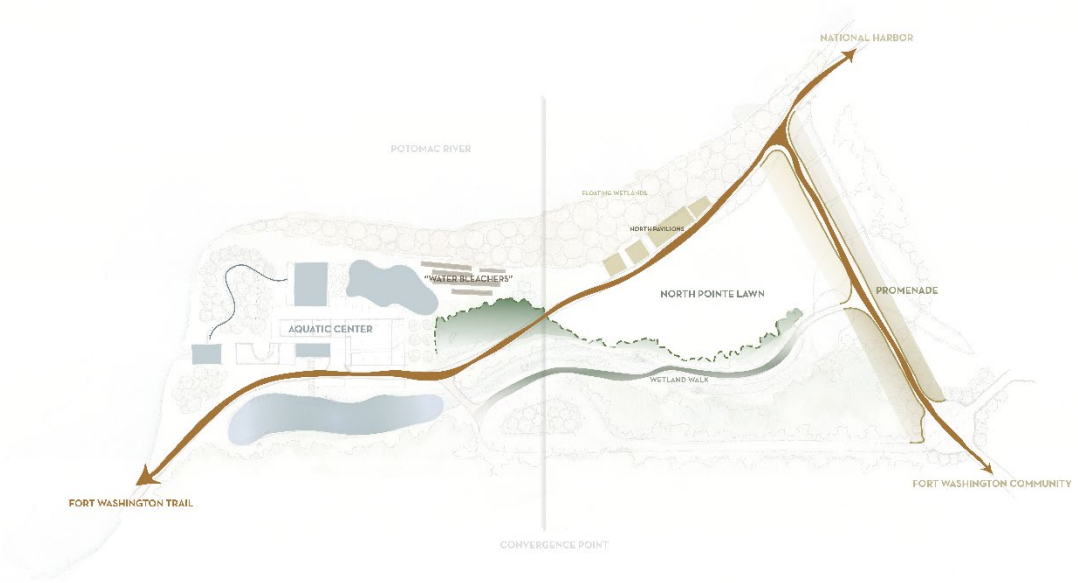


Figure 44: South Pointe Diagram

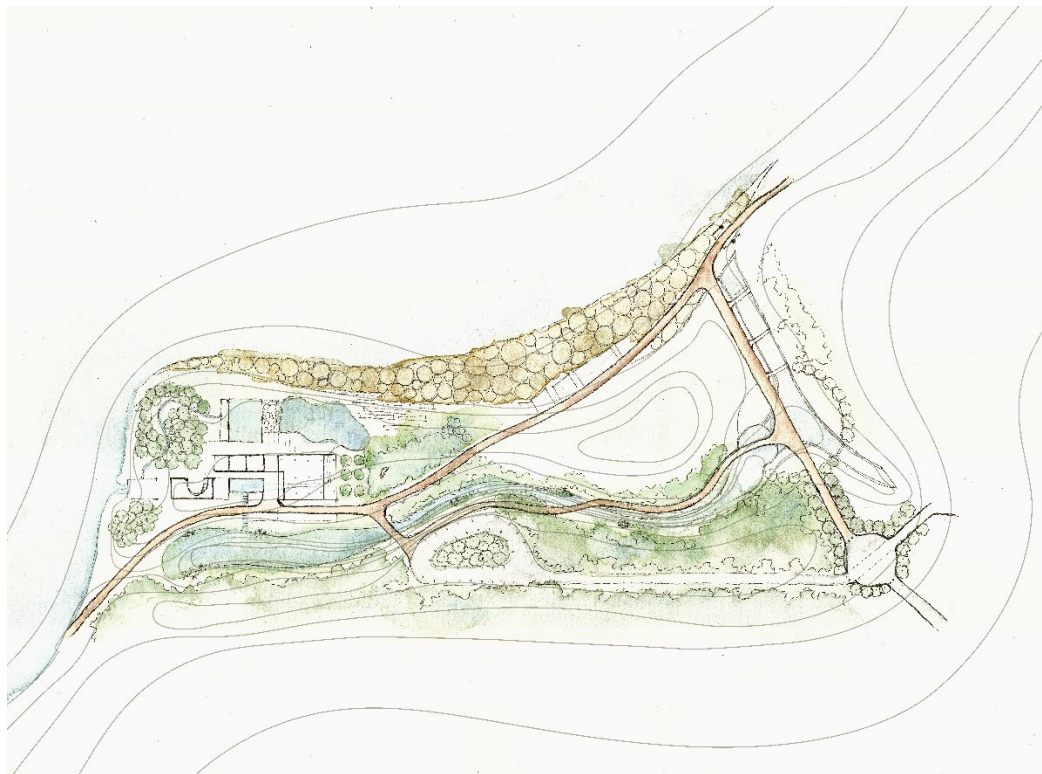


Figure 45: South Pointe Site Plan



Figure 46: Aquatic Center Site Plan

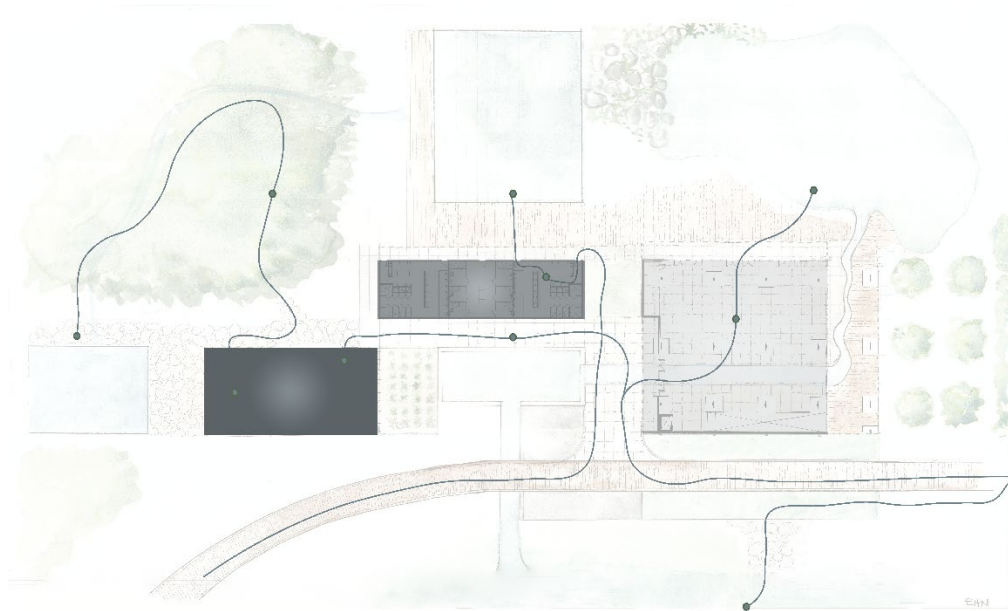


Figure 47: Aquatic Center Public/Private Diagram

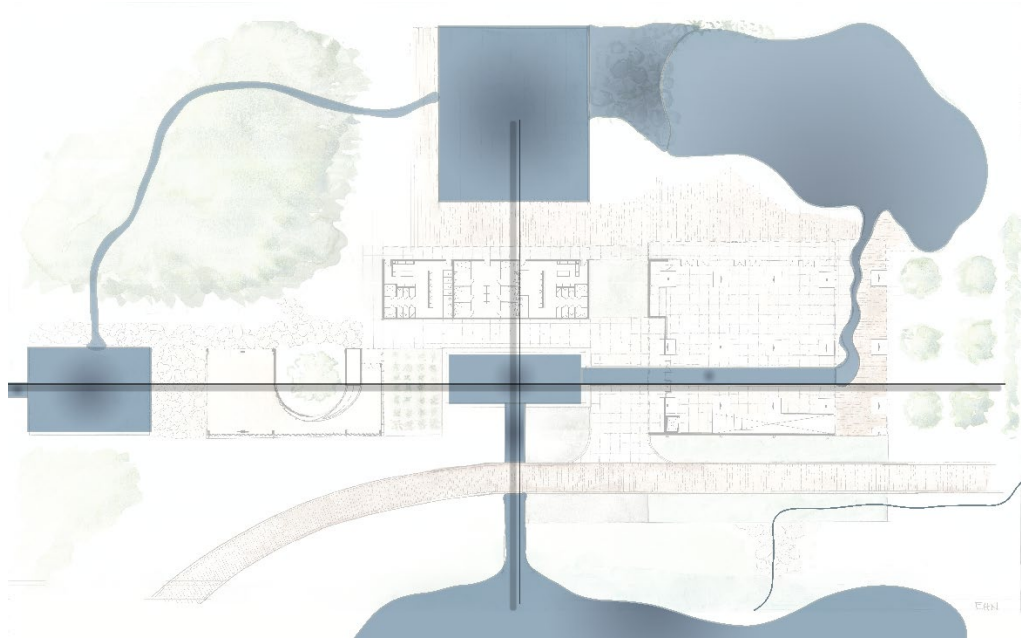


Figure 48: Aquatic Center Water Diagram

Chapter 8: Conclusion

The final thesis presentation highlighted the potential for architecture and urban design to mediate between ecological strategies and cultural commemoration. The integration of cardinal directions, symbolic of movement and connection, and the physical act of water purification on the site underscores a dialogue between natural and built systems. The use of conditional diagrams to illustrate ecological strategies, such as habitat restoration and flood adaptation, not only shaped the trail's alignment but also proposed a governance framework for collaboration between state or county authorities and private property owners. These strategies offer incentives for property protection while creating public value through community-accessible trails.

Feedback from the thesis defense underscored the importance of planning for future climate scenarios. The idea of using predicted flood zones, reflecting water rise over the next 50 to 100 years, as a foundational design element emerged as a significant refinement. This forward-thinking approach informed trail placement and identified properties requiring prioritization for ecological protection. Ultimately, the thesis demonstrates how site-specific analysis, environmental sensitivity, and cultural storytelling converge to create a design that is not only resilient and adaptive but also fosters a deeper understanding of the relationships between people, place, and environment. The project serves as both a blueprint for ecological and cultural restoration and a tool for encouraging sustainable governance and community collaboration.

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<https://www.loc.gov/item/73696018/>.
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Annotated Bibliography

1. DeRenzis, Brooke, and Alice M. Rivlin. *A pathway to the middle class: Migration and demographic change in Prince George's County*. Brookings Greater Washington Research Program, 2007.

Issued by the Brookings Institution of Washington DC, this paper was authored by two researchers studying migration and demographics of Prince George's County, Maryland. Their findings were based on Census and IRS migration data prior to 2010, primarily focusing on the changes from the 1990's to 2000's. The five general findings that were published consisted of 1) racial composition flipped between DC and PG county in the last 15 years, black populations became more concentrated in PG county and less so in DC, 2) DC lost middle-income housing while it remained consistent in PG county in the 1990's, 3) total population migration was equal in and out of PG county, but the residents incoming were 60% black and primarily white outgoing, and the incoming incomes were lower than the outgoing, 4) movement of black and white populations out of PG county to surrounding counties (Anne Arundel, Charles, and Howard Counties) tended to have higher-but still moderate incomes and lastly 5) those migrating between DC and PG county in both directions had lower incomes than those migrating from PG county to surrounding counties. In conclusion, lower income working families found moving to PG county as a way of entering the middle class with access to better schools, affordable housing and/or safer neighborhoods yet higher income households migrated to neighboring counties, creating economic disparities.

Key words: racial composition, middle-income housing, migration

2. Smith, Jerah A. *Transit-Oriented Development and Affordable Housing in Prince George's County: A Case Study-Based Approach*. Partnership for Action Learning in Sustainability (PALS), 2018.

Written by a Master of community planning candidate under the supervision of two program directors in the Urban Studies Program at UMD, this paper partnered with the PALS program (Partnership for Action Learning in Sustainability) which is part of an initiative through the National Center for Smart Growth. Although metro stations create accessibility for low-moderate income households, they also create high housing costs which can displace current residents and prevent future low-income households from moving in the area. Dense, mixed-income communities are ideal for these transit areas, but affordable housing is not often admired by developers. This paper examines transit-oriented development in Prince George's County and how affordable housing can be limited in these areas due to developers not receiving economic benefit, thus involving government subsidization and creating a stigma against affordable housing. The paper proposes a three-phase plan that could help resolve the multifaceted challenges against affordable housing near metro stations.

Key words: transit, affordable housing, metro, subsidizing

3. Jones, Cheryl. "Must Achievement Gaps Persist? The Struggle for Educational Reform in Prince George's County, Maryland." PhD diss., 2011.

This paper was written as thesis dissertation within the school of Government and Politics. Educational reform was attempted in 2002 when the elected school board was dissolved by state legislature, but the reform was not a success, it failed with constant leadership change, hostile political environment and disengages citizens. Some key points examined in this paper are a comparison of the statistics of Prince George's County Public Schools (PGCPS) and other Maryland counties as well as national averages. It explores topics of economics, racial gaps, and school size and how it influences school success as well as individual student success. The three largest obstacles PGCPS currently faces are large school size, large numbers of minority students and impoverished areas. While a conclusion is drawn showing PGCPS has improved in academic achievement, it is still lacking when compared to neighboring counties and national averages.

Keywords: education, academic achievement, poverty, reform

4. Guhn, Martin. "Insights from successful and unsuccessful implementations of school reform programs." *Journal of Educational change* 10 (2009): 337-363.

A researcher at the University of Columbia, Martin Guhn explores successful and unsuccessful school reform programs when facing poverty and ethno-cultural segregation. Two successful reform practices he examines are the School Development Program (SDP) and Child Development Program (CDP). The analysis is guided by bio-ecological theory of human development which relates to several different processes; relationship building, autonomy, resistant to change, competence, leadership, team support, and school- family- community partnerships. He concludes that reform is not uniform, it will not look that same since every system is culturally, economically, and politically different. Reform must be a multi-level approach that includes all stakeholders in the process; the student, parents, teach, staff, family neighborhood, community, district, and cultural characteristics that make up the educational "environment."

Keywords: Education reform, bio-ecological theory

5. National Harbor Economic & Workforce Analysis | PGCAJC, September 17, 2016. <https://pgcajc.com/wp-content/uploads/2021/07/National-Harbor-Economic-and-Workforce-Analysis.pdf>.

Written in 2016, the economic analysis of National Harbor provides statistics of the local economy alongside socio-economic information. National Harbor residents that commute out of the area are two times larger than non-residents and residents who work in National Harbor, which is a large imbalance (18,000 vs 51,000). The opening of MGM Casino and Hotel created 3,000 new jobs which they conclude will put a burden on regional transportation and infrastructure. The analysis also examines a multitude of economic factors, including employment growth, forecasted growth, growth due to the competitive effect, and the location quotient (LQ) which measure

how unique the local economy is. National Harbor has an above average LQ in the following areas: Sciences, Military, Maintenance and Food Services.

Keywords: Economy, Location Quotient, Commuting

6. Ware, Jordan K. "Property value as a proxy of socioeconomic status in education." *Education and Urban Society* 51, no. 1 (2019): 99-119.

Jordan Ware from the Department of Educational Leadership at the University of Oklahoma explores how social economic status (SES) and Free or reduced-price lunch status relates to property values. Through examining PISA scores, it is evident that more advanced social groups substantially outperform their disadvantaged peers. Students' socioeconomic status in urban environments can prevent them from deep learning and development. He also discusses how the script should be flipped from "poverty" to "access to capital", as how can we provide capital to these students of low SES, and how free or reduced lunch is the bare minimum, we need to be doing much more to help these students succeed with their peers from average to high SES backgrounds.

Keywords: Property values, socioeconomic status, free or reduced lunch

7. Lazo, Luz. "Metro Expansion Would Add National Harbor, Georgetown Stations ..." *Washington Post*, February 25, 2022.
<https://www.washingtonpost.com/transportation/2022/02/25/national-harbor-metro-blue-line/>.

This article examines the possibility of extending the blue line into Nation Harbor and the economic benefits and repercussions of it. The National Harbor area has had huge recent increased in economic development yet it was one of the few DMV area cities that lack access to public metro transit. Although the metro lines have experienced ridership losses, they are still trudging forward to create the silver and purple lines as well as additional stops on the blue line.

Keywords: Metro, economic, national harbor, transit, federal grant

8. Sheller, Mimi. "Racialized mobility transitions in Philadelphia: connecting urban sustainability and transport justice." *City & Society* 27, no. 1 (2015): 70-91.

A case study about Philadelphia by Mimi Sheller from Drexel University explores sustainable mobility within spatial, cultural and racial contexts. The study shows that young, white automobility is decreasing, and it is usually seen alongside combating social issues such as poverty, gentrification, public transit and public funding. Cities and mobilities are inextricably linked and they continue to evolve together. This paper examines how urban and suburban forms of the city are built upon racialized mobility. Instead of displaying "car light" white populations that are gentrifying urban areas as winners we should be looking at the entire system of mobility within a city and how we can improve racial inequalities, access to jobs, safer neighborhoods and improved transit.

Keywords: racial mobility, transit, transportation justice, urban sustainability

9. Salingaros, Nikos A. "Connecting the fractal city." *5th Biennial of towns and town planners in Europe, Barcelona* (2003).

From the department of Applied mathematics at the university of Texas, Nikos Salingaros discusses what constitutes a fractal city and how the introduction of the automobile and large populations interrupted these fractal properties in the modern urban fabric. Fractal is defined from a mathematical standpoint as something that possesses structure on a hierarchy of scales, coherence and self similarity and has components at all sizes, from the size of the city down to the microstructure of building materials. In conclusion he stresses that we may have false ideas of modernity and need to look at successful historic cities that are fractal and able to reconnect the urban fabric through the sum of its smaller parts.

Keywords: urban fabric, mathematical architecture

10. Rembeza, Magdalena, and Aleksandra Sas-Bojarska. "The changing nature of in-between spaces in the transformation process of cities." *Urban Planning* 7, no. 1 (2022): 32-43.

This paper examines the in-between spaces of cities and how connecting these spaces can create many positive changes such as preventing existing problems, improve the compactness of existing cities and increase the quality of life. These in-between spaces create a flow of goods, people and ideas and without public infrastructure there is a huge gap in the urban fabric. In conclusion she asserts that cities should not be viewed as static objects but they are the product of micro and macro changes .

Keywords: in-between spaces, urban transformation, connecting urban structure

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11. Isoke, Zenzele. 2013. *Urban Black Women and the Politics of Resistance*. The Politics of Intersectionality. Basingstoke: Palgrave Macmillan.

This book is written by Zenzele Isoke, a black feminist theorist, urban ethnographer and political storyteller. In chapter 3: Making Place in Newark: Neoliberalization and Gendered Racialization in a US city, she examines how cityscape intersects with historic gendered racialization. She explains how cities are built spaces that communicate meaning, they organize pattern, flows and interpretations of human actions and interactions. She goes on to discuss who belongs to a city, the political power at hand and how the cities vision evolves depending on who is in power. Neoliberalization is loosely defined as policies or practices that aim to wear away social projects and programs that place the needs of "all" over the profit-making groups by creating new markets. This includes privatization, securitization and looking down upon social policies such as welfare, public education, and healthcare.

Keywords: urban ; black women; cultural, spatial, gendered racialization

12. Tiwari, Reena. *Connecting places, connecting people: a paradigm for urban living in the 21st century*. Routledge, 2017.

This book explores what is needed to create a paradigm shift in how we connect places in the US. It requires us to focus on the people and places rather than the movement of vehicles. Car based planning has led to a disconnect within our communities. There are four parts to the book that explores the following topics: (1) what is a better community and how is it defined, (2) urban reconfiguration techniques, (3) how to reconnect people and place in the right way and (4) the future of placemaking. She concludes that there needs to be a paradigm shift away from car based planning to place based urban planning.

Keywords: connecting spaces, urban spaces, placemaking

13. Asal, Elaine, Sabrina Mason, Sophie Morley, Allie O’Neil, and Genevieve Will. *Architect’s Role in Creating Equitable Communities*. The American Institute of Architects, September 2022. Last modified September 2022. Accessed February 8, 2024. https://content.aia.org/sites/default/files/2022-09/Architects_Role_in_Creating_Equitable_Communities.pdf.

This document was a joint effort between the Neighborhood Design Center which works with PG County and Baltimore City County, and Gensler and was published by AIA. The document outlines the framework and actionable tools, tactics and strategies that can be used to create equitable communities. A few of these tools include recalibrating office cultures, learning together, redefining what we give, engaging with policy, education and mentoring, involvement with community, community asset mapping, stakeholder advisory groups and co-designing with the community. The paper concludes with a call to action, urging architects to utilize these tools in order to create more equitable communities.

Keywords: Equitable communities, actionable tools, community involvement

14. Reeves, Alexander. “[Beta] Space: Reprogramming Urban Infrastructure to Reconnect Society,” 2016.

A thesis student at Hammons University, Alexander Reeves studied Cleveland’s disconnected neighborhoods, split by public infrastructure and a disengaged waterway. He discusses the issues that infrastructure plays with connecting cities while simultaneously disconnecting areas which then causes barriers for urban growth and marginalizing nearby cities. Reeves concludes that community involvement, a multifaceted approach, and reprogramming otherwise obsolete spaces can create a “Beta” space that eliminates barriers between communities.

Keywords: urban infrastructure, reconnect, marginalized; social divides

15. Velasco, Gabi. “In Gentrifying Neighborhoods, Placemaking Can Restore Community Connections.” *Urban Institute*. Urban Wire, October 26, 2023. Last

modified October 26, 2023. Accessed February 8, 2024. <https://urban.org/urban-wire/gentrifying-neighborhoods-placemaking-can-restore-community-connections>.

As a policy analyst in the Research to Action Lab at the Urban Institute, Gabi Velquez defines placemaking as community input but how exactly is that community defined? By first evaluating who is affected by a project it can then be determined if it will breakdown inequalities amongst that group or further reinforce them. Without addressing the local residents needs or concerns an entire community could be displaced. Some of the examples of displacement causes are neglecting anti displacement measures and landlord regulations, tax breaks to developers and development-directed policing. She provides a great case study in Brooklyn NY that reinforces providing gov't funding to local agencies involved in the community has a much greater impact combating gentrification. In conclusion we must shift the power to the community, whether that's through hiring locals to participate in data analysis or becoming a senior paid staff at a local agency.

Keywords: gentrification, displacement, communities, shifting power

16. Iseki, Hiroyuki, and Robert P. Jones. "Analysis of firm location and relocation in relation to Maryland and Washington, DC metro rail stations." *Research in Transportation Economics* 67 (2018): 29-43.

Transit Oriented Developed (TOD) is a tool to gain economic growth. This paper explores four questions of TOD: (1) Distribution of firms near metros, (2) what industries are these? (3) does the metro affect their relocations (4) does a new station result in net gain of firms and for the region? This literature review uses economic, statistic and spatial analysis to examine how companies may move in or out of an area that has a new metro station. In conclusion Montgomery County had a correlation with firms relocating to areas near their metro lines but Prince George's did not. TODs should use their efforts towards attracting new firms, rather than relocating firms from within the same region.

Keywords: Transit Oriented Development, Metro Stations

17. Knox, Paul L. "The restless urban landscape: economic and sociocultural change and the transformation of metropolitan Washington, DC." *Annals of the Association of American Geographers* 81, no. 2 (1991): 181-209.

While this paper was written over 30 years ago there is a lot of economic knowledge that is still relevant to the current economy with regards to the metro area. Paul Knox explains that there is a new urban setting that is creating an epochal change in contemporary capitalism with includes: private master planned communities, high-tech corridors, mixed use development, gentrified neighborhoods and historic buildings. He highlights the transfer from the "fordist" industrial capitalism to advanced capitalism. In conclusion Knox reiterates how this new capitalism is reinforcing broad fragmentation and polarization of urban spaces.

Keywords: Economic change, metro rail, urban landscape, flexible accumulation

18. Hackworth, Jason, and Neil Smith. "The changing state of gentrification." *Tijdschrift voor economische en sociale geografie* 92, no. 4 (2001): 464-477.

Jason Hackworth examines and explains how gentrification has changed due to state involvement and why it has increased. Prior to the turn of the century many areas were reducing state intervention of gentrification, but the federal government placed pressure on the states to pursue redevelopment and gentrification to create tax revenue. Alongside the states incentives, diffusion of gentrification was a possibility and it poses profit risks. In conclusion there have been waves of gentrification and its historically documented those profits from prior waves are being reinvested for larger, more corporate developments.

Keywords: gentrification

19. Wolf, Kathleen L., and Alicia ST Robbins. "Metro nature, environmental health, and economic value." *Environmental health perspectives* 123, no. 5 (2015): 390-398.

Kathleen Wolf and Alicia Robbins conduct a literature review examining economic value of green systems. There is a lot of empirical evidence cited those green spaces, whether constructed or endemic, contribute to public health co-benefits. Although there isn't any information collected on potential economic benefits, it was concluded that nature provides diverse and substantial benefits to populations in cities.

Keywords: metro, transit-oriented development, nature and health

20. Wendel, Heather E. Wright, Joni A. Downs, and James R. Mihelcic. "Assessing equitable access to urban green space: The role of engineered water infrastructure." *Environmental science & technology* 45, no. 16 (2011): 6728-6734.

This paper studies the link between environmental justice and urban water management to evaluate potential improvement. Green space is defined as vegetation, water or any permeable surface that facilitate hydrological processes. Some examples of these are parks, lakes, community gardens, cemetery, stormwater ponds etc. In conclusion the study suggests that converting stormwater ponds or "grey infrastructure", to traditional greenspace can enhance social and environmental benefits.

Keywords: environmental, equitable, greenspace

21. Hurley, Amanda Kolson. "National Harbor Is a Private Urban Island Designed for Fun-If You Can Get There." *Washington City Paper*. Last modified August 29, 2020. Accessed February 15, 2024.
<https://washingtoncitypaper.com/article/190373/national-harbor-is-a-private-urban-island-designed-for-fun-if-you-can-get-there/>.

Written by Amanda Hurley who is an editor for Bloomberg Green and has contributed to many architectural articles critiquing buildings and urban planning projects in DC. In this article she critiques National Harbor's presence within the DC metro area and its "woeful lack of connectivity". She compares National Harbor to other local privately planned spaces and other public spaces such as Barcelona. In these comparisons she addresses how it has an essence of their design but fails short in every way. She describes National Harbor as an archipelago that only has one way in and out, rather than a necklace, such as Boston's necklace of greenspaces.

Keywords: Archipelago, Pearl Necklace, private public space

22. Kayden, Jerold S, New York (N.Y.). Department of City Planning, and Municipal Art Society of New York. *Privately Owned Public Space : The New York City Experience*. New York: John Wiley, 2000.

Published by NY Department of City Planning this book examines privately owned public spaces within New York City and how their development has evolved over the years. In order to encourage public space engagement near dense urban buildings, New York City incentivized developers with FAR exceptions and other zoning exceptions so that they would create more open and accessible areas. This book helps point out issues in design implementation and how private owners can work with public officials and civic groups to help with public access and vitality.

Keywords: privately owned public space,

23. Lee, Dahae, and Nele Scholten. "Co-production of privately owned public space: Who, why, when, and how?." *URBAN DESIGN International* (2024): 1-11.

This article was authored by Dahae Lee and Nele Scholten as a part of the Urban Design International publication. They introduced a recently introduced term, co-production, which is broken down into two parts- the actors and motivators and the phases and instruments. Through this terminology they are able to evaluate privately owned public spaces (POPS) based on the two sides of co-production. The actors are broken down into public section, private sector and the public and this brings four phases of production- co-planning, co-designing co-delivery and co-management. Evaluating privately owned public spaces is important because it is common in urban redevelopment projects. The study concludes that when public spaces are privately owned they can still include public engagement.

Keywords: co-production, public space, privately owned, POPS

24. "National Harbor: Laying the Groundwork for Legacy." *LandDesign*. Last modified July 21, 2023. Accessed February 15, 2024. <https://landdesign.com/project/national-harbor-2/>.

This article was published by Land Design, the firm that designed and help implement the master plan for National Harbor. They discuss the key factors that they used during the design process, including creating an iconic identity, meeting evolving demands, activate the public realm and a timeless brand identity.

Keywords: demands, identity, master plan

25. *National Harbor Development Activity Monitoring System* (Prince George's Planning Department 2015).

This is a public resolution recorded by Prince George's County Planning Board regarding the conceptual site plans and zoning ordinances of National Harbor Parcels. It outlines several different zones, their existing and approved uses, their size and allowable FAR. The document also discusses the design features of these parcels and the five basic zones; The Point, Central Waterfront, North Cover, The Pier and Upland Resorts. It also mentions the public roadways that are to be constructed and the access points that intersect with Oxon Hill Road to be for emergency use only.

Keywords: zoning, variance, FAR

26. Kaw, Jon Kher, Hyunji Lee, and Sameh Wahba, eds. *The Hidden Wealth of Cities : Creating, Financing, and Managing Public Spaces*. INSERT-MISSING-SERVICE-NAME. Washington, D.C.: World Bank, 2020.

Kaw, Lee and Wahba explore the public realm and its public space assets. They mention that these assets can be overlooked due to rapid urbanization, poor planning and financial limitations. The issues that can arise from this are congestion, vehicle-centric pathways and pollution. Smart and sustainable strategies developed from working with all of the stakeholders (private, government, and community level) can lead to human-centered, economical vibrant and socially inclusive places. The book provides asset management strategies for both government and privately owned public spaces.

Keywords: economics, stakeholders, public assets

27. Marshall, Alex. *How Cities Work: Suburbs, Sprawl, and the Roads Not Taken*. New York, USA: University of Texas Press, 2001. <https://doi.org/10.7560/752399>

Alex Marshall is an independent journalist from New York City and was a Senior Fellow at Regional Plan Association, the seminal urban planning organization in New York City. In this book he discusses the forces that are shaping cities and compares case studies around the US. Transportation, industry, business and politics are some of the factors considered when examine the success or failure of these cities.

Keywords: decentralization, sprawl, suburbs

28. Sas-Bojarska, Aleksandra, and Magdalena Rembeza. "Planning the City against Barriers. Enhancing the Role of Public Spaces." *Procedia Engineering* 161 (2016): 1556–62. doi:10.1016/j.proeng.2016.08.626.

Published by Gdansk University of Technology within the Department of Urban and Regional Planning in Gdansk, Poland. Sas-Bojarska and Rembeza research the destruction of the urban fabric and landscapes and to avoid it. They suggest the city should be viewed as an organism and all of its smaller parts interact together, such as spatial, environmental, infrastructural social and visual. All of these parts can be manipulated to reconnect the urban tissue and address safety, accessibility and attractiveness of a city. In particular they discuss the interstitial spaces connecting two places such as roads, green spaces and city structures. In their conclusion they specifically mention waterfronts and how they should be connected if not continuously, at least with special links of safe access.

Keywords: tissue, organism, urban fabric, waterfront

29. Welter, Friederike, and Ted Baker. "Moving contexts onto new roads: Clues from other disciplines." *Entrepreneurship Theory and Practice* 45, no. 5 (2021): 1154–1175.

Welter and Baker examine entrepreneurship within the built environment. Through many different lenses they explore when entrepreneurship has been, where it is going, where it diverges and reemerges. They dive into placemaking how narratives can control a places vision and future, who controls these narratives and how they can help realize that vision. They also discuss how built environments can shape entrepreneurship, such as Silicon Valley and how it can help diversify it. In conclusion, historical memory and regional narratives can be combined with the build environment to create entrepreneurial places.

Keywords: contextual entrepreneurship, placemaking, places

30. Bocca, Antonio. "Public space and 15-minute city." *TeMA-Journal of Land Use, Mobility and Environment* 14, no. 3 (2021): 395-410.

The Journal of Land Use, Mobility and Environment discusses challenges of the city as well as the methods, tools and best practices to help combat these challenges. In the article "public space and the 15 minute city" Bocca from the Department of Architecture at Annunzio University examines how the covid pandemic has changed society's perception of space and cities. He mentions that essential urban functions and eco-systemic connections became prioritized during this time period and how they can be polarizing. We used to have one central area of a city but multipolarity has become more prevalent at different urban scales. He urges designers to rethink the city's use and role, new forms of tourism within residential contexts, reduce inequalities and calibrate supply of services. Lastly he mentions the concept of urban awareness which is considered to be a 'sustainable habitat', we need to think about multiple scales, possible synergies and bi-unique relationships.

Keywords: urban scales, changing city, rethinking the city, pandemic, covid

31. Rosalind S Helderman - Washington Post, Staff Writer. "National Harbor Seeks More Public Cash: [FINAL Edition]." *The Washington Post*, Jun 13, 2007. , <https://www.proquest.com/newspapers/national-harbor-seeks-more-public-cash/docview/410158758/se-2>.

This article by Rosalind S. Helderman, a staff writer at The Washington Post, discusses the financial aspects of the National Harbor project. National Harbor, a waterfront development located in Maryland near Washington, D.C., was seeking additional public funding at the time of the article's publication. This article provides insights into the financial dynamics of the National Harbor project and sheds light on the relationship between public funding and large-scale development projects. Helderman's coverage offers a glimpse into the complexities involved in financing such initiatives and the considerations faced by developers and public officials alike. The article's relevance extends beyond the specifics of National Harbor, serving as a case study for understanding public-private partnerships in urban development and the allocation of taxpayer funds for infrastructure and economic growth.

Keywords: funding, national harbor, economics, development

32. "National Harbor: And the Environment?: [FINAL Edition]." *The Washington Post*, Jan 23, 2000. B08, <https://www.proquest.com/newspapers/national-harbor-environment/docview/408592268/se-2>.

This article from The Washington Post, published on January 23, 2000, explores the relationship between the National Harbor development project and its environmental impact. Although the authorship is not specified, the article appears to provide insights into the environmental considerations associated with the development of National Harbor, a waterfront project located near Washington, D.C. Given the significance of environmental concerns in contemporary urban planning and development, this article likely addresses issues such as habitat preservation, water quality, and sustainability measures implemented within the National Harbor project. Despite the lack of specific authorship information, the article's content is expected to contribute valuable perspectives on the intersection of large-scale urban development and environmental conservation efforts.

Keywords: urban development, environmental impact

33. Pyatt, Rudolph A., Jr. "THE REGION; Thoroughly Misunderstood National Harbor: [FINAL Edition]." *The Washington Post*, Jan 27, 2000. E.3, <https://www.proquest.com/newspapers/region-thoroughly-misunderstood-national-harbor/docview/408571257/se-2>.

This article authored by Rudolph A. Pyatt Jr. discusses the National Harbor project, shedding light on aspects of the development that are often misunderstood. Published in The Washington Post on January 27, 2000, the article offers insights into the complexities

surrounding the National Harbor initiative, providing readers with a deeper understanding of its objectives, challenges, and potential impacts. Pyatt's article offers a perspective on the National Harbor project, aiming to address prevalent misunderstandings surrounding its conception and execution. As a commentator on regional affairs, Pyatt Jr. provides valuable analysis and interpretation of the project's significance within the broader context of urban development and economic growth in the region. This article is likely to provide readers with critical insights into the motivations behind the National Harbor initiative and the factors influencing public perception and discourse surrounding it.

Keywords: national harbor, development, economic, incentives

34. "PN14-05 (National Harbor (Formerly Port America) Prince George's County)." *Baltimore District*. Last modified January 16, 2014. Accessed February 25, 2024. <https://www.nab.usace.army.mil/Missions/Regulatory/Public-Notices/Public-Notice-View/Article/494166/pn14-05-national-harbor-formerly-port-america-prince-georges-county/>.

This public notice from the U.S. Army Corps of Engineers offers valuable information regarding regulatory processes and public engagement related to the National Harbor project in Prince George's County, Maryland. While not a traditional scholarly source, this document is significant for understanding the formal procedures and considerations involved in the development of large-scale infrastructure projects like National Harbor. Researchers interested in the legal and regulatory aspects of urban development will find this document particularly useful for gaining insights into the permitting and approval processes governing such initiatives. Additionally, it provides a primary source for understanding the government's role and responsibilities in overseeing projects of regional importance.

Keywords: National Harbor, public notice, urban development

35. Gerritse, Michiel, and Daniel Arribas-Bel. "Concrete agglomeration benefits: do roads improve urban connections or just attract more people?" *Regional Studies* 52, no. 8 (2018): 1134-1149.

In this article published in *Regional Studies* in 2018, Gerritse and Arribas-Bel examine the relationship between the construction of roads and urban agglomeration benefits. Specifically, they investigate whether roads primarily enhance connectivity within urban areas or merely attract more individuals to those areas. The study delves into the complex dynamics of urban development and transportation infrastructure, offering insights into the mechanisms through which road networks influence the spatial distribution of economic activities and population.

Keywords: roads, connectivity, infrastructure, economic activities, urban planning

36. Mitrašinović, Miodrag. *Total Landscape, Theme Parks, Public Space*. Design and Built Environment Series. Aldershot: Ashgate, 2006.

This paper evaluates public spaces within theme parks and how this creates a totalization effect. The fantasy environment of a theme park is interesting to analyze since technology and design has changed within the twenty first century. This could be applied to other public spaces outside of a theme park and how the ethos and expectations of these places can have an effect. The book goes into further depth about total landscape, Heritage Centers, and theme parks as environments.

Keywords: theme park, public space, heritage centers

37. Alberti, Francesco, ed. *Urban and Transit Planning : City Planning : Urbanization and Circular Development* (version Third edition.). Third ed. Advances in Science, Technology & Innovation.. Cham: Springer, 2023.

Alberti examines urban planning after the effects of the COVID19 pandemic. He defines five different concepts of urbanism which are car-oriented, cities as ecosystems, human centered urban planning, and agile urbanism. He mentions how the widespread use of the car pushed urban planning to its max at the time to accommodate these vehicles, it was a prominent paradigm of urban redevelopment. He also discusses the differences of the 15 minute and 1 minute city and how this considers the direct residents and not the entire neighborhood.

Keywords: city planning, urbanization, circular development, transit planning

38. Shamai, Shmuel, and Zinaida Ilatov. "Measuring sense of place: Methodological aspects." *Tijdschrift voor economische en sociale geografie* 96, no. 5 (2005): 467-476.

In this article published in the Journal of Economic and Social Geography in 2005, authors Shamai and Ilatov explore the considerations involved in measuring the concept of "sense of place." The paper addresses the challenges in quantifying and analyzing individuals' subjective perceptions and emotional attachments to geographic locations. Drawing on perspectives from geography, psychology, and sociology, they evaluate approaches to measuring sense of place. Their discussion encompasses various quantitative and qualitative techniques, including surveys, interviews, and participatory mapping exercises, highlighting the strengths and limitations of each method. By offering insights into the complexities of sense of place assessment, this article contributes to advancing theoretical understanding and empirical investigation of the role of place attachment in shaping human behavior and spatial dynamics.

Keywords: sense of place, psychology, emotions,

39. Najafi, Mina, and Mustafa Kamal Bin Mohd Shariff. "The concept of place and sense of place in architectural studies." *International Journal of Humanities and Social Sciences* 5, no. 8 (2011): 1054-1060.

Najafi and Shariff, explores the concepts of "place" and "sense of place" within the context of architectural studies. The authors delve into the theoretical footings of these concepts, drawing from interdisciplinary perspectives such as architecture, environmental psychology, and cultural geography. Through a comprehensive review of literature, Najafi and Bin Mohd Shariff elucidate the multifaceted nature of place and sense of place, emphasizing their significance in architectural theory, design practice, and the built environment. They discuss how architects and urban planners can integrate considerations of place attachment, identity, and meaning into their work to create more responsive and meaningful built environments. It provides a foundational framework for further analysis between human experiences, spatial qualities, and the built environment.

Keywords: place, environment, attachment, cultural geography

40. Brown, DeNeen L. "Using Painful Pieces of History, Prince George's Hopes to Boost Tourism Plantation Life's Underside." *The Washington Post*, Jun 04, 2014. , <https://www.proquest.com/newspapers/using-painful-pieces-history-prince-georges-hopes/docview/1531854818/se-2>.

DeNeen L. Brown's article provides valuable insights into the intersection of history, tourism, and cultural heritage preservation in Prince George's County. By focusing on the county's efforts to confront and interpret its painful history, particularly the legacy of slavery, the article sheds light on the complexities of heritage tourism and commemoration. Brown's reporting highlights the significance of acknowledging and engaging with difficult historical narratives, not only for fostering a deeper understanding of the past but also for promoting reconciliation and healing in the present. The article serves as a thought-provoking resource for scholars, policymakers, and community stakeholders interested in the ethical and practical dimensions of heritage interpretation and tourism development, especially in contexts marked by traumatic histories and social injustices. Additionally, it offers valuable insights into the role of public memory and commemorative practices in shaping collective identities and narratives of place.

Keywords: heritage tourism, healing, trauma, history

“Eight Principles of Tod.” *ITDP*. Accessed February 27, 2024. <https://tod.itdp.org/what-is-tod/eight-principles-of-tod.html#:~:text=The%20Eight%20Principles%20of%20TOD%20are%20WALK%2C%20CYCLE%2C%20CONNECT%2C,to%20evaluate%20and%20plan%20neighborhoods>.