Redefining the Waterfront
A Foresight Study

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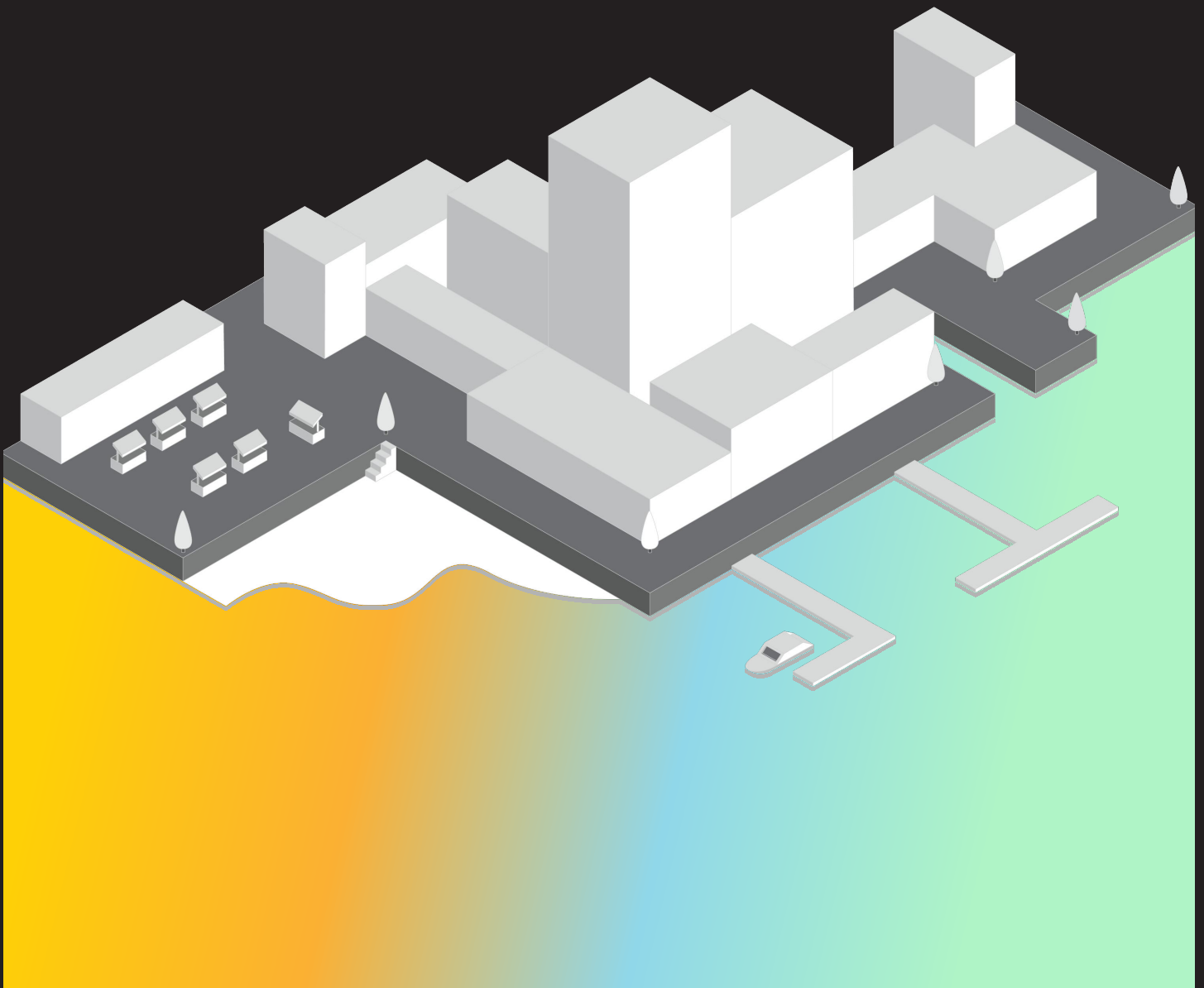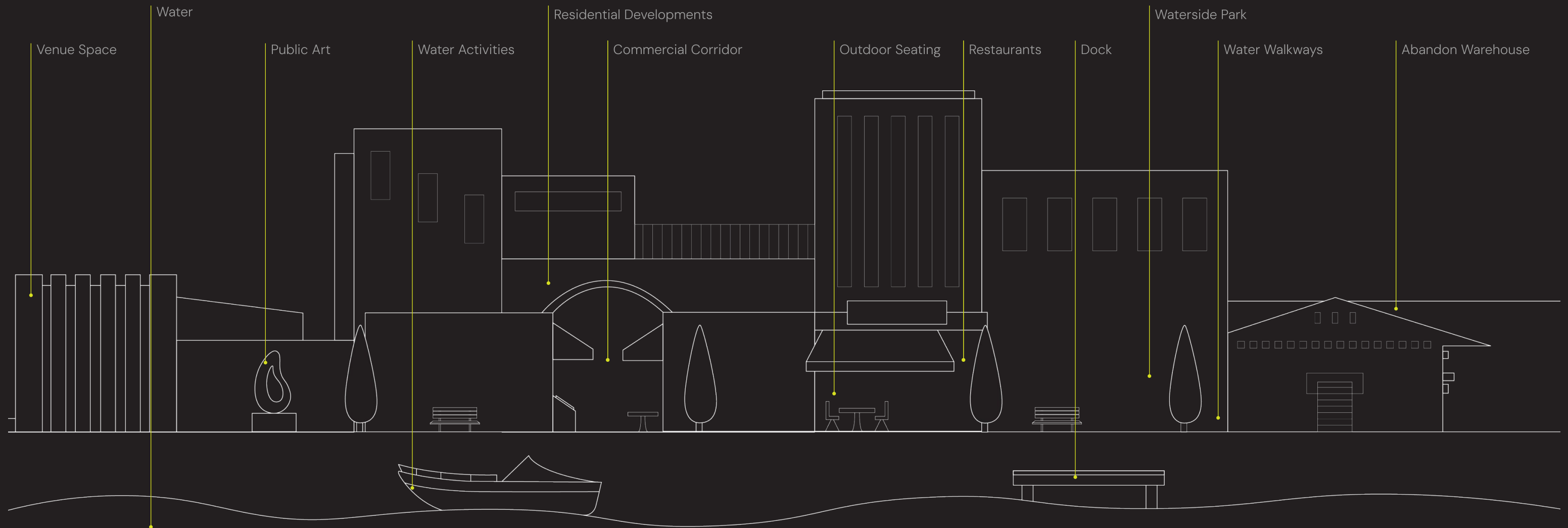
"Water links us to our **neighbor** in a way more profound and complex than any other."

John E. Thorson, *Dividing the Waters*

What Is a Waterfront?

The waterfront is a district where water is the community's major economic engine and cultural anchor. Cities not only need to think about how to redevelop waterfronts to attract tourists and boost economic growth, but also do so in a way that prioritizes environmental resiliency and reconnects with local communities.

Venue Space

Water

Public Art

Water Activities

Residential Developments

Commercial Corridor

Outdoor Seating

Restaurants

Dock

Waterside Park

Water Walkways

Abandon Warehouse

*Not a comprehensive list

An Industrial Shift Through Time

Water–Based Industrialization

For centuries, waterfronts were logistics hubs that served as the gateway to the city. Harbors and ports were the core infrastructure transferring people and goods between other places in the city and other places in the world. While these facilities were fixed, they were designed to facilitate activities that were very ephemeral. People got on and off ships through a ferry terminal, and goods were sorted and processed at cargo ports. Things were passing through at various scales and speeds, but very few stayed for the sole purpose of enjoying the nature of the waterfront.

Tourism Economy

As transportation costs became cheaper and industrial sites moved away from the water in dense urban cores, cities started to recognize the waterfront as a vital asset for attracting both visitors and businesses, and for incentivizing developments around the area that would further generate revenue for the city and transform its image. As a result, there is now a good mix of parks and trails, outdoor restaurants and plazas, and entertainment spaces seen in many urban waterfronts that allow residents and tourists alike to rest, socialize, and view the city at a unique space between urbanization and nature.

A Sandbox For The Future

With a space as ecologically empowering as the waterfront, there are many creative ways to bring people together in addressing environmental and communal concerns while managing tourism and economic growth for the city as a whole. Cities are increasingly treating waterfronts as an experimental hub to test and pilot technologies and programs that can serve a multitude of interests at once. At the same time and forthcoming, waterfronts are testing grounds for thinking beyond the box, housing ideas and designs that overcome societal status quos, and creating tangible manifestations of a more inclusive and equitable vision.

IDEA

TEST

ADD
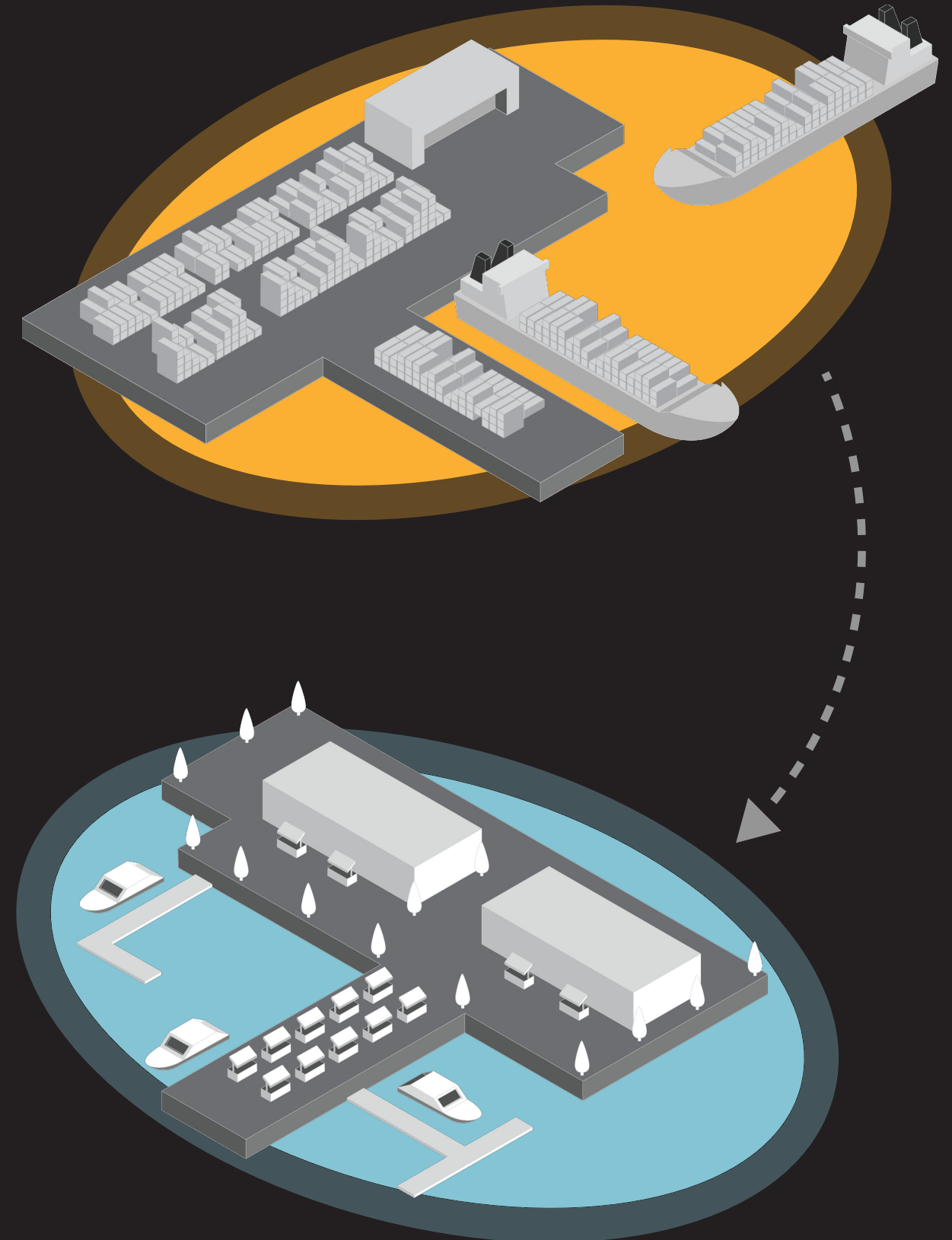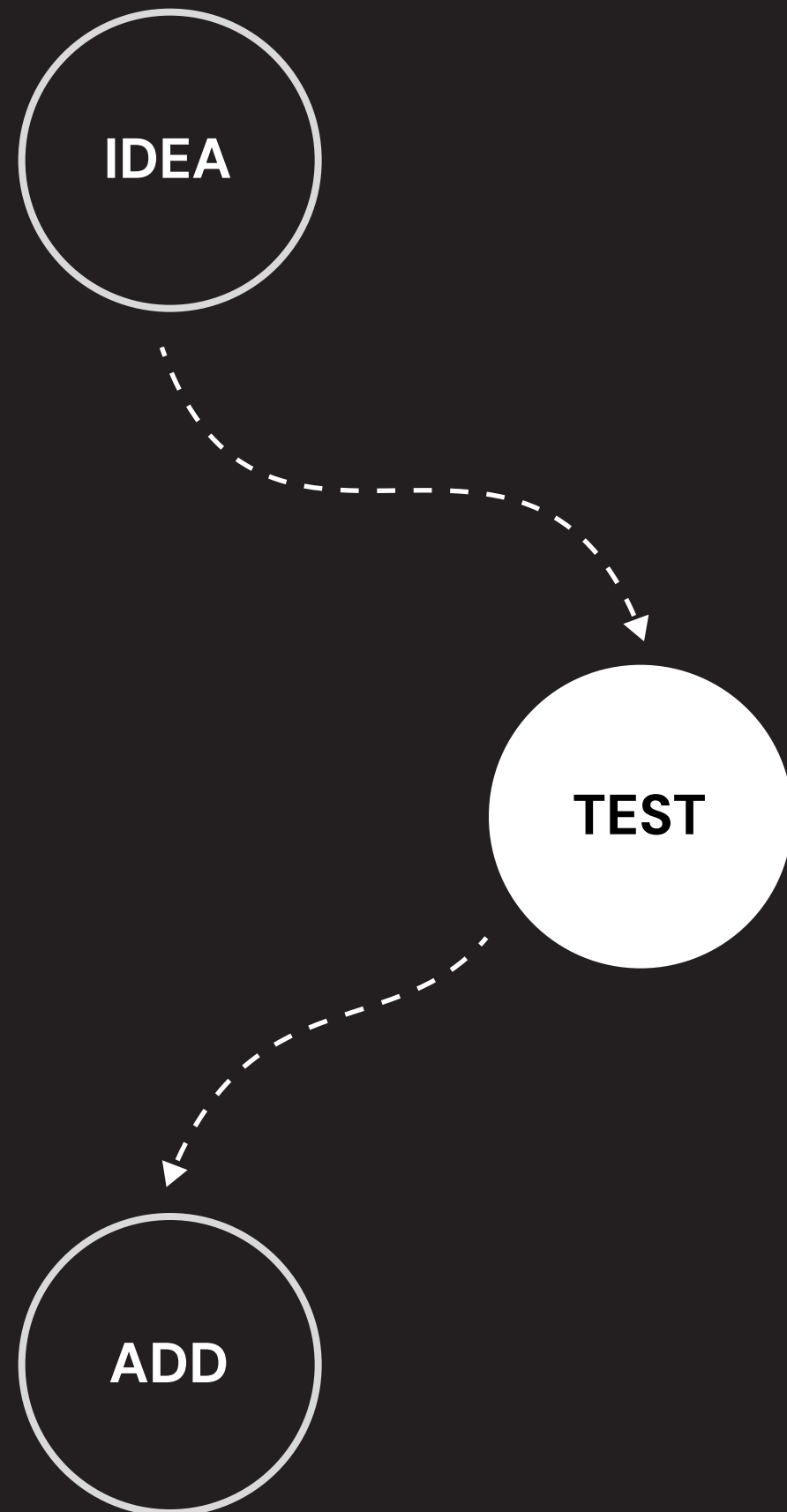
Testbeds for the Future

Waterfronts are a precious asset for the city from both an economic standpoint and an ecological perspective. However, these areas of interest are often at conflict with one another. Not only does the city have to strengthen shorelines without disrupting businesses or preventing access to the water, they also have to shift redevelopments to benefit surrounding communities and not just tourists. Clearly, many issues and interests intersect at this transition zone. At the same time, because of the waterfront's intersectional nature, it becomes a testing ground and an experimental hub that provides a glimpse into how these interests could be met and managed in the future.

The Waterfront Framework

How does one categorizes something that is physical, digital, and social? We developed a framework meant to encapsulate these different characteristics to provide a more through understanding of the disparate forces at play effect waterfront development.

Framework Design

As waterfronts have transformed in purpose, the range of stakeholders impacted by new developments has also broadened. Today, these areas serve as a proving ground for new technologies, construction methods, and commercial strategies – each with distinct effects on local communities and ecosystems. This framework aims to categorize these shifts, offering a clear analysis of the key trends driving the rapid growth of this thriving dynamic hub.

**Community** ⟵――――――――⟶ **Tourist**

Horizontal Axis: The Target Audience

Positioning on this axis reflects the scale at which experiences are being redefined. Projects aligned towards **Community** emphasize engagement with surrounding neighborhoods and social groups, while those aligned towards **Tourist** prioritize enhancing individual visitor experiences.

Environmental ⟵――――――――⟶ **Social**

Vertical Axis: The Function

Positioning on this axis reflects the primary focus and functionality of the solution or project. Projects aligned towards **Environmental** emphasize modifying natural surroundings and ecological infrastructure, while those aligned towards **Social** prioritize reshaping how users interact with each other and the surrounding urban landscape.
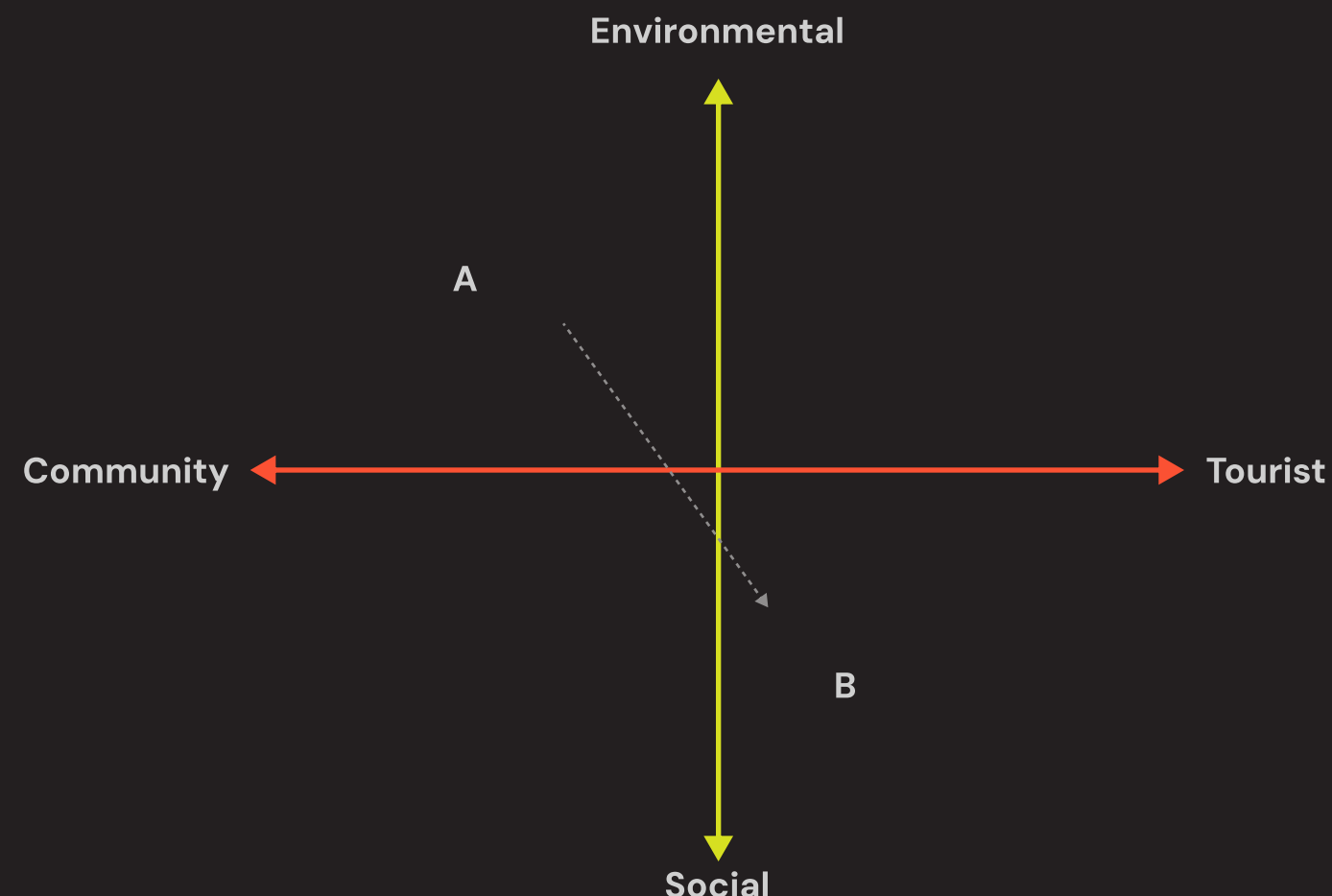
Putting It All Together

The two axes form a quadrant based structure that serves as a strategic tool for assessing the waterfront's current development focus. Plotting on this graph gives insight into the current state and trajectory of the orientation of project initiatives. This framework illustrates where a waterfront sits and allows for a clearer understanding of how it can evolve from point A to point B by adjusting its priorities and strategies in alignment with broader developmental trends.

Quadrant Definitions

Restore Ecological Infrastructure (upper left)
A balancing act of enhancing the environmental resilience of future waterfronts while meeting the needs and desires of local businesses and residents. There should be harmonious interactions between communities, institutions, and the physical environment. Several measurable outcomes include informed responses pertaining to flooding and sea level rise, habitat preservation, rebalanced land stewardship, mixed use of green spaces and local businesses, and improved health and wellbeing.

Reconnect with Water (upper right)
Waterfronts can increase access to the actual water that makes them attractive in the first place, allowing for a wider range of aquatic activities that are open to the public and can enable greater sociability. Increasing access to the water also requires creative designs so that the shoreline acts as an open gateway while simultaneously forming a protective barrier against climate risks. The activities themselves should at least incorporate aquatic elements if not fully immersed in them. They should also be easily accessible by a broad set of people who visit the waterfront. Not only do these activities serve entertainment purposes but they also provide interactive opportunities that embrace and highlight the local culture.

Rebuild Community Power (lower left)
Potential futures where local communities are at the center of change. Through placemaking and grassroots movements, the waterfront becomes a reflection of the pluralistic identities of the surrounding communities. In order to achieve this vision, public–private partnerships need to create opportunities for active involvement from residents, community-oriented organizations, local businesses, and civic services. Instead of creating a monotonous landscape, the many different waterfront elements should bring out the idiosyncratic and niche corners of the local cultural scenery and tie them together into one cohesive yet layered social environment.

Reinvent Cultural Experience (lower right)
Use the waterfront as an experimental hub to transform the user experience. Here is where multi-media exploration can enhance sensory perceptions of interacting with landmarks. Here is also where the development of large-scale entertainment venues and civic technologies can be used to redistribute people across a popular urban destination to enable the (re)discovery of new places, activities, and traditions that are refreshing for frequent visitors. The waterfront should foster an entrepreneurial spirit that invites a continuous cycle of pilot programs, pop-ups, and grounded virtual experiences that are appreciative of the historical significance of the place yet new.
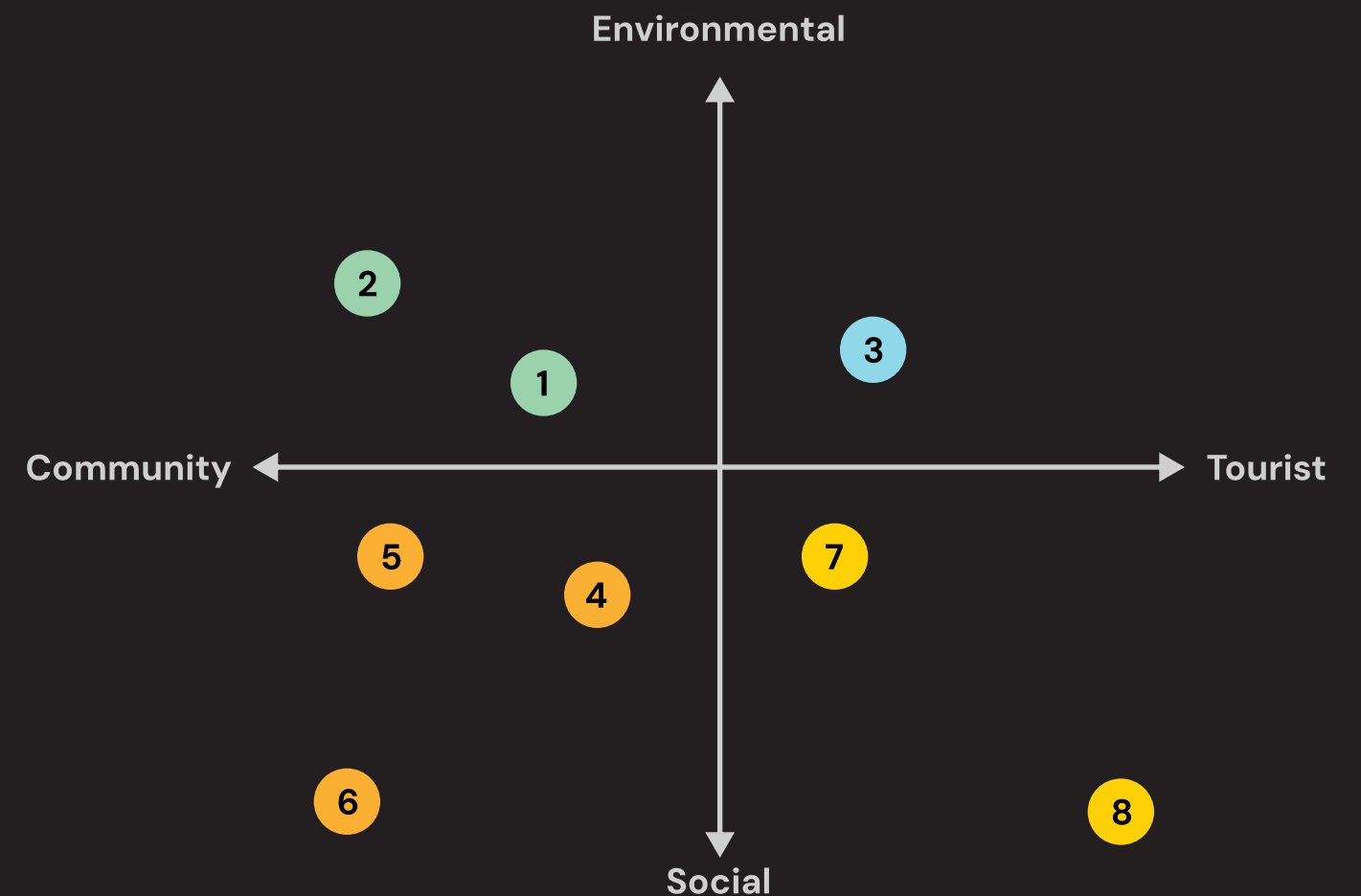
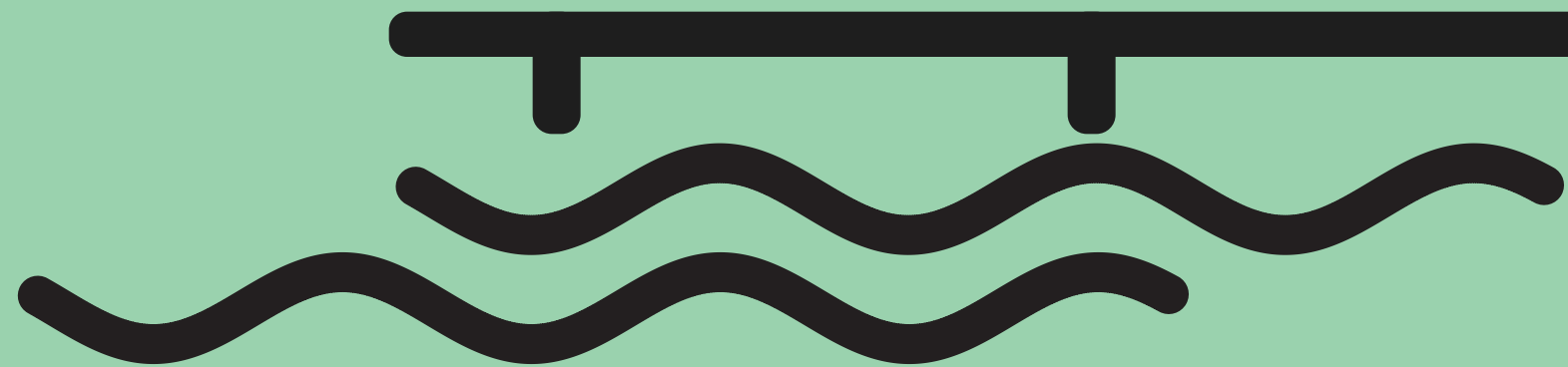1. **Negotiating Conflicts of Interests**
2. **Enhancing Wellbeing Through Water**

3. **Softening Water Boundaries**

4. **Placemaking Through Brand Identity**
5. **Repurposing the Underutilized**
6. **Nurturing Grassroot Presence**

7. **Digitizing Spatial Management**
8. **Establishing An Entertainment Economy**
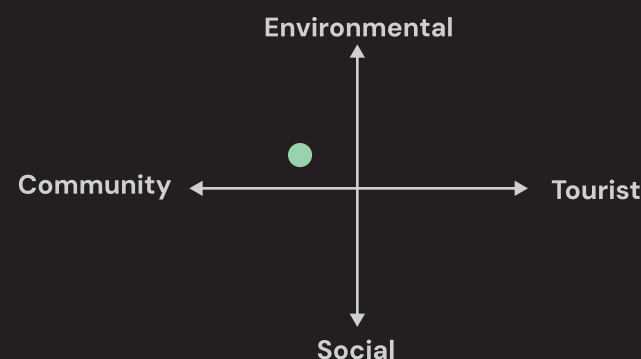
Restore Ecological Infrastructure

1. **Negotiating Conflicts of Interests**
2. **Enhancing Wellbeing Through Water**

Negotiating Conflicts of Interest

WHAT: Waterfront resiliency projects are often initiated across a large scale. As a result, conflicts have arisen between residents and businesses over the level of access to the waterfront during and after redevelopment. The San Francisco Ferry Building is one such example, where plans to raise the entire building by seven feet have angered business owners in the building as their operations will have to be put on hold for an undefined period. The process of making the waterfront a cleaner and greener space can also raise property values and costs of living in the area. Such instances can be seen in East Boston, where recent waterfront developments are pricing out the historical immigrant population.

SO WHAT : Cities need to navigate social and political landscapes to determine suitable climate actions that would benefit the people and institutions closest to the area at risk. Developers should not capitalize on the "carbon-neutral" hype just to jack up housing prices. Those who can no longer afford to live in the surrounding neighborhoods are forced to move elsewhere, with entire communities displaced in the process. Developments should prioritize shared uses which are contextually appropriate and dedicated towards restoring land stewardship, with particular focus on accommodating indigenous populations.

Local businesses wish to maintain operations in SF's Ferry Building as it prepares to be raised in anticipation of sea level rise

Environmental

Community ←——●——→ Tourist

Social

WHAT IF... there is unrestricted use of eminent domain. Through a citywide effort funded by private organizations, the shoreline is moved back by two miles to strengthen the barrier against flooding risks, erasing entire neighborhoods along with residents and businesses in the process.


Green gentrification from new waterfront developments prices out immigrant populations in East Boston

Enhancing Wellbeing Through Water

Fitness programs along the shoreline in Marina Bay Sands

WHAT: The water itself is a fascination that restores an individual's mental energy. There are now more fitness and reflective programs held along shorelines or against the backdrop of a skyline across the water. For example, in Singapore, the iconic Marina Bay Sands is partnering with brands like Lululemon to host Glow Festival, a fitness festival full of yoga classes, training workouts, and sound bath sessions throughout every July. In addition to wellbeing practices on dry land, waterfronts with clean water have opened up areas for people to partake in aquatic activities, such as in Helsinki where ice swimming is now allowed during the winter as part of the Finnish tradition.

SO WHAT : Cities are increasingly creating clean and appealing waterfronts to improve the wellbeing of nearby residents. They recognize that water is a restorative element, a soft ointment that heals individual minds and grounds collective interests. So while visitors can view the harbor from a dry place, they can also dive into the water, maximizing health benefits derived from water–related recreational activities. This immersive experience is a great reflection of experimental methods that showcase cultural traditions and heritage.

Environmental

Community ← → Tourist

Social
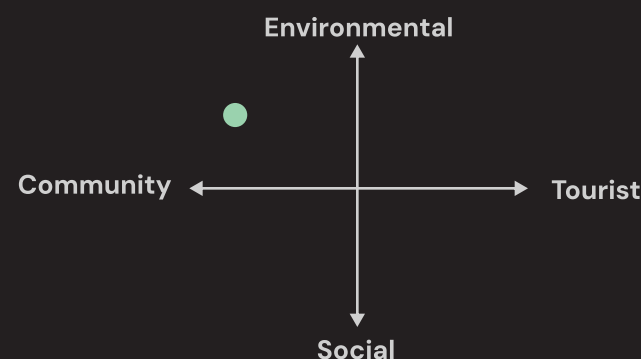
WHAT IF... marine habitats are completely restored. People can now freely swim in the open water and safely interact with aquatic creatures. International boat racing and water polo are now hosted in the heart of urban waterfronts, where the water is clean enough to drink.

Immersive ice swimming around Helsinki's South Harbor

Reconnect With Water

3. Softening Water Boundaries

Softening Water Boundaries

WHAT: Traditionally, waterfront barriers have been a hard and fixed piece of infrastructure that distinctly separates land from water. As cities embrace more innovative ways of increasing access to water, they have also broken down, or at least softened, these boundaries. Across Nordic cities like Copenhagen, where the restaurant La Banchina allows visitors to order food then eat along its pier which is low enough for people to dip their toes in, there are new mixed activities across retail and leisure centered around constant exposure to the water. In Helsinki's South Harbor, people can enter the sauna located right along the shore, then jump into the water right afterwards to have a cold bath.

SO WHAT : By breaking down these physical barriers, waterfronts now provide a myriad of possibilities transforming existing land uses into hybrid forms of aquatic–based leisure and entertainment. These hybrid outcomes provide opportunities to make something as ordinary and routine as eating into activities that are more exhilarating. They also encourage informal and unstructured play for a wide range of audience (think beaches, but mixed with other uses), which reinforces the flexible nature of the waterfront. Overall, increased access to water demonstrates how waterfronts can become more than just an observational place, that they can be widely participatory as well.

Environmental

Community ←——————→ Tourist

Social
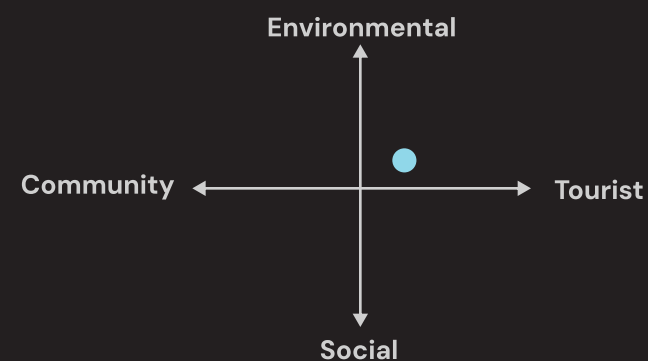
WHAT IF... boundaries are softened not only above ground, but under the surface as well. Large entertainment venues near the shoreline would provide viewing platforms and even access to underground water canals for visitors to interact with sea creatures that live at lower levels.

La Banchina offers a place to eat and dip your toes into the water at the same time
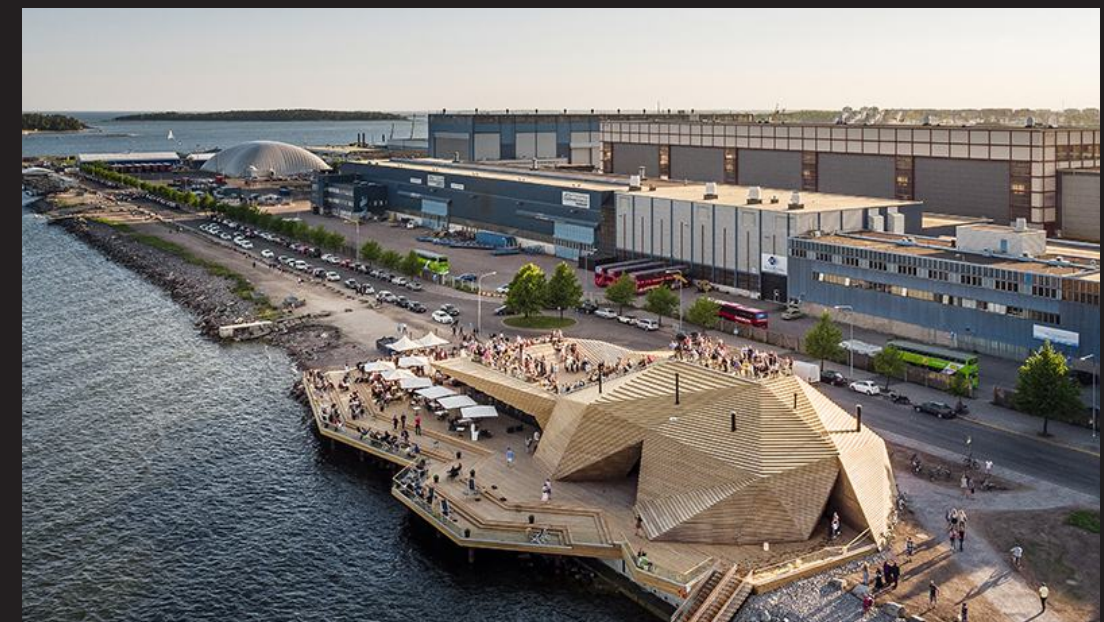
A public sauna along the shoreline of Helsinki's South Harbor, where visitors can jump into the ice cold water afterwards and even spectate various aquatic sports
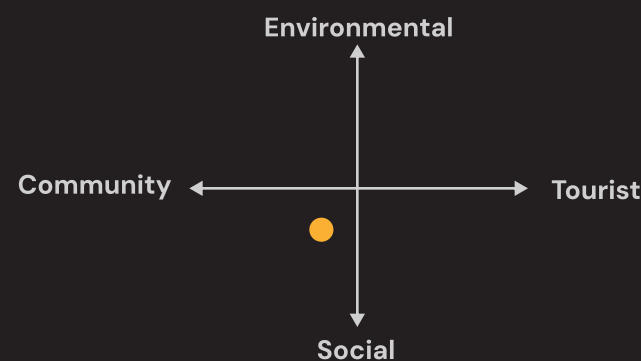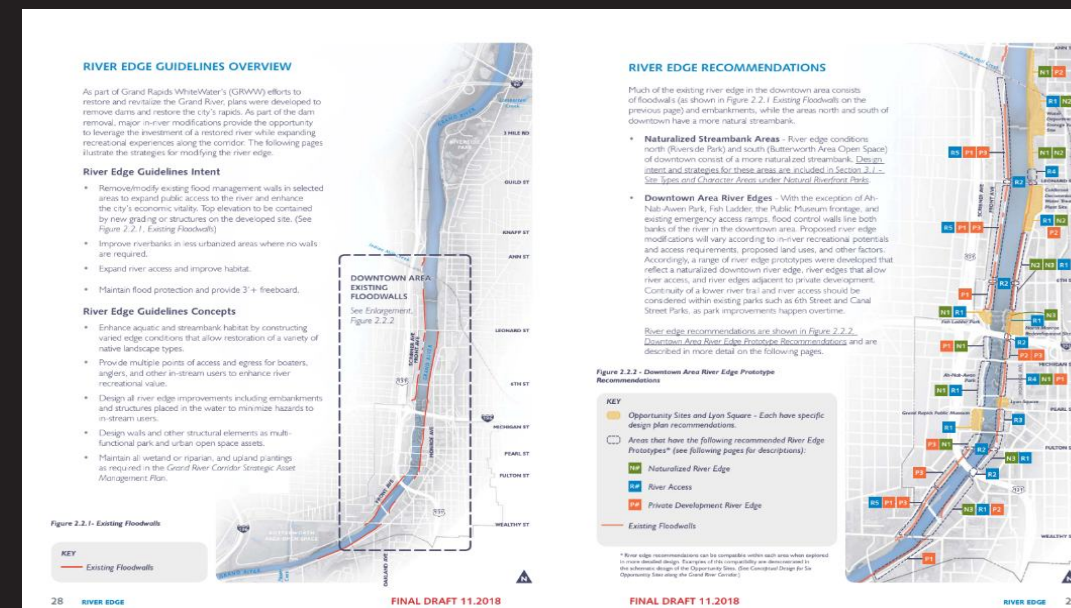
Rebuild Community Power

Placemaking Through Brand Identity

WHAT: Cities are intentionally establishing their waterfront as its own district to practice placemaking and provide collaborative spaces. The district is not exactly jurisdictional, but rather a visual identity. This identity is conveyed through consistent designs of wayfinding, public amenities, and overall aesthetics, as seen in Grand Rapids which has an official guideline of standard designs for park benches, pedestrian and bike trails, and signage features. A multitude of functions, such as the Coal Harbour waterfront in Vancouver where green space is integrated into various exhibition and entertainment venues, enables sociability and opportunities for pop-ups and self-organization.

SO WHAT : Defining a waterfront based on visual identity and mixed uses which are distinct may actually separate itself from other nearby neighborhoods. On the land side, there may be a clear boundary between where the waterfront area ends and where other neighborhoods begin, resulting in a more fragmented social fabric throughout the city. Nonetheless, a waterfront focused on placemaking can celebrate collective pride and highlight the various social and cultural identities of nearby communities.

Detailed design guidelines for various signage, trails, and furnitures for the Grand Rapid WhiteWater restoration project

Environmental

Community ← → Tourist

Social

WHAT IF... merch from waterfronts starts competing with popular brand like Nike and Lululemon? Where it becomes a fashion statement to have a hoodie from the Boston Seaport, or shoes the color of Helsinki's brilliant blue harbor water?
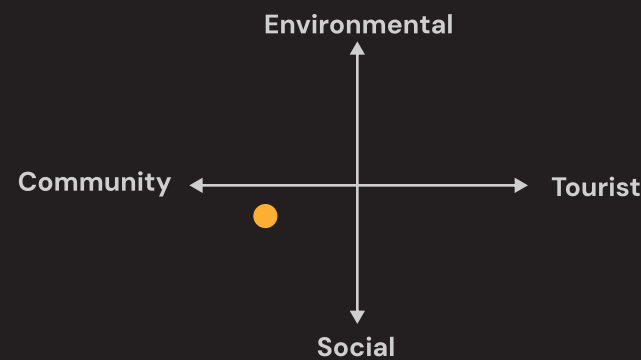

Continuous strips of green space are shared among residents, restaurants, visitors, and exhibition-goers

Repurposing the Underutilized

WHAT: Due to the impacts of de-industrialization from the latter half of the last century, there are still many abandoned or underutilized brownfield sites that sit near urban waterfronts. In some cities like Brooklyn, a collection of industrial buildings in the former Navy Yard have been repurposed into collaborative spaces and incubator centers for BIPOC and women entrepreneurs. In other places like Sydney Harbour, empty land is redeveloped into a mixed-use project that would increase the housing supply along with various commercial, retail, office, and green amenities.

SO WHAT : Innovative hubs like the Brooklyn Navy Yard breed ideas, designs, policies, and programs. They are also great platforms for bringing together affinity groups that are equipped to develop civic technologies specialized in bridging socioeconomic gaps. While mixed-use projects can be seen everywhere nowadays, they are still great uses of space when compared to empty and derelict lots. They can even serve as planning models when developed as dense and walkable districts that can accommodate people from different demographic backgrounds and with dissimilar mobility needs.

New warehouse in Brooklyn Navy Yard will accommodate BIPOC and women entrepreneurs to advance the health and beauty industry

Environmental

Community ← → Tourist

Social

WHAT IF... a building purpose on the waterfront was altered on a daily basis? On an hourly basis? One day, it a venue hall for the new LEGO convention, the next day with little modification, its a WeWork start up space.

*Empty gap formerly owned by a yacht club is now being redeveloped into a mixed-use project*

Nurturing Grassroot Presence

Detroit 313 Day brings together local musicians, comedians, and food vendors for families and other visitors

WHAT: Aside from being a testing ground for new technologies, waterfronts can also be experimental in supporting local, small-scale community organizations and cultural institutions. They offer plenty of shared spaces that bring artists, vendors, and non-profits altogether into a fusion of activities catered towards different groups of people. Grassroots movements can also be responses to symptoms of overtourism.

SO WHAT : Waterfront developments can often be overseen by public-private partnerships, but the priorities may be more focused on broader, perhaps more dire, issues such as climate resiliency or economic growth. Communities may be involved in the process but even then there are varying levels of participation and decision-making power. By having the capability to host local events and organize bottom-up movements, waterfronts can rebalance power dynamics and let the community take the lead on deciding how these places should be managed and what they are truly built for.

Environmental

Community ← → Tourist

●

Social
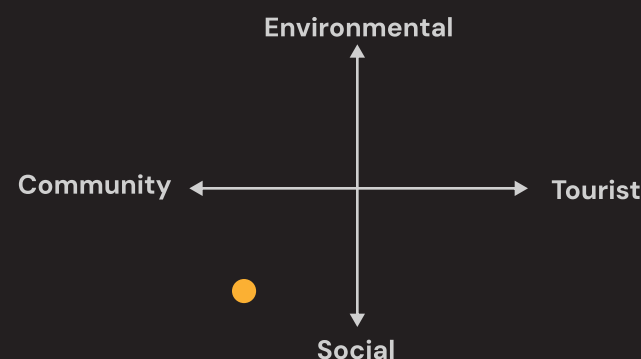
WHAT IF... all systems involved in managing the district were community lead? Where there is no such thing as a privately own assets? Where a group of local leaders own a brand new office building on the shoreline and not BlackRock?

Kyoto's Kiyomachi-Dori riverfront now is home to a group of volunteers assembled to clean up the street every Saturday

Reinvent Cultural Experience
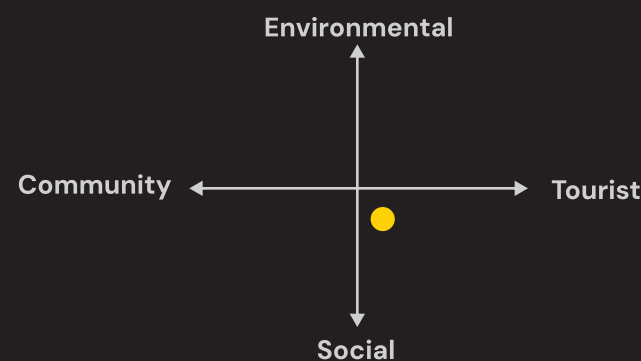
7. **Digitizing Spatial Management**
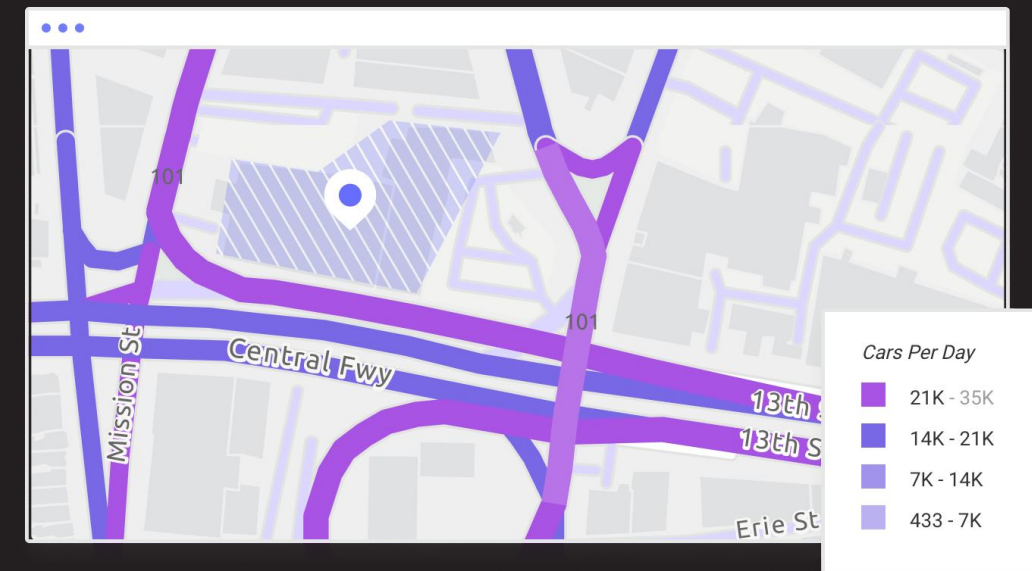8. **Establishing an Entertainment Economy**

Digitizing Spatial Management

WHAT: Some waterfronts are experiencing overtourism due to them being iconic global landmarks. On the other hand, there have been digital systems developed to manage the flow of people, redistribute them to less popular destinations, and encourage behaviors that are respectful to both the local environment and the people in the area. Examples include the Placer.ai tool that the Downtown Grand Rapids Inc. uses to analyze travel behaviors and redistribute population flows based on those patterns. Meanwhile, apps like CopenPay in Copenhagen incentivize visitors to perform "green deeds" to receive rewards such as free ice cream, glasses of wine, and discounted museum entry fees.

SO WHAT : Digitization enables more efficient and responsive systems for managing tourist flows. Moreover, by redistributing visitors to less well-known places, there is potential for rediscovery and renewed interest in the same city or region. Behavior-based apps are great enablers of local cultural exploration where barriers such as costs, access to resources, and poor navigation can be eliminated. At the same time, green behaviors can heavily reduce the negative impacts of tourism from waste to private transport emissions.

The software Placer.ai used by Downtown Grand Rapids Inc. is being used to track where visitors are going to determine appropriate citywide event locations and transportation improvements

*The app CopenPay was pushed out by Copenhagen to encourage green behaviors and force people away from popular tourist attractions such as the waterfront.*

WHAT IF... spatial management technology is able to effect the social space, but physical space in real time? Where the urban landscape adapts and evolves as the festival goes on, creating spaces perfect for the tourists and residents alike.

Establishing an Entertainment Economy

WHAT: New entertainment venues like arenas and exhibition spaces are being built in addition to current waterfront landmarks and infrastructure across many cities. These large-scale projects often serve as both economic engines and cultural anchors that bring in massive amounts of tourists for a short period of time. One such example is Singapore's Marina Bay Sands resort and its expansion to build a new 15,000-seat entertainment arena for concerts and conferences. Another instance is Boston Seaport's plan to build a movie studio, an arboretum, and a library next to the Boston Convention and Exhibition Center.

SO WHAT : While these enormous megaprojects may be potential contributors to increasing tourism and regional economic growth, they are heavily reliant on continuous streams of entertainers, global institutions and conferences, and various high-end brands and companies that occupy these venues. Otherwise, these buildings may eventually sit empty with a long legacy of wasted resources, investments, and spaces that could have been dedicated to local community activities. Interestingly, existing landmarks such as Marina Bay Sands that are proven to be successful in attracting both investments and large-scale events could serve as a solid foundation to strengthen the entertainment economy.

Environmental
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Community ←——————→ Tourist
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Social
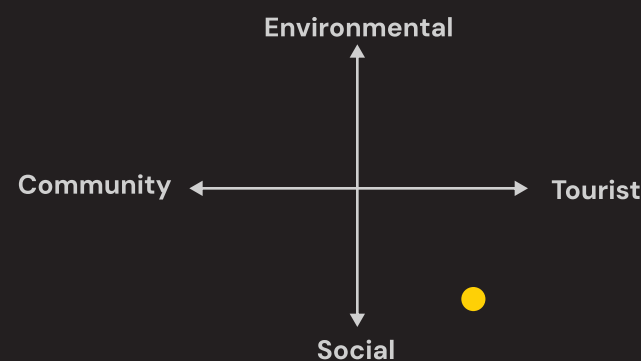
WHAT IF... this is just a fad? A trend in city development that is only temporary? What new technology could be used to retrofit stadiums and venue as residential housing instead of offices if this development trend ever died down?

Marina Bay Sands expansion to build a new 15,000 entertainment venue, along with a nearby floating public square which accommodates a national service-themed gallery, community sports facilities, and a promenade
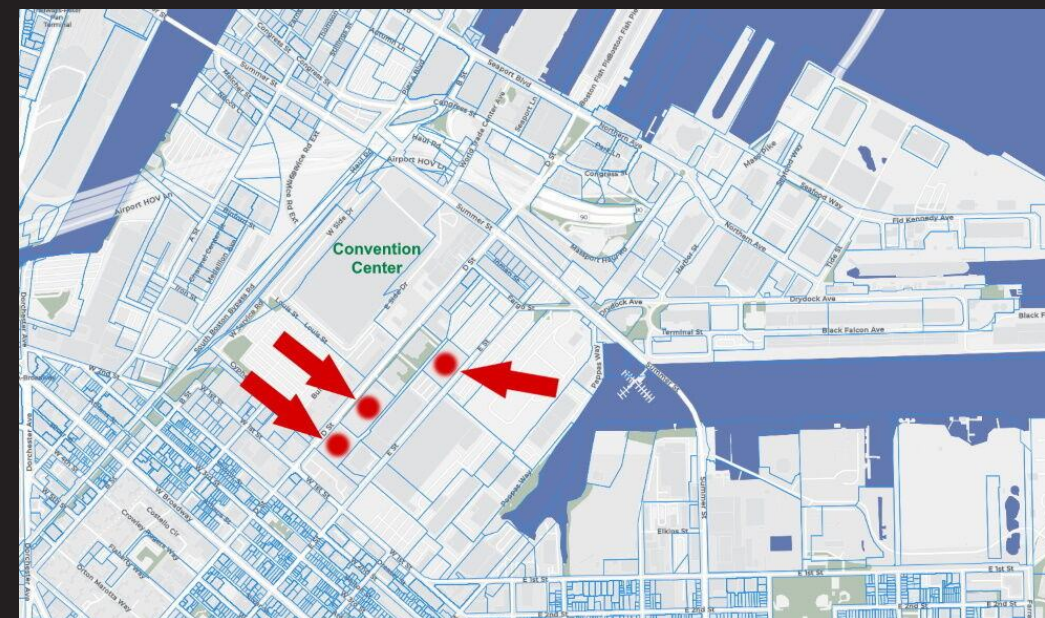
Plans to develop a movie studio, an arboretum, and a library near the Boston Convention and Exhibition Center in the Seaport waterfront district

Appendix

Final Reflection

The development of urban waterfronts presents a unique opportunity to address both ecological and social challenges through innovative, community-centered design. The restoration of ecological infrastructure is critical in shaping resilient waterfronts, where the balance between environmental needs and human activities is vital. These projects, as seen in cities like Singapore and Helsinki, emphasize the importance of clean, accessible water that serves as a foundation for mental well-being and recreation. However, there cannot be development with disagreement. Conflicts over land use, rising property values, and displacement highlight the need for equitable development are threatening the removal of local businesses and historical communities. Navigating these challenges with sensitivity, ensuring that waterfront improvements foster inclusivity and shared stewardship rather than exacerbating gentrification, ostentatious technology, and inequality.

Beyond environmental and economic goals, the reimagined waterfront serves as a cultural hub, connecting communities with water through accessible, engaging experiences. By softening traditional land-water boundaries offer these unique, almost required in the current age, hybrid spaces where leisure and interaction with water become daily activities, enhancing the vibrancy and participatory nature of these areas. Grassroots initiatives, placemaking, and new technologies provide opportunities for residents to assert their identities and reclaim underutilized spaces, while large-scale entertainment and digital systems help manage tourist flows and promote local exploration. Together, these developments suggest that the future of waterfronts is not only about resilience but also about fostering dynamic, inclusive, and culturally rich environments that reflect and empower their surrounding communities.

A vibrant atmosphere and crystal clear watered future awaits at the shoreline, how will we design to ensure this future becomes a reality?

"Water is critical for sustainable development, including environmental integrity and the alleviation of poverty and hunger, and is indispensable for human health and well-being."

United Nations

Waterfront Case Studies

1. Detroit Riverfront
The Detroit Riverfront Conservancy has redeveloped the waterfront into a vibrant riverwalk along the Detroit River. The riverwalk extends beyond the downtown area in both directions and offers many green spaces and open plazas along with marinas, cultural attractions, and entertainment venues. A pleasant promenade with a network of pedestrian and bike trails, makes it suitable for a leisurely stroll or a breezy bike ride.

2. Sydney Harbour
Sydney Harbour is a world-class destination with the Sydney Opera House and the Sydney Harbour Bridge as anchor landmarks. Amenities include the botanical garden, outdoor restaurants and bars, museums and galleries, a repurposed industrial complex, and the Circular Quay ferry terminal. The waterfront is very connected to the CBD and various neighborhoods, providing easy access to the shoreline for local residents and workers.

3. Brooklyn Navy Yard
A former shipbuilding hub for the navy, Brooklyn's Navy Yard has now transformed into an industrial park housing over 450 businesses with more than 11,000 employees. The waterfront has mostly maintained the original industrial warehouses and facilities, but has repurposed them to create suitable collaborative spaces for prototyping urban technologies serving different purposes. The space is also an incubator for local entrepreneurship and community building programs.

4. Boston Seaport
Similar to the Brooklyn Navy Yard, Boston's Seaport district is a former industrial center that is now redeveloped into an innovation hub with additional mixed uses. These uses include restaurants and retail, cultural institutions like the Boston Convention and Exhibition Center and the Institute for Contemporary Art, and green spaces. In addition to the innovation sector, the district is nurturing research and development into biotech and mobile media.

5. San Francisco Embarcadero
One of the most pedestrian-friendly waterfronts in the US. A robust bike and transit network runs along the shoreline, while people can walk between the many different piers with various uses from museums to food to tourist attractions to local markets. Particularly, the farmer's market at the Ferry Building is a fantastic example of active community participation involving local farmers and vendors that attract visitors and tourists as well.

6. Vancouver Waterfront
Vancouver's waterfront is a continuous strip of green space surrounding the central core of the city. Plenty of park trails and micromobility networks are interwoven throughout the waterfront, along with a mix of outdoor plazas, restaurants, and ports for fishing boats, charter seaplanes, and large cruise ships that are easily accessible and observable. Granville Island nearby is a small pedestrian-oriented peninsula for hosting local artisan work and seafood varieties.

7. Copenhagen La Banchina
The Refshaleoen neighborhood has been getting attention due to a restaurant called La Banchina. The pescetarian place overlooks Copenhagen Harbor. Visitors are able to go down to the pier with their food and dip their toes in the water. This interactive component has made the place gain huge popularity. The waterfront is also known for its music festivals, New Nordic restaurants, and pioneering implementations of sustainable design.

8. Helsinki Market Square
Located in Helsinki's South Harbor, the Market Square is a vital gathering space for pop-up food vendors and artists. Active throughout all four seasons, the plaza serves foods and crafts representative of Finnish traditions and Baltic heritage. The Helsinki Baltic Herring Market is one of the oldest traditions held every October, and has been active since 1743. The Market Square is both a unique landmark and a core platform for cultural exchange.

9. Singapore Marina Bay
Surrounded by the iconic Marina Bay Sands resort, the Merlion plaza, and the CBD, Marina Bay when viewed altogether is greater than the sum of its parts. During the day, the backdrop of the downtown skyline cements the city as a global financial and commerce center. At night, the harbor comes to life with light shows beaming across the water, people gathered around the Merlion statue, and a forest of lit pedestrian walkways.

10. Kyoto Kiyomachi-Dori
During the cherry blossom season, tourists flock to Kiyomachi-Dori to witness one of the most picturesque sceneries of cherry blossom trees hanging over a small creek which runs north-south through the ancient capital. The neighborhood has taken note of this scenery as a highlight of the city and has opened up small-scale restaurants, bars, and exhibitions to enhance the visitor experience.

Understanding The Signals

SOCIAL
TECH
ECONOMIC
ENVRION
POLITICAL

STEEP Framework
A comprehensive understanding of waterfronts was paramount in determining the major actors at play within developments. To ensure that all perspectives were researched, the STEEP framework (social, technological, economic, environmental, and political) was utilized as a method of initial categorization. Signals collected often overlapped into two or more categories, which brought new insights for a potential trends framework.

Clustering Framework
Originally, we had clustered collected signals into four main themes: climate resiliency, overtourism, industry shifts, and diffusion of civic technologies. Each theme had its own framework with different axis representations. These four frameworks were then further combined into one main guiding framework in which all of the signals could fall under. At the end, each quadrant of the framework was defined with their respective signals summarized in order to identify and refine trends.
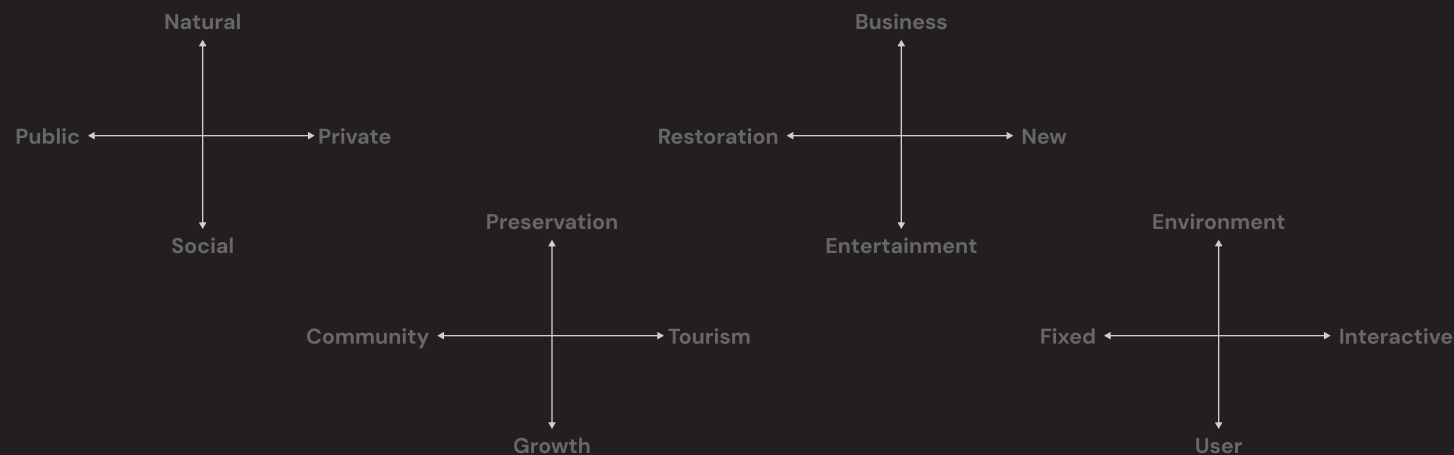
Interview Guide
The contributing factors that make a waterfront thrive. The waterfront is a community's major economic engine and cultural anchor. Looking ahead, we want to enhance these functions through sustainable possibilities. We have decided to use the Grand Rapids WhiteWater (GRWW) renaturalization project as a case study to explore the different considerations and implications of waterfront restoration.

The interviews centered on five different aspects:

1. **Purpose** – What were the motivations and goals for the renaturalization project? How did the proposed plans reflect those goals?

2. **Impacts** – How would you measure the impacts of the project? What would it mean for a waterfront to be successful?

3. **Technology** – What were some of the construction methods and materials used to renaturalize the river and make it safe and sustainable for both people and marine life? What kinds of new technologies would be deployed in the area and what would be their focus?

4. **Education** – Why did the project emphasize providing educational STEM opportunities? How would the project create an inclusive learning environment?

5. **Engagement** – What was the community engagement process? Who was involved? What were some social or political barriers? To what extent were edge cases considered and how would the plan cater towards their needs?

Natural

Public ← → Private

Social

Preservation

Community ← → Tourism

Growth

Business

Restoration ← → New

Entertainment

Environment

Fixed ← → Interactive

User

Expert Interviews

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SUMMARY
The Grand Rapids WhiteWater (GRWW) project aims to restore the rapids through several dam removals across two segments of the Grand River. The purpose of the project is to create economic and recreational opportunities along the waterfront, restore the marine environment, and establish a gathering place for communities. Obstacles included pushback from the EPA on boulder arrangements, anglers that wished to maintain the current state to continue fishing, and community members who were frustrated by the delay of permitting and construction. Community engagement gained feedback on better access to the river, dedicated spaces for indigenous activities, and accessible food and child services in the area. Interestingly, there has been emphasis on education, which is exemplified by summer camps and integrated curriculum where students would work with the local museum, marine biologists, and even the mayor to learn about the local marine habitat and related sustainability efforts. While there have been pilot deployments of technology to understand travel mode choice and behaviors between residents and tourists, there has yet to be technology to enhance the user experience. Despite this gap, there are detailed design guidelines around wayfinding signage, public furniture, and micromobility trails.

THREE MAJOR INSIGHTS

1. **Defining success** – The Downtown Grand Rapids Inc developed a framework tool including metrics like economic development, accessible and active spaces, environmental health and resiliency, youth leadership, and accountability.

2. **District-building through visual identity** – The city has published design guidelines around wayfinding, signage, park benches, and bike trails, in an effort to establish the riverfront as its own district and build its own identity.

3. **Connecting other neighborhoods** – The restoration project will help connect a larger network of park trails across and beyond Grand Rapids through riverbank projects, daylighting, and new tributaries in local neighborhoods.