

SELECTED DESIGN GUIDELINES FOR URBAN WATERFRONT REDEVELOPMENT:
A STUDY OF THE SOUTH BOSTON WATERFRONT

by

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ABSTRACT

Cities throughout the United States are seeing redevelopment opportunities in their former industrial ports. The historic use of these urban waterfronts preserves large areas of land to be developed into a new neighborhoods, which, due to their high visibility, are capable of building new identities for their cities. Therefore it is important these waterfront communities develop into vibrant centers. Vibrant centers are created by attracting people to the community and thereby creating demand for different business establishments. In this paper I contend that the water's edge creates a gathering place, which makes waterfronts inherent activity centers. The surrounding waterfront community can utilize the presence of people traveling through the neighborhood to the waterfront to increase activity levels and vibrancy. Therefore the focus of this study is on how to use urban design guidelines to create more interesting and comfortable public environments to encourage people to linger longer in the waterfront community, creating greater demand for businesses, recreation, and services. The format of the analysis is a case study of the South Boston Waterfront in Boston, Massachusetts.

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Introduction

Post-industrial cities worldwide are revitalizing their waterfronts through planning and redevelopment. The shift towards a service-based economy and subsequent exit of manufacturing and water-dependent freight operations leaves large swaths of underutilized land on urban waterfronts. Recognizing these tracts of land as opportunities to change the image of their city, municipalities have been redeveloping their urban waterfronts since the 1960's. The process of waterfront redevelopment entails creating new uses and developments on previously developed property along the water's edge, and is an important step towards increasing the vibrancy of a city's neighborhoods. In this paper, I contend, like others before me, that successful planning and design will create waterfront communities that serve the needs of the surrounding community, meet the demands of the market, and enhance the aesthetics of the waterfront (Hersh 2012).

Redeveloping urban waterfronts is a unique, but complex opportunity. Waterfront properties are subject to federal and state environmental regulations and must be designed carefully, as to not impede public access to the water or its view shed. Such regulations usually prescribe a development form consisting of low-rise, sparsely placed buildings. This urban form does little to foster the vibrant and walkable neighborhoods desired by municipalities. Additionally, many urban waterfront sites are located on old industrial grounds and contain hazardous materials, subjecting them to remediation standards.

The complexity of working with these remediation, access, and regulatory standards issues requires greater time, money, and consideration. Many developers are hesitant to take on the additional political, entitlement, and construction risks associated with waterfront properties.

However, rents at the waterfront can bring a premium price, while the vista created by the water provides an opportunity to build a landmark project to augment a developer's portfolio.

Given the high risk and reward of waterfront redevelopment, there have been various analyses of best financial and economic practices for waterfront redevelopment. Additionally, many municipalities have studied the process of planning for waterfront developments. Another emerging planning trend is how to utilize the waterfront to create a more resilient city in the face of climate change and increased natural hazard events.

However, given the importance of character of the waterfront to the city, few studies have been conducted on the best practices at the intersection of planning and design for successful waterfront projects. While many waterfront communities have associated master plans, and those plans consist of language about urban design, there is little discussion about the drivers behind the formulation of urban design guidelines and their usefulness to creating vibrant waterfront communities.

Therefore, I will analyze urban design guidelines and waterfront redevelopment and focus my discussion around the three aforementioned criteria: community needs, market demands, and aesthetic properties in waterfront neighborhoods. The analysis will be performed using a case study in the South Boston Waterfront of Boston, MA. In the sections to follow I will outline the existing literature on planning and design as it relates to the waterfronts and the four main criteria, my study methods, the South Boston Waterfront case study, and the relevant takeaways from this analysis.

Literature Review

There is a wide range of planning and design literature that can be applied to waterfront neighborhoods, however, the following literature review focuses on building the necessary context for understanding this study and defining what is already known about design and planning in waterfronts. Focus areas for the literature review include history of urban waterfronts, managing and meeting market demands, and improving community aesthetics.

Recent History of Waterfronts and Waterfront Redevelopment

The majority of the literature explains how the rapid growth of urban waterfronts during periods of industrialization shaped them into ports equipped with massive warehouses and shipping yards. The literature also cites deindustrialization as the reason these waterfronts were in decline by the mid-20th century. The literature does little to explicitly state the nature of the problems these waterfront neighborhoods were facing during deindustrialization. Additionally, there is no discussion about if or why governments prioritized these locations for redevelopment over other places in the community.

The first professional article on waterfront planning was written in 1945 and focused on the creation of master plans for waterfronts. It mentions the importance of projecting future potential uses for lands adjacent to waterfronts and planning for these uses, while maintaining the proper infrastructure for shipping access. Additionally, the original waterfront plans were guided to focus on multi-modal connectivity between water-dependent activities and road uses (Zeitlen 1945). However, the main focus of this literature remained around active, industrial ports, which is outside of the scope of my proposed project.

Baltimore's Inner Harbor redevelopment in the 1960's was the first major waterfront revitalization program in the post-industrial era. More specifically, Gallard & Hansen, note that the Inner Harbor redevelopment is emblematic of the first of what they describe as four generations of waterfront redevelopment history. The first was defined by hallmark redevelopment projects, such as the Baltimore Inner Harbor, and the utilization of tools such as waterfront master plans and public-private partnerships to attract new development to their waterfronts. The second generation is marked by the formation of organizations with the sole purpose of managing and planning waterfronts. Next was the standardization of the waterfront redevelopment process based on the techniques tested in the previous generations (Gallard & Hansen 2012). These standardized mechanisms included the creation of waterfront master plans, provision of public subsidies for historic preservation, the identification of historic conservation districts along waterfronts, and the raising of buildings in non-conservation areas for new construction (Shaw 2001).

We are currently in the fourth generation of waterfront redevelopment, where the methods of previous generations have been combined with innovative technologies, regulations, and financing strategies to increase the feasibility of waterfront redevelopment projects (Gallard & Hansen 2012). Some of the financing strategies developed since the 1970's, which will be discussed more in depth later, include market analysis, requests for proposals (RFP's), negotiation, and asset management (Gordon 2007). The I project I outline in the following case study are executed using planning tools such as planned development areas (PDA's) and development agreements, and thus fall within the fourth generation of waterfront redevelopment projects.

Meeting Market Demands Through Planning & Development

Market conditions in waterfront communities must be carefully considered and planning and development techniques must be tweaked based on these existing circumstances. The higher market risks mean that developers must reduce risk in other areas of the development process such as during the permitting process.

Typically, planning in waterfront redevelopment is approached by two strategies, including comprehensive master planning carried out by public planning agencies or the formation of public-private or quasi-public agencies for the purpose of project planning (Gallard & Hansen 2012). Each type of approach can be carried out through multiple planning styles, of which the institutional organization, planning logic, and response to market conditions varies. The most common styles of planning in waterfront redevelopment include public-investment planning, regulative planning, trend planning, and leverage planning.

Public-investment planning is carried out by quasi-governmental agencies who collaboratively set the stage for development projects. Cities will pursue public-investment planning in their waterfront districts when real estate markets are in decline. Regulative planning occurs when markets are competitive and governments must approve or deny proposed projects. This process is guided by rational and logical thinking about what development is appropriate, which creates a stable development environment that benefits property owners and the wider public. On the other hand, trend planning takes place when governments anticipate emerging market conditions and create policies to guide development based on these trends. The final common style of planning in waterfront communities involves the provision of capital by governments for public investment to stimulate the market and attract private development.

Solutions to problems in the neighborhood are thus solved through innovative development ideas set forth by the private sector. (Gallard & Hansen 2012).

No matter the planning approach or style, local planning agencies must recognize the problems created by market perception in waterfront redevelopment. The former industrial uses of waterfronts creates the perception that redevelopment is infeasible because these locations are inaccessible by current transportation networks, lack public utilities, and are without social opportunities or services. Previous successful waterfront redevelopment programs have used public investment in infrastructure such as parks, waterfront walkways, recreation opportunities and transportation networks to overcome these perceptions and attract private investment (Gordon 2007). By bringing people and activity to these neighborhoods, planning agencies can create the demand for new development in waterfront communities.

Planning agencies must also work within the context of the market by creating “marketplace credibility” in waterfront redevelopment areas, meaning projects in targeted neighborhoods must be profitable and completed in a timely manner. Gordon states that marketplace credibility is built through the RFP and permitting processes because the market boom period in which it is best to pursue waterfront projects is short (around two years). Developer selection during the RFP is key to creating projects that are successful and create additional market demand in waterfront neighborhoods. RFP’s must contain language that creates preference for developers who will aggressively push projects through to completion, who have proven track records, deep funding resources, and impeccable design skills. These developers will be able to quickly take advantage of boom periods in the market when financing is readily available to create landmark projects that will build the market credibility of waterfront redevelopment. However, developers will be unable to meet market demands in such a short

time frame if the permitting process is slow. Therefore, local planning agencies must ensure that the permitting process is streamlined to attract desirable waterfront projects (Gordon 2007).

Developer success in meeting market conditions and demands will largely be determined by previous experience in effectively working with complex projects. Because waterfront revitalization projects are more complex, the developer must assemble a larger and more specialized team, garner public approval early in the process, and be creative in their financing schemes. Additionally, to save time and money, developers should coordinate their construction schedules to concurrently remediate and develop their sites. Private developers will therefore be successful if they can size the project correctly, accurately identify and provide for the needs of the market, partner with local government, acquire multiple income streams, engage in a timely approval process, and create quality design (Hersh 2012).

The literature emphasizes the importance of public-private partnerships in successful waterfront redevelopment projects. There are many definitions of public-private partnerships available, but the important message the literature sends is that these arrangements are entered into so that the public sector gains the benefit of higher skilled project managers and the private sector is able to reduce its risk through advantageous financing schemes (Sagalyn 2008). Public private partnerships were found to be vital in site acquisition and financing (Gordon 2007, Hersh 2008), planning for waterfronts (Gallard & Hansen 2012), and ensuring timely and effective remediation (Hersh 2008).

Serving Community Needs

Successful neighborhoods are designed to meet the needs of the community by increasing safety, fostering opportunities for social engagement, and establishing a strong economic base.

The basic mechanism by which urban design can meet these needs is by either the assembly or dispersal of people and activities. Jan Gehl states,

“If activities and people are assembled it is possible for individual events, as mentioned, to stimulate one another. Participants in a situation have the opportunity to experience and participate in other events. A self-reinforcing process can begin. (p. 81)”

This means that bringing people and activities together creates a multiplier effect in the amount of services available to people because the presence of people and activity attracts businesses and development. Likewise, Gehl contends that dispersal of people and activities can also ensure that there is “a more even distribution of city activities over larger section of the cities (p. 81)” and the presence of quiet refuges outside of the bustling centers of activity.

The methods by which people and activities can be assembled or dispersed to achieve specific community outcomes are addressed in detail by Jane Jacobs in her work *Death and Life of Great American Cities*. The first method she discusses involves increasing safety and public contact through the activation of sidewalks and street life. Activated streetscapes will clearly differentiate between public and private space. When space is clearly public, it attracts visitors from outside the community to use that space, who engage in activity and support businesses in the district. However, when space is clearly private, “strangers”, who may be perceived as threatening, are deterred from using these space. Activated streets will also a significant amount of fixed “proprietors of the street”, including business owners, store clerks, and residents who can provide surveillance of the streets and ensure the public peace. This mix of people will only be present if there is a fine-grained mix of uses on the street, including shops, restaurants, and residences. Additionally, there should be a mix of uses that encourage activity throughout the day as to encourage street activity throughout the day (Jacobs 1960).

Jacobs notes that when a sidewalk life is lacking, there is a greater perception of danger. She contends that over time residents and frequent visitors in a neighborhood begin to build a network of trust through trivial daily contact with one another. This familiarity allows people to take action when necessary, such as when a stranger tries to commit a crime or neighborhood organization is needed to achieve a community objective, because people are able to believe they will be supported. However, when this trust has not been built, people will be more passive within their community, which will in turn increase the perception of danger and decrease public contact (Jacobs 1960).

Additionally, the blocks in a neighborhood should be small as to give people multiple routes to take to the same destination and to make different establishments more accessible to one another. When blocks are long, people tend to pool onto one main street. While assembly of people is a good thing, an oversaturation of people in one location limits the number of activity centers that are prime for businesses and services to locate. Therefore, there will be fewer businesses and a more homogeneous mix of uses. If long blocks in a neighborhood are broken up by an additional street, people are able to disperse throughout the neighborhood, which creates more activity in the neighborhood and sites to locate businesses and services, which attract additional people and activity to the neighborhood.

Improving Aesthetics through Urban Design

Elements that create the feel and look of a place are identified in Kevin Lynch's work, The Image of the City. These elements include paths, edges, districts, nodes, and landmarks. Paths are defined by corridors by which people travel or move. Edges delineate space by separating places from one another. Nodes are central focal points of a place, usually where two

urban spaces intersect or where there are centers of activity. Districts are the geographical extent that people identify as a single community, bounded by some common identity (Lynch 1960).

Waterfronts are an interesting place to analyze design because they can be categorized under several of Lynch's design elements, including a path, edge, and district. They are paths because waterways are used to transport people and goods. Additionally, the linearity of shorelines foster easily navigated routes for people to get from one point to another. The presence of water also creates an edge by separating lands masses and created a physical barrier to development. Conversely, the buildings fronting the water create another sort of edge, separating the city from the water. These edge developments become the defining entranceway to the waterfront neighborhood, and thus are important in defining the aesthetic character of the district that naturally will form at the edge of the water. Hence, why the waterfront provides opportunities for "landmark" development projects, which define the identity of the city.

Other authors have identified similar space-defining elements of urban design, and have discussed how these elements interact to create vibrant places. Rob Krier identifies to main types of urban space, squares and streets, and how the intersection of spaces and the private realm (buildings) creates different geometry and angles (Krier 1979). He also explains how building scale and architecture should interact with the different geometries of urban space to evoke positive perceptions of the space. Most importantly, sketches of real life examples of great urban spaces are given to help understand how the perceptions related to different designs and geometries. This type of information is particularly useful to those post-industrial waterfront areas that are completely razed, giving designers, architects, landscape architects, and developers a blank slate from which to carve out the urban form.

Gordon Cullen, an influential architect and urban designer, discusses how the small-scale elements of design create interesting and inviting places. Monotony of color, texture, scale, geometry, and style is cited as a negative because it creates boring spaces that are uninviting. It is important to vary these elements because the contrast gives the place a better “personality” and allow important architectural features to stand out. Additionally, the views created by the relationship between edges and paths are important. If the scale of adjacent buildings are incompatible, it will create the perception of one building overshadowing or towering over the other. Additionally if the two sites of view on a path, the environment directly surrounding a person and the environment in the distance, are not varied, the travel experience will be dull (Cullen 1961). These last two theories are especially important to consider for waterfront districts given the flatness of the water’s edge and the scale of water bodies compared to urban spaces.

Edmund Bacon expands upon the idea of integrating design with movement through space and time. He suggests that good design at the district scale is executed when the architect considers the progression of moments in time as a person moves about the city. These moments in time are created by the relationship of building masses and their element to one another, the street, the ground, and the sky. As a person stands in one position, these relationships form a snapshot, and when they progress to new location, the way in which they perceive these relationships change, creating a new snapshot or moment in time. Harmonious design can be created when the different building elements and public realm schema complement one another throughout a pedestrian’s movement through the district. Bacon gives two names to this phenomenon in design, “awareness of space as an experience” (p. 15) and “involvement” (p. 23) (Bacon).

Different types of urban form, as defined by the intersection of mass and space, create positive experiences through time in the urban realm. The combination of architecture, color, texture, the interplay between light and shade, and materials differentiates a space and gives it character. Bacon posits that classic architecture garners more interaction between people and the public realms because they are designed with more thoughtful interactions between the buildings, ground, sky, landmarks, and other buildings. The way the building meets the sky should be a defining consideration in the design of the urban form. Additionally, the use of architectural elements connecting building to ground such as staircases, paving, podiums, and fountains enhances the beauty of the public realm and creates a more visually interesting space. Distinct building elements should be “points in space”, that stand on their own as distinct landmarks and also relate to other reference points or datum (Bacon).

Buildings should be used as “recession planes” to provide a “frame” to important views, such as clock towers, monuments, or, in our case, the waterfront (Bacon). Bacon explains how visual depth and a sense of movement is created by relating similar forms to one another, as when an arch in the foreground appears to encompass an arch in the background. Additionally, many of the great classical works of architecture (which Bacon believes should be valued for the lessons they provide about good design) utilize convexity and concavity, or a curved pattern, to envelop people into the space. He believes that contemporary architecture is represented by blocks connected to the ground, and does little to involve the pedestrian in the public realm (Bacon).

The urban design literature tells us that vibrant communities are those where the urban form is both dynamic and fluid. Good design will create a sense of movement and foster interaction with the built environment. Most importantly, the literature helps us to understand

that vibrant places cannot be achieved through the design silos, where each project is planned individually. Rather, design of buildings, open spaces, landmarks, etc. must create relationships with the surrounding context. I will use the framework laid forth by this literature to consider design in urban waterfront redevelopment programs.

Research Methods

The discussion of design guidelines in waterfront planning follows the form of an in-depth case study of the South Boston Waterfront. When selecting a case study area, I first researched into cities with waterfronts that at one time had been major industrial ports. These cities included Boston, MA, Baltimore, MD, Pittsburgh, PA, New York, NY, and San Francisco, CA. I refined the list by looking at the publicly available data and the extent of waterfront planning and development for each city. Ultimately, Boston has the most transparent program with the greatest amount of resources directly allocated to its waterfront planning program. An established waterfront redevelopment process is in place, with multiple neighborhoods along the harbor and its channels currently pursuing waterfront planning. In addition, development of all different types including hotel, retail, commercial, industrial, and residential is booming in the Boston waterfront.

Given the time constraints of this analysis and the sheer amount of total area in Boston bordering the water, I chose to further refine my study area. My analysis focuses on the South Boston Waterfront district the success of its redevelopment projects is a catalyst for other waterfront redevelopment projects, so there is currently a strong effort to plan for development in the area. The study area within the South Boston Waterfront encompasses portions of the Seaport Square, Fan Pier, Pier 4, and Fort Point Channel areas, within the “Innovation District” of Boston. The selected study area is currently undergoing a large amount of redevelopment. Additionally it is adjacent to the established Fort Point neighborhood, which will provide a basis for evaluating whether projects in the study area are successful given the special conditions in the South Boston Waterfront. These areas are controlled by a number of different plans, all laying forth design goals and guidelines to improve the public realm.

These plans were examined and evaluated to discern their stance on urban design. In theory the architecture and urban form of new development projects within the study area should reflect the provisions in the urban design guidelines. To see if this was the case, I reviewed all the development documents available on the Boston Redevelopment Authority's website that were within the study area and were either board approved, under construction, or completed. Additionally, when available for a specific project, I reviewed the meeting minutes from Boston Civic Design Commission sessions to garner a further understanding for the considerations professional designers

I then evaluated images of the completed projects and explored the project sites via aerial and street image viewing software. The information gathered from the development proposals was compared to the guidelines set forth in the different waterfront plans to see if urban design guidelines impacted the way developers approached waterfront redevelopment projects. The images of the completed projects were used to see if the development outcomes were consistent with the promises made in the project proposals and the provisions of the various waterfront plans.

To supplement this research and further support my findings, I conducted a series of interviews with one waterfront planning official and one community leader in waterfront design. These interviewees were asked questions about the public engagement around design in the waterfront planning and design process, special design considerations for waterfront neighborhoods, the catalysts and motivations for the waterfront planning process in the study area, implementation of the various plans, how this implementation has affected the public realm, and whether new projects are being developed in a manner consistent with the urban design guidelines and the perceived success of these developments (see Appendix).

Several additional resources have been used to gauge whether or not the information received from the interviews are representative of the general public perception of the success of waterfront redevelopment in designated study area. These resources included articles from local Boston newspapers, design critiques from architectural forums, documents from waterfront business and planning non-profit organizations, and studies released by the local area universities (Massachusetts Institute of Technology, Harvard University, and Boston College, etc.). The information gathered from these sources also provided a baseline of evidence against which to vet the ideas I presented in the sections of this note to follow.

Introduction to Case Study: The South Boston Waterfront

A Brief Post-Colonial History of Boston and its Harbor

Boston Harbor is arguably one of the most historically iconic waterfronts in the United States, due to its storied history at the forefront of the colonial rebellion and American Revolutionary War. Following the Revolutionary War, Boston became a premier international port city and, by the middle of the 19th century, Boston's export-based economy had grown to also be one of the largest manufacturing economies in the US. Large manufacturing buildings therefore proliferated around the harbor for the production of leather goods and clothing (BRA 1999).

Meanwhile, in 1804, Boston annexed what is now known as the South Boston district, allowing the tidal marshland to be filled for development. New transportation connections were created between the South Boston Waterfront and the main core of Boston via the South Boston toll bridge and Dorchester Avenue turnpike. Industrial sites began to develop around the Fort Point Channel and supporting residences began to cluster together further inland. Major ironworks, glassworks, and masonry companies established themselves along the South Boston waterfront between 1812 and 1814, and made up a large portion of the economic base in the district throughout the 19th century (BRA 1999).

Additional local, regional, and national transportation connections constructed in the mid-19th century opened up the South Boston Waterfront to new residents and commercial and industrial enterprises. These improvements included the North Free Bridge (1828) and the Old Colony Railroad (1844), which brought the ship-building and oil refining industries to South Boston, which greatly increased development pressures in the area and led to the filling of 750

acres of land in the South Boston Waterfront during the middle of the 19th century. This infill of land created the Fort Point Channel and eleven new wharves (BRA 1999).

Major tenants built new large buildings and piers in the South Boston Waterfront district at the turn of the 20th century. In 1905, the Gillette Safety Razor Company, which is still one of the major land owners in the South Boston Waterfront, built its manufacturing plant. The Commonwealth of Massachusetts, in response to the fishing industry's concentration in South Boston, built the Boston Fish Pier in 1914. In the same year the Commonwealth Pier, which was built as an intermodal transfer point for both passenger and freight, was constructed. The federal government purchased large swaths of property in the district to set up the South Boston Naval annex and the South Boston Army Base, which both served a critical role before and during World War II (BRA 1999).

Deindustrialization and urban renewal.

During the post-war era, Boston saw a decline in its manufacturing base because many factories were relocating to the southern United States where land and labor were cheaper. Boston officials razed whole neighborhoods to build urban renewal projects, such as the Massachusetts General Hospital complex and the Boston Herald headquarters. Urban renewal practices were common throughout the nation at this time and often resulted in the displacement of large numbers of residents (BRA 1999).

The City of Boston also undertook another nationally popular strategy in an attempt to improve the city: highway construction. The Master Highway Plan for Metropolitan Boston was drafted in 1948 and construction on the proposed highway and interstate network began soon thereafter. Segments of historic neighborhoods such as North End, Chinatown, and the Financial

District were torn down or separated from one another due to the construction. Projects that were completed during this time included the northern segment of the Central Artery, several tunnels, and the extension of the Massachusetts Turnpike (BRA 1999).

The South Boston Waterfront was cut off from the central business district by the construction of the Central Artery. Additionally, the interstate highways made shipping freight via truck much cheaper than by rail, thus undermining the South Boston Waterfront's competitive advantage as a multimodal node for freight. This trend compounded the issues created by the simultaneous deindustrialization that was occurring in the highly manufacturing-dependent economy of South Boston, causing the district to quickly decline. Throughout the 1960's, '70's, and '80's state and local government agencies acquired properties in the South Boston Waterfront in an attempt to stimulate industrial and maritime uses in the district (BRA 1999).

The Big Dig and state of South Boston Waterfront today.

The Central Artery was eventually rerouted underground through a tunnel system, under a massive multi-decade and multi-billion dollar project nicknamed the Big Dig. The Big Dig was completed in 2007 and reconnected South Boston to the rest of the city. The removal of the raised highway opened up space in the South Boston waterfront for redevelopment, where the Rose Fitzgerald Kennedy Greenway was constructed to increase connectivity between downtown Boston and the South Boston Waterfront (The Fallon Company 2015).

Today, access water and activity in the South Boston Waterfront continue to increase as more plans and project proposals to redevelop the area arise. Redevelopment activity has led to the construction of new parks, offices and headquarters, hotels, museums and a convention

center, commercial buildings, and residences. Emerging activities in the South Boston waterfront include recreation, shopping, dining, cultural engagement, employment (Boston’s NEW Waterfront 2015).

Boundaries of Study Area

The study area boundaries are shown in Figure 1. Analysis is performed on the area north of Summer St. and south of the Boston Harbor, and west of D St. and east of the Fort Point Channel. Thus, the study site is bounded by water on two sides. As mentioned earlier, the site includes the Seaport, Fan Pier, Pier 4, and Fort Point districts.



Figure 1. Map of selected site for analysis. From “BostonMaps” by City of Boston

South Boston Waterfront Case Study: Regulatory and Planning Context

The study area is subject to several different state and local level regulations and plans. The term “regulation” in this context means any governmental provision that is mandatory to follow. However, a “plan” refers to a document that sets forth visions, goals, guidance, and some regulations for a specific district. In the sections to follow I will unpack the regulations and plans for the South Boston Waterfront and specifically focus any guiding urban design principles set forth in the different sets of governance.

State of Massachusetts- Public Waterfront Act, Massachusetts General Law Chapter 91

The State of Massachusetts has a strong history of protecting the waterfront for unabated public access and water-dependent commerce. Drawing from the values present in the “public trust” doctrine, an early philosophy stating people have rights of access to lands of distinctive social value, The Massachusetts Bay Colony passed the Colonial Ordinances of 1641-1647. These ordinances reaffirmed the idea that “the air, the sea and the shore belong not to any one person, but rather the public at large,” and served as the foundation for Massachusetts General Law Chapter 91 (Chapter 91)—the Public Waterfront Act (Executive Office of Energy and Environmental Affairs 2015).

Chapter 91 maintains the rights of the public to access and navigate the water, preserves the waterfront for water-dependent uses, and ensures that private uses of tidelands serve a legitimate public purpose. Included in Chapter 91’s jurisdiction are flowed tidelands, filled tidelands, great ponds, and non-tidal rivers and streams. In these areas any activity that involves the construction, alteration, removal, or change in use of structures; filling; or dredging must receive authorization under Chapter 91, which can be obtained through a variety of permits and

licenses (Executive Office of Energy and Environmental Affairs 2015).. Most of the property within the study area consists of tidelands filled during the late 18th and early 19th centuries, and thus fall under the jurisdiction of the state-level Chapter 91 regulations.

Authorization under Chapter 91 is granted based on two factors: project location and use. A project is either located in private tidelands, which are privately held lands landward of the mean water line, or in Commonwealth tidelands, which are defined as those areas seaward of the mean low water line. Under Chapter 91, the public retains all rights to Commonwealth tidelands and private use of all tidelands are only authorized if these uses provide additional public benefits, the level of which is contingent upon the project's location in either Commonwealth or private tidelands (Executive Office of Energy and Environmental Affairs 2015). This study focuses on private tidelands, however there are a few properties that are still publicly held.

Additionally, project authorization under Chapter 91 depends on whether the project is a water-dependent or nonwater-dependent use. Water dependent uses require access to or location in the water and are highly encouraged under Chapter 91, as they are assumed to have significant public purpose. However, nonwater-dependent uses are not presumed to have significant public purpose and must contribute more benefits than costs to receive Chapter 91 approval (Executive Office of Energy and Environmental Affairs 2015).

The Massachusetts Department of Energy Protections (MassDEP) is responsible for enforcing the provisions of Chapter 91. MassDEP is an agency under Massachusetts' Executive Office of Energy and Environmental Affairs, which works to:

“Preserve open space, species habitat, and working landscapes; enforce pollution laws to protect public health and natural resources; review the environmental impact of major

real estate and infrastructure developments; enhance the state's role in energy conservation and production; manage fish and wildlife; and provide opportunities for outdoor recreation and access at the parks, beaches, and farms that make Massachusetts a wonderful place to live, work, and play. (Executive Office of Energy and Environmental Affairs 2015)''

Under Chapter 91, MassDEP has the authority to grant or deny permits based on project location, use, environmental impact, and social benefit. These permits fall under four categories including MassDEP Waterways Licenses, MassDEP Waterways Permit, a license or permit amendment, or a Harbormaster Annual Permit. All projects that fall under the jurisdiction of Chapter 91 must obtain a MassDEP Waterways License, unless they are qualified for one of the three other authorizations. A Waterways Permit may be obtained from MassDEP if the project does not involve any structural or fill and dredging work. Additionally, the local Harbormaster may grant an annual permit for the temporary siting of water-dependent structures such as vessel ramps, moorings, and floats (Executive Office of Energy and Environmental Affairs 2015)..

The Chapter 91 regulations create strong protections of the tidelands and public interest. However, the application of these regulations in an urban setting can be problematic. Taken together, the provisions in the Public Waterfront Act prescribe a development form consisting of low-density and large industrial buildings. This form of development does little to create the varied texture, color, shapes, and uses that foster walkable, vibrant urban neighborhoods. Rather, the large blocks and long street walls against the waterfront may make people feel isolated from the rest of the city (C. Busch, personal communication, February 18, 2014) and do provides few centers of activity necessary to create the mix of uses needed for a vibrant, safe community that fulfill the needs of its residents.

Municipal Context- Boston Redevelopment Authority (BRA)

The Boston Redevelopment Authority (BRA) is the local agency responsible for carrying out urban planning programs. The BRA:

“Works closely with community members and other local stakeholders to create plans that create appropriate context for development while respecting the City of Boston’s historic character and its future aspirations. The Division aims to create places that are livable, ecologically sensitive, and economically thriving. (BRA n.d.-d)”

Through their work with the general public and collaborating with expert consultants, the BRA helps Boston’s neighborhoods set forth community visions, prioritize development activity, and create regulatory guidelines. These goals are codified in comprehensive planning documents compiled by the BRA. The BRA carries out planning in waterfront neighborhoods through two divisions, the Waterfront Planning division and Urban Design division, both of which are discussed below.

Waterfront planning department.

The BRA draws its authority from various state-level enabling acts, which its Waterfront Planning Department (Waterfront Planning) uses to fulfill its mission of promoting “an active, environmentally sound, and accessible Harbor that sustains vibrant waterfront neighborhoods and water dependent businesses. (BRA n.d.-b)”.

Waterfront Planning works with neighborhoods along the waterfront to create Municipal Harbor Plans (MHP’s), which set forth the framework for future development. The MHP tool was developed upon the recognition by state and local officials that the Chapter 91 regulations were too rigid for urban contexts. Thus, the City of Boston has been allowed (by the state) to

utilize the MHP process to circumvent those regulations in the Chapter 91 document that impede the ability of waterfront neighborhoods to thrive (C. Busch, personal communication, February 18, 2014).

Therefore, MHP's create standards for open space, public access, and urban design to build consistency with the existing urban fabric of adjacent communities and Chapter 91 regulations. Through this planning process, local-level priorities for future growth are set, which help state permitting agencies decide whether to authorize a project based on the community-level context. Additionally, criteria set forth by MHP's are frequently adopted into the Boston Zoning Code to create special zoning districts (BRA n.d.-b).

Urban design department.

Waterfront Neighborhoods also fall under the jurisdiction of the Urban Design Department, which is charged with influencing and shaping the public realm. The public realm consists of buildings, public spaces, and the activities within these public spaces and buildings. Specifically, the Urban Design Department ensures "the urban design principles that define Boston's unique character are widely promoted and embedded in the planning and redevelopment projects in the city" (BRA n.d.-c).

The Urban Design Department has the authority to review projects through two different avenues including reviews conducted under Article 80 and Zoning Board of Appeal reviews. Article 80 reviews consist of determining whether architectural and design elements of proposed projects are consistent with urban design guidelines set forth by the underlying zoning in an area and with the existing architectural features of surrounding buildings (Boston, Massachusetts, Municipal Code §80-5). In some cases, Article 80 requires that there is a public meeting to

review design before an approval can be granted (BRA n.d.-c). During an Article 80 design review, the Boston Civic Design Commission (BCDC), which is a board of local design professionals, critique projects based on proposed streets and connectivity networks, public spaces, buildings, and overall appeal. Specifically, BCDC reviews projects that are over 100,000 square feet, have “special significance” to Boston, or that propose changes to monuments, civic/cultural centers, or parks. In addition to the Article 80 review process, the Zoning Board of Appeals will prompt the Urban Design Department to perform a curtesy design review when zoning relief is requested for a project (BRA n.d.-e).

Underlying zoning.

The study area is regulated by Article 42E in the Boston Zoning Code. This article was created through an amendment to the original zoning code, when criteria from a proposed MHP for the “Harborpark” district were adopted into the legal text. The area is separated into two main zones. The first is Waterfront Transition Zone (Boston, Massachusetts, Municipal Code § 42E-13.2), which sets height and Floor Area Ratio (FAR) restrictions of 55’ and 3.0, respectively. The second is the General Area zone, which sets the maximum allowable height at 125’ (or 155’ in certain circumstances) and FAR at 3.0. Additionally, Article 42E sets forth specific urban design guidelines promoting developments that are sensitive to the historic context of the neighborhood, enhance access to the waterfront and its view shed, and activate the street life within the South Boston Waterfront (Boston, Massachusetts, Municipal Code § 42E). The specific guidelines are outlined in Table 1, below.

Table 1. Article 42E Design Guidelines

Design Criteria	Design Guidelines
Building Form	<ul style="list-style-type: none"> • Development will be consistent with historic height, massing and pattern of the neighborhood • Design details on buildings shall reflect the historic character of the waterfront district’s buildings • Setbacks and ornamental details shall be used to make buildings feel less bulky • Roofs will be designed to disguise additional roof structures • Buildings on piers will be sited to emphasize the existing geometry of the pier • Buildings shall step down in height as they approach the water
Access	<ul style="list-style-type: none"> • Buildings will reinforce the pattern of the traditional street network and maintain view sheds and corridors of access to the water • The end of piers shall have amenities that allow for public access to views of the water
Public Realm	<ul style="list-style-type: none"> • Building masses shall not create a continuous wall on the waterfront • Ground-level building elements, gardens, and open space should be designed to activate the street and avoid blank walls in the pedestrian space • Projects should be designed to enhance the pedestrian environment through the thoughtful design of pedestrian pathways, space for public art, lighting, materials, landscaping, and street furniture • The geometry formed by buildings and public spaces should direct movement and views towards the water

Note: From *Boston, Massachusetts, Municipal Code § 42E*; Note: Design Criteria categories created by author.

The above guidelines encourage projects where the relationship of buildings and the public realm are carefully thought out to create fluidity of movement towards the waterfront. The 42E guidelines also create buildings and streetscapes that are aesthetically dynamic and exciting places to be, thus attracting pedestrians to the street. However, because the outcomes as far as block size and geometry are dependent upon the existing urban fabric, the Article 42E urban design guidelines do not necessarily dictate communities that are easily traveled or effectively gather and disperse people, which is necessary to directing activity throughout the community.

The zoning within the study area can also be discerned by *Zoning Map 4A/4B Harborpark District: Fort Point Waterfront & Dorchester Bay /Neponset River Front*. The zoning map shows that the study area also falls under a Planned Development Area (PDA)

designation. This allows for the creation of PDA's, or overlay zones with the special purpose of creating new zoning controls for large or complex projects that may be appropriately suited for the neighborhood, but are otherwise prohibited by the underlying zoning. An applicant can pursue a PDA by submitting a development plan. The submission of a development plan triggers a 45-day long public comment period and at the end the development plan must be approved by the BRA and the Zoning Commission. To be approved, the development plan must demonstrate a significant public benefit and lay forth the proposed form of buildings, uses, landscaping, and parking arrangements within the PDA (BRA n.d.-a).

The PDA designation area is paired with additional PDA-related zones. The first is the PDA Height zone, which allows a maximum height of 155'. However, if a project elects to undergo Large Development Review it may be eligible for a maximum building height of 250'. The maximum FAR set forth by the PDA Height zone is 4.5. Additionally, the PDA Open Space zone requires all developments north of Northern Ave to dedicate at least 50% of the project site to open space. Development south of Northern Ave must have at least 30% open space. However, a PDA agreement may stipulate that projects south of Northern Ave have more than 30% of open space (Boston, Massachusetts, Municipal Code § 42E-16.2).

The PDA negotiations provide an opportunity for the BRA and developer to work out a project plan that ensures small enough block sizes, street configuration, mix of uses, and design texture to create a vibrant and walkable community. However, the 30-50% open space requirement is quite large and may work against the BRA in negotiations, since this requirement reduces the amount of buildable area and eats away at the profitability of development. Additionally, the open space requirements do not reflect an urban infill form of development, and may hamper the ability for businesses, which are responding to the demand created by

increased activity, to locate in the community. This in turn may impede the multiplier effect created by increased activity in redeveloping neighborhoods.

Local planning documents, MHP's, and urban design guidelines.

There are multiple plans and MHP's guiding the development of the South Boston Waterfront and the area under analysis. The first of which is the *Harbor Park Plan*, which was developed in the early 1980's to ensure public access to the waterfront. The plan consists of urban design guidelines that are meant to build consistency between new development and the historic urban form. These guidelines prescribe lower building heights, traditional masonry materials, and the inclusion of a public waterfront pedestrian pathway where appropriate. Guidelines from the *Harborpark Plan* were adopted into the Boston zoning code (Articles 42A through 42F) (Boston Redevelopment Authority 2000).

The *Harborpark Plan* was refined by the creation of the *1999 Seaport Public Realm Plan*. This MHP provides the framework for spatially organizing and implementing plans for the study area. The plan aims to create a walkable, mixed-use, and vibrant waterfront neighborhood. It prescribes several action steps for doing so, including the implementation of a public engagement process to create urban design guidelines to be adopted into the Boston zoning code (BRA 2000). The plan prescribes design elements that should be considered including a street and block plan, open space guidance, and regulations of building form and height. However, the document does not specifically lay out these urban design guidelines.

The *2000 South Boston Waterfront MHP* was created to progress the goals of the *Seaport Public Realm Plan*, and create an official vision based on the provisions of the previous plan. Specifically the *South Boston Waterfront MHP* sets forth a requirements for 50% open space on

new development sites and the extension of Boston’s Harborwalk where applicable, as well as several sets of urban design guidelines (BRA 2000).

The first set of urban design guidelines in the *South Boston Waterfront MHP* cover the Fort Point Channel sub district and are rather general. They state that building height, scale, colors, materials, façade treatments, and relationship to the street must be compatible with those of the surrounding historic district. The purpose of Fort Point Channel design guidelines is to maintain and augment the existing historic character of the sub district. Meanwhile the urban design guidelines for the Fan Pier district encourages the establishment of a unique sense of place through contemporary design (BRA 2000). The Fan Pier urban design guidelines regulate building scale and building character, the pedestrian environment, and urban form patterns (as shown in Table 2).

Table 2. Fan Pier Urban Design Guidelines, from South Boston Waterfront MHP

Design Consideration	Urban Design Guidelines
Building Scale and Character	<ul style="list-style-type: none"> • Recognizable building and shapes • Modulated materials • Detailed facades • Articulated entryways • Vertical fenestration of building mass • Avoid large spans of non-transparent street walls • Integrate transparency, shade, and shadow into facades • Integrate both contemporary and traditional materials into design in innovative ways
Pedestrian Environment	<ul style="list-style-type: none"> • Buildings fronting sidewalk • Large windows and storefronts designed with pedestrian-oriented treatments • Visually permeable and interesting storefronts • Provision of enclosed or covered pedestrian ways • Tall buildings utilize setbacks and orthogonal elements
Urban Form	<ul style="list-style-type: none"> • Recognizable block sizes and configurations • Incorporation of closed open spaces throughout the street network • Incorporation of food vendors, art, civic uses, performing arts, and recreation activities where possible • Architectural details such as façade lighting, fountains, building overhangs, and arcades are encouraged

Note: From “South Boston Waterfront Municipal Harbor Plan” by Boston Redevelopment Authority. (2000).

The design guidelines for the Fan Pier district distinctly lay out how buildings should be designed to create a dynamic street wall. The guidelines also set forth design principles that activate the streetscape by encouraging a mix of uses with activities throughout the day, providing public gathering spaces for neighborly activities, maintaining the pedestrian scale, and creating a more comfortable pedestrian environment.

Implications of Planning and Regulation for Boston's Waterfront

Boston's waterfront is regulated at many levels, including state, local, and community-level. While the state regulations and underlying city zoning make it hard to create vibrant communities, the state of Massachusetts has enabled the City of Boston to work around these rigid regulations through the MHP process. The BRA has passed several plans to help developers bypass the more stringent regulations and to set expectations for the caliber of development expected for waterfront neighborhoods. These plans also allow for the creation of PDA's, in which developers and regulators can negotiate a prescribed design for a (usually large) site, to better serve the community's needs.

The purpose for the different state-level and local-level regulations varies, but when the provisions within these documents are taken together, there are several themes that can be teased out. The first is that new development must be designed in a way that has little negative impacts on water quality. Additionally, the regulations strongly encourage a pattern of development that enhances the public's ability to view, access, and enjoy the waterfront. The open space, public pathways, and public purpose requirements encourage developers to transform the waterfront from a means to move goods and conduct business into a recreational resource. The design guidelines within the various MHP's also work to ensure that the pedestrian environment is active and directs movement towards the waterfront, buildings include design elements that help

to frame views of the water, and generally make the waterfront an aesthetically pleasing place to be.

Yet another goal of the regulations, plans, and especially design guidelines, is to foster a new identity for the waterfront. Within the study area there is an interesting dichotomy between fostering a built environment that reflects Boston's strong legacy as the center of manufacturing and trade, while also using contemporary design to create the feeling of an innovative and cosmopolitan district.

Analysis and Findings

Outcomes of Development Projects Review

The information presented below represents the design considerations and elements of eight different development projects in the study area, as determined through the review of project proposals, public meeting minutes, and interviews with planning and design experts in the Boston area. The projects range in size from large PDA developments to smaller infill developments. The type of development also ranges from mixed-use developments, to residential, to public squares and parks. Additionally, there is a range of different locations, some of the projects are right on the Boston Harbor, while others are further inland, but still within the waterfront neighborhood district.

316-322 Summer Street.

The 316-322 Summer Street development consists of two unique buildings that are being redeveloped together as a single project. The redevelopment project was approved in June 29, 2006, and construction has been completed. The buildings front both Summer St, which is an above-grade roadway, and the lower-level A St.

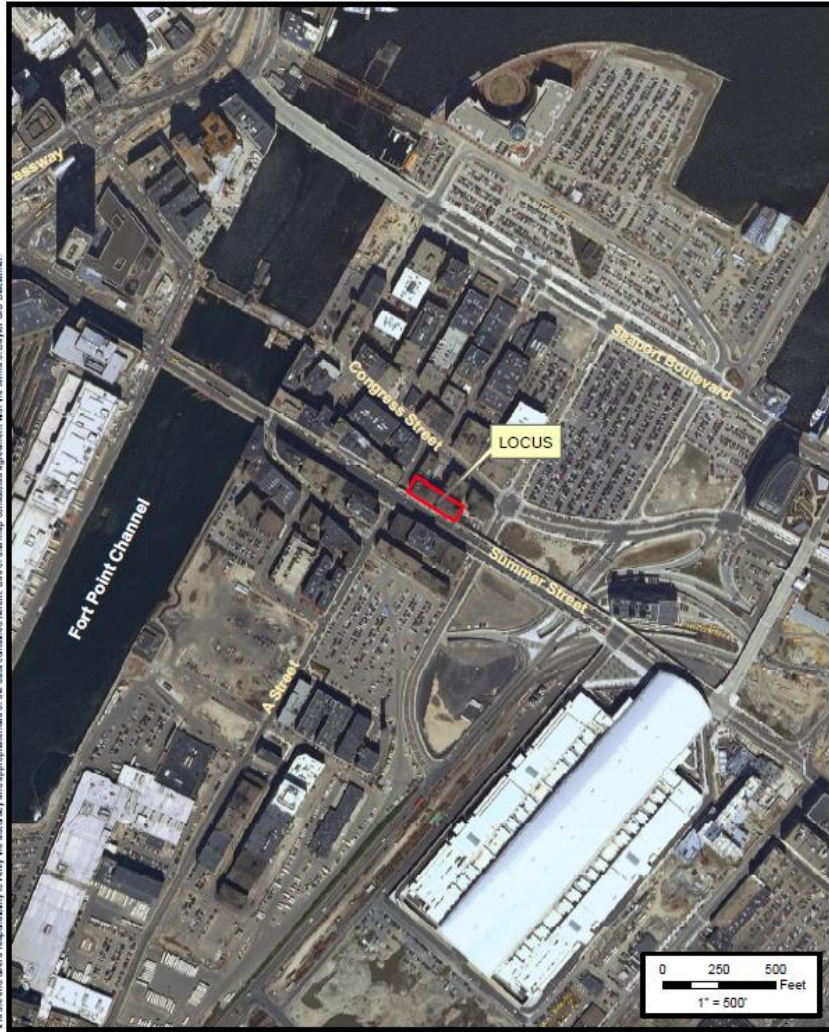


Figure 2. Map showing location of 316-322 Summer Street project. *Note:* From Notice of project change: 316-322 Summer Street, Boston, Massachusetts. (2008)



Figure 3. Image showing redeveloped 316-322 Summer Street project. Note: From “Summer in the city” by Epsilon Associates. (2013).

The overall building designs keeps with the height, FAR, and façade treatment provisions governing the area. The buildings consist of traditional masonry materials and metal, are vertically fenestrated, and consist of many windows and ornamental elements to break up the street wall. Additional height has been added to one of the buildings, but the new floors are set back as not to disturb the historic ground-level site lines and triangulation (Lincoln Summer Street Venture, LLC 2008).

The developer proposed to fulfill the open space requirement with a new, small public plaza fronting A St., but as of June 2014, no such plaza has been constructed. The applicant also proposed additional public amenities including a pedestrian staircase to connect Summer and A Streets and requested the city provide a curb line in front of the building so that they could build

a sidewalk (Lincoln Summer Street Venture, LLC 2008). The proposed sidewalk and staircase improvements were installed.

However, the public realm still lacks the right design for a vibrant space. There is little transparency to the ground level floors and the juxtaposition of the two buildings creates a continuous wall. The project also lacks the pedestrian environment amenities contained within the Article 42E Design Guidelines, such as landscaping and street furniture, that make a more comfortable pedestrian environment. Overall, the public realm is uninviting to visitors.

The use of the two buildings are also under fire, as people believe office spaces detract from the current mix of uses in the Fort Point Channel. The project received backlash when the use was changed from mainly residential to office use due to a lagging residential market. Opponents of this change cite the Fort Point Channel's plans to create a mixed-use, 24-hour neighborhood and claim that the office use does little to encourage night visitors (Grillo 2009).

Fan Pier PDA.

Fan Pier is a PDA encompassing over 20 acres of land, with a proposed 3 million square feet of mixed-use development. The Fan Pier development presents an interesting design challenge, as it will top a large pier abutting the harbor and the surrounding land mass. Additionally, the Fan Pier development is adjacent to several notable existing buildings including the ICA building and Boston Courthouse (The Fallon Company 2015). Many of the projects within Fan Pier are approved, but have yet to be constructed. Three different projects within the Fan Pier development were analyzed including *Fan Pier Parcel I*, *Fan Pier Park*, and *Fan Pier Parcel C*.



Figure 4. Map of Fan Pier PDA. Note: From “Master site plan” by The Fallon Company. (2015).

Fan Pier Parcel I is directly adjacent to the Institute of Contemporary Art (ICA), one of the popular destinations within the South Boston Waterfront. The proposed development for Fan Pier Parcel I consists of a contemporary glass building, with varying material colors. The glass on the south side of the building will be darker to represent the “weighty” urban feel of the surrounding traditional neighborhood, while the glass on the north side is lighter and more transparent to better reflect the open, airy feel of the adjacent waterfront and its recreational uses. The glass facades are designed to feel like the building has four separate “fronts”, which are actively viewed from the street level. To do this, the applicant has proposed various mullions, vertical setbacks, and angled façade elements. The facades are angled to create a point at the top of the building, which the developer claims is a “beacon” that is meant to be a prominent visual in the waterfront view shed. The applicant states the rhythm and movement created by the building design activates the streetscape and moves people seamlessly towards the waterfront.

Additionally, greater building setbacks on the east and west side of the structure are proposed to maintain the visual access to the waterfront. Finally, the applicant proposes sidewalk improvements, new public plazas, and a new street (The Fallon Company 2013).



Figure 5. Image showing proposed Fan Pier Parcel I development. *Note:* From “Fan Pier-Parcel I” by The Fallon Company. (2013, June).

Since the Parcel I building is adjacent to a large activity generator, the ICA there will be many people walking through the site. Thus it is important the north side of the project, where people will walk to get to the ICA, is designed in a way that assembles people and creates a sense of activity and vitality. The Fallon Company and BCDC recognize the importance of the north side façade, and are in the midst of talks to increase setbacks on this side of the property to make more room for public space. Additionally, the developers propose to further articulate the north and east façade (which is adjacent to the ICA) to create a more visually interesting pedestrian experience (BCDC 2013).

The BCDC views Fan Pier Park as the “front door” to the Fan Pier Parcel C development, meaning the park has many important implications for the activity level within the Fan Pier district. The park is a network of pedestrian paths leading to and bordering the waterfront, punctuated by large areas of open green space (The Fallon Company & Richard Burck Associates 2013). BCDC Commissioners insist the plants chosen for the park must not be too tall as to block the view of the water and access to the waterfront. Additionally, the BCDC strongly approves of the proposal’s inclusion of a pavilion with a publicly accessible viewing deck on top, as this meets the Article 42E criteria for amenities providing publicly accessible views of the water (BCDC 2013).

Parcel C is proposed as a 15-story (195’) glass building fronting Fan Pier Park. The rendering of the proposed building shows a rectangular building with dimension added through the use of vertical articulation, building setbacks, and protruding balconies. The BCDC’s feedback on the architectural elements of the building is positive, however they express concern over how the building will relate landmarks in the district. Particular concerns include how to better activate the park and create a datum out of the building. Some of the design

commissioners believe the building should be more monumental to make a strong statement against the harbor, while others think changes to the balconies and lighting will activate the public realm (BCDC 2013). A striking design would be consistent with the state visual effect of the Fan Pier Parcel I development, giving cohesion to the district.



Figure 6. Image showing propose Fan Pier Parcel C development. *Note:* From “BCDC Presentation: Parcel ‘C’” by the Fallon Company. (2013, January 8).

Pier 4 PDA

Pier 4 is another PDA development directly west of Fan Pier. Like the Fan Pier project, Pier 4 is atop a pier in the Boston Harbor, thus requiring innovative design solutions. The site is 9.5 acres, with 56% set aside for public open space. There will be three buildings including an

office building, residential building, and hotel (BRA 2005). The project is currently under construction.

Building designs within the project reflect contemporary architecture, with glass facades that are similar to those in Fan Pier. Elements of traditional Boston architecture, such as masonry and granite, are incorporated in the design of the bottom floors of the buildings. Continuity with the surrounding projects is created by borrowing design elements such as textured sidewalk strips, light fixtures, landscaping, and entrance canopies from other South Boston developments (BRA 2005).

The Pier 4 PDA defines anything that is in the public realm as open space; this includes enclosed or covered public space, streets, sidewalks, and traditional open spaces. This definition raises questions about the quality of the open space being provided. While streets are an important component of the public realm, they are not necessarily a place where people can gather or recreate. However, the inclusion of two parks in the PDA substantiates the claims of significant open space inclusion. Other components of the open space plan include an area supporting water-dependent uses called the Water Commons, an extension of the Harborwalk, and carefully designed streetscape (BRA 2005). The different open space components are designed to increase access to the waterfront and provide a variety of different choices for activities.

Seaport Square PDA.

Seaport Square is a PDA development covering a vast stretch of the study area. There are a proposed 23 acres of new development and 6 acres of open space. The Seaport Square project lays forth plans for redeveloping land currently covered by surface parking lots into 20

new blocks consisting of 19-20 new buildings, two public open spaces, and other active uses (BRA 2010). The applicant proposes to develop the site under the guidance of six different design principles, shown in Table 3(Gale International et al 2008).

Table 3: Guiding Design Principles for Seaport Square

Design Principle	Design Goals and Strategies
Block Pattern	<ul style="list-style-type: none"> • Foster smooth transitions at edges of bordering districts by adopting block lengths that are similar to those of other districts • Create traditional block sizes to harbor a diversity of uses and building massing options
Connectivity	<ul style="list-style-type: none"> • Build a gridded network of streets and open and public spaces • Create a new “sloping” street to connect Summer St. to the waterfront • Create three distinct urban places, The Square, The Boulevard, and The Hill, with their own distinct sense of place
24/7 Mix of Uses	<ul style="list-style-type: none"> • Development programming includes different uses to attract people to the district at all times of day • Create interaction with surrounding districts through complementary uses
Massing Variety & Design Diversity	<ul style="list-style-type: none"> • Construct buildings that are a mix of two- to three-story base retail fronts and mid- to high-rise buildings • Hire multiple design and architecture firms to create architectural diversity throughout the district
Vibrant Public Realm	<ul style="list-style-type: none"> • Integrate open space and streetscape plan to create public realm network similar to traditional Boston “Main Streets and green squares” • Fill gaps between Harborwalk and other open space networks • Create two main open spaces including Seaport Square, which will provide a large open green space for recreation and concerts, and Seaport Hill, an innovative pedestrian path connecting the neighborhood and waterfront
Sustainable Design & Green Strategies	<ul style="list-style-type: none"> • Dedicate 25% to green space • Integrate green roofs and white roofs into most buildings as a tactic to reduce urban heat island effect

Note: From “Seaport Square project notification form environmental notification form phase 1 waiver” by Gale International, Morgan Stanley, & W/S Development Associates LLC. (2008, June 2).

The Seaport Square PDA design principles set forth a program by which to provide a wide range of choices for citizens to move about the district and businesses to locate. The inclusion of short block lengths, increased number of streets and pedestrian paths, and programming for different building masses creates flexibility in the types of developments that can occur within the PDA. Therefore, as activity begins to increase in Seaport Square, developers can gauge the changing demands for activity in the district and adjust their plans to

provide for the services desired and needed by residents and visitors, which will in turn attract more activity.

An example of a project under construction in the rapidly developing Seaport Square district is One Seaport Square, the future One Seaport Square, the development proposed for Seaport Square Parcel L1, is at the center of the PDA. As a 250' tall glass building with 632,000 of gross square footage, the proposed project is generally within the design guidelines for the area. The developer posits that the large building frame will create a statement against the waterfront, which aligns with the BCDC's interest in creating more monumental architecture in the South Boston Waterfront. However, the building design is broken up both vertically and horizontally, with a 75' podium topped by two 175' towers, as encouraged by the design guidelines. The podium element creates an attractive and welcoming experience for pedestrians through its transparency, and planned retail use (Skanska & Kling Stubbins 2013). A proposed public plaza on the north side and a pedestrian pathway on the east side of the project should further activate the street life. However, the developer provides very little detail about how pedestrian amenities will be used to create a comfortable and safe street environment.

Evaluation

There are four overarching design considerations that are commonly incorporated into South Boston waterfront redevelopment projects including increasing access and connectivity, fostering a varied and active public realm, incorporating a mix of uses, and creating buildings with memorable architecture. The design guidelines for the study area specifically address the first three design considerations. However, while the design guidelines set forth specific standards for building design and style, they do not address the actual desired aesthetic outcomes for the districts, as reflected in local officials' critiques of the discussed development proposals.

Developers are eager to create better connections between their sites and surrounding destinations. For instance, the developer for the 316-322 Summer Street project requested the City of Boston establish a curb line so they could provide a sidewalk. Although the sidewalk is an added cost, there is a value to having better access to a site. More people on the street increases the safety of the neighborhood and protects tenants from theft and the building from vandalism. Therefore, the Article 42E and Fan Pier criteria that require developments to direct movement towards and enhance access to the waterfront are substantiated by the development outcomes analyzed in this case study.

Projects on large sites, such as the three PDA developments discussed in this study, take advantage of the available acreage by designing parks to meet the recreational needs of visitors and residents. For example, the Pier 4 development provides the space supporting boating, fishing, and other water-dependent activities. Additionally, Seaport Square takes advantage of the elevation change between the inland portions of the neighborhood and the waterfront to create a linear public space sloping down to the waterfront, providing a unique viewing experience not previously available in the South Boston Waterfront. The creation of distinctive spaces creates public places of landmark status, which will attract people to the project and foster activity.

However, the creation of open space is difficult in the case of infill developments where space is limited. Moreover, meeting the 30-50% requirements set forth by the urban design guidelines in the South Boston Waterfront is difficult for small and/or infill development sites. Most developers cope by simply loosely interpreting the open space requirement. They define any space that is public, even covered or indoors, as open space. Additionally the streets are often counted towards the public space requirement. Developers use these loose definitions for

the larger PDA developments, thus signaling that the large open space requirement may be burdensome to projects of all sizes.

During project approval, developers and the BCDC often discuss the relationship amongst public realm elements and buildings. The design guidelines for the study area state buildings must front sidewalks, avoid blank and monotonous street walls, and create geometries with the public realm that directs movement towards the waterfront. However, designers struggle relating building masses to the public realm and other buildings, possibly because the waterfront district is currently a blank slate, void of many landmarks or reference points.

All of the case study buildings use different forms of fenestration and ornamental decoration to create interesting facades. However, the new buildings use more contemporary materials such as glass than the rehabilitated buildings, which is consistent with the Fan Pier design guidelines. As a transparent material, glass provides excellent views of the water from within the building and helps activate the street life by displaying indoor activities. It is difficult to tell whether the glass creates buildings that are visually striking when viewed as part of the waterfront (The Fallon Company 2013). Some BCDC commissioners seem to believe the new proposed buildings can make a stronger statement against the water to better establish an identity for the new Innovation District, however they are unsure what kind of architectural elements will make the buildings more monumental. The City must decide whether it would prefer a more traditional, monumental, contemporary, or hybrid architectural and design schema and create more specific design guidelines based on these preferences.

Discussion and Conclusion

Water represents an edge, beyond which people can no longer move on land, and thus it is a stopping point for all terrestrial activity. Therefore the shoreline becomes a convergence point for people, and with proper planning and design, an activity center. The waterfront acts as a magnet by attracting visitors and guiding them through the inland streets of the district to arrive at their destination. The movement and presence of these people provides an opportunity to create a vibrant new district. The window of opportunity for redeveloping a waterfront community is small, and thus planners and urban designers must anticipate redevelopment opportunities and prepare a vision and a strategy to achieve that vision.

Movement throughout the neighborhood and access to the waterfront by foot are important components to creating activity and thus growing demand for businesses, services, shopping, cultural engagement, recreation, and living on the waterfront. Better access is created through short block lengths, dedicated pedestrian paths, active storefronts, and the presence of a variety of destinations. Planning and design officials in Boston use the PDA process to negotiate street patterns, dedicated public space, and amenities such as lighting and public plazas. However, not all communities have the ability to negotiate these factors so it is important to describe the ideal street network and streetscaping in design guidelines.

Avoiding monotonous building facades in urban waterfronts is exceedingly important because the isolation created by long and uninteresting street walls is exacerbated by presence of vast bodies of water. Varied textures and colors increase movement throughout the waterfront community, build a greater sense of vitality, and create a more comfortable pedestrian environment than long, monotonous street walls. Additionally maintaining view corridors through the suitable placement and form of buildings, will draw people towards the waterfront

and the desired movement throughout the community. Planning and design officials can specify the desired mix of building materials, dimensions, and siting in their urban design guidelines, as the BRA did for the South Boston Waterfront.

More importantly, plans must include a clear and specific community identity to be reflected by the local architecture. The City of Boston wants new development in the South Boston Waterfront to portray an innovative and entrepreneurial spirit through the use of monumental architecture that creates a strong statement against the waterfront and enhances important landmarks such as the ICA or courthouse. However, the design guidelines did little to reflect this desire. Therefore, planners and designers should decide what kind of identity will attract the desired activities to their waterfront neighborhoods, determine the architectural styles that will reflect these identities, and carefully write their design guidelines to communicate the desired architectural elements to developers. Some communities may decide they have a very specific vision, which will be implemented through very explicit and detailed guidelines about articulation, height, scale, materials, ornamental decorations, and relationships with the public realm. However, some communities may wish for a more organic mix of architectural styles, as with the Fan Pier PDA, which will require flexibility within the design guidelines.

Ultimately design guidelines in waterfront communities should frame the public realm to encourage movement towards the waterfront. The waterfront is a natural place to assemble people and activity, and can be used to drive demand for businesses and services. The presence of public spaces, recreation activities, and businesses attract further investment into the waterfront neighborhood and create the right conditions to transform the neighborhood. The right planning and urban design guidelines, as discussed in this study, create a multiplier effect of activity and improves the market and vitality within the neighborhood.

References

Bacon, E. (1976). *Design of cities*. New York: Penguin Books.

Boston Civic Design Commission (BCDC). (2013, May 7). *Draft minutes* [PDF document].

Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/081b644d-0733-4dc4-be40-46cea41afc7d>

Boston Civic Design Commission (BCDC). (2013, July 9). *Draft minutes* [PDF document].

Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/70492a1d-5583-45a7-803c-fca79dc9dc82>

Boston Redevelopment Authority (BRA). (1999). *Seaport public realm plan*. Retrieved from

<http://www.bostonredevelopmentauthority.org/getattachment/6add3767-6eb3-4a06-9d2d-03dd960391ad>.

Boston Redevelopment Authority (BRA). (2000). *South Boston Waterfront District municipal harbor plan*. Retrieved from

<http://www.bostonredevelopmentauthority.org/getattachment/390ef8dd-6269-4096-bb48-ed91f3d3ca03>

Boston Redevelopment Authority (BRA). (2005). *Development plan for Planned Development*

Area No. 64: Pier 4, South Boston Waterfront, Boston, Massachusetts. Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/08062d08-f5a4-4ccd-a228-93d18eac3fc3>

Boston Redevelopment Authority (BRA). (2010). *Development plan for Planned Development*

Area No. 78: Seaport Square project, South Boston. Retrieved from

<http://www.bostonredevelopmentauthority.org/getattachment/099c4926-225b-4b3b-815f-79c816f309da>

Boston Redevelopment Authority (BRA). (n.d.). *Glossary*. Retrieved from

<http://www.bostonredevelopmentauthority.org/about-us/glossary>

Boston Redevelopment Authority (BRA). (n.d.) *Waterfront planning*. Retrieved from

<http://www.bostonredevelopmentauthority.org/planning/waterfront-planning/waterfront-planning>

Boston Redevelopment Authority (BRA). (n.d.) *Urban design*. Retrieved from

<http://www.bostonredevelopmentauthority.org/planning/urban-design/urban-design-overview>

Boston Redevelopment Authority (BRA). (n.d.) *Who we are*. Retrieved from

<http://www.bostonredevelopmentauthority.org/about-us/planning-boston-s-future>

Boston Redevelopment Authority (BRA). (n.d.) *Zoning board of appeal*. Retrieved from

<http://www.bostonredevelopmentauthority.org/zoning/zoning-board-of-appeals>

Breen, A., & Rigby, D. (1996). *The new waterfront: A worldwide urban success story*. New York: McGraw-Hill.

Cullen, G. (1961). *Townscape*. London: The Architectural Press.

Desfor, G., Laidley, J., Stevens, Q., & Schubert, D. (Eds.). (2011). *Transforming urban waterfronts: Fixity and flow*. New York: Routledge.

Epsilon Associates. (2013). *Summer in the city*. Retrieved from

<http://www.epsilonassociates.com/#!/boston-projects-summer-2013/c1dtd>

Gale International, Morgan Stanley, & W/S Development Associates, LLC. (2008, June 2).

Seaport Square project notification form environmental notification form phase 1 waiver request. Retrieved from

<http://www.bostonredevelopmentauthority.org/getattachment/bd010580-f56c-4cb9-adf7-3b35596cc97d>

Grillo, T. (2009, March 23). Suit halts office plan slated for Fort Point. *The Boston Herald*.

Retrieved from <http://nl.newsbank.com/nl->

http://nl.newsbank.com/nl-search/we/Archives?p_product=BNHB&p_theme=bnhb&p_action=search&p_maxdocs=200&p_field_fselect-0=&p_text_fselect-

[0=Suit+halts+office+plan+slated+for+Fort+Point&s_dispstring=all%28Suit+halts+office+plan+slated+for+Fort+Point%29&p_field_date-0=YMD_date&p_params_date-0=date:B,E&p_perpage=10&p_sort=YMD_date:D&xcal_useweights=no](http://nl.newsbank.com/nl-search/we/Archives?p_product=BNHB&p_theme=bnhb&p_action=search&p_maxdocs=200&p_field_fselect-0=&p_text_fselect-0=Suit+halts+office+plan+slated+for+Fort+Point&s_dispstring=all%28Suit+halts+office+plan+slated+for+Fort+Point%29&p_field_date-0=YMD_date&p_params_date-0=date:B,E&p_perpage=10&p_sort=YMD_date:D&xcal_useweights=no)

Galland, D., & Hansen, C. J. (2012). The roles of planning waterfront redevelopment: From plan-led and market-driven styles to hybrid planning?. *Planning Practice & Research*, 27(2), 203-225. <http://dx.doi.org/10.1080/02697459.2012.661669>

Gordon, D. L. A. (2007). Financing urban waterfront redevelopment. *Journal of the American Planning Association*, 64(2), 244-265. <http://dx.doi.org/10.1080/01944369708975917>

Gehl, J. (2006). *Life between buildings: Using public space* (6th ed.). (J. Koch, Trans.). Copenhagen, Denmark: The Danish Architectural Press.

- Hersh, B. F. (2012). *The complexity of urban waterfront redevelopment*. Retrieved from <http://www.naiop.org/en/Research/Our-Research/Reports/The-Complexity-of-Urban-Waterfront-Redevelopment.aspx>
- Krier, R. (1979) *Urban space = Stadtraum*. New York: Rizzoli International Publications.
- Lincoln Summer Street Venture, LLC. (2008, February 12). *316-322 Summer Street notice of project change* [PDF document]. Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/48b3277b-6f58-486f-afca-75d5742368c1>
- Lynch, K. (1960). *The image of the city*. Cambridge: M.I.T. Press.
- Marshall, R. (Ed.). 2001. *Waterfronts in post-industrial cities*. New York: Spoon Press.
- Massachusetts Executive Office of Energy and Environmental Affairs. (2015). *Energy and environmental affairs mission and strategic plan*. Retrieved from <http://www.mass.gov/eea/>
- Massachusetts Executive Office of Energy and Environmental Affairs. (2015). *Chapter 91, the Massachusetts Waterfront Act*. Retrieved from <http://www.mass.gov/eea/agencies/massdep/water/watersheds/chapter-91-the-massachusetts-public-waterfront-act.html>
- New York State Department of State. (2009). *Making the most of your waterfront: Enhancing waterfronts to revitalize communities*. Retrieved from http://www.dos.ny.gov/opd/programs/pdfs/Guidebooks/lwrp/LWRP_guidebook.pdf

- New York State Department of State. (2010). *Strengthening downtowns through local waterfront revitalization programs*. Retrieved from http://www.dos.ny.gov/opd/programs/pdfs/accomplishment_reports/DowntownLWRPaccomplishments.pdf
- Sagalyn, L. B. (2007). Public/private development. *Journal of the American Planning Association*, 73 (1), 7-22. <http://dx.doi.org/10.1080/01944360708976133>
- Shaw, B. (2001). History at the water's edge, in: R. Marshall (eds.) *Waterfronts in post-industrial cities*. London: Spon Press.
- Skanska, & Kling Stubbins. *One Seaport Square* [PDF document]. Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/4f9a31a3-16b0-4a78-be86-ec8e25c6f67f>
- The Fallon Company. (2013, June). *Fan Pier- parcel 1* [PDF document]. Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/15313528-28cb-4d3d-bd0f-5d4115b411ff>
- The Fallon Company. (2013, January 8). *BCDC presentation: Parcel 'C'* [PDF document]. Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/2fd65a12-3147-4fd0-9aa7-646486044c1d>
- The Fallon Company. (2015). *Master site plan*. Retrieved from <http://www.fanpierboston.com/about/master-site-plan/>
- The Fallon Company. (2015). *The Boston Waterfront has arrived*. Retrieved from <http://www.fanpierboston.com/the-boston-waterfront-has-arrived/>

The Fallon Company, & Richard Burck Associates. (2013, May). *Fan Pier park* [PDF document]. Retrieved from <http://www.bostonredevelopmentauthority.org/getattachment/c5ae772b-56d7-4e28-9b0f-ebdd62cc5b9a>

Torre, L.A. (1989). *Waterfront development*. New York: Van Nostrand Reinhold.

White, K.N., Bellinger, E. G., Saul, A.J., Symes, M., & Hendry, K. (Eds.) (1993). *Urban waterside regeneration: Problems and prospects*. New York: Ellis Horwood, Ltd.

Zeitlen, S. (1945). Waterfront planning and the master plan. *Journal of the American Planning Association*, 11 (3), 27-32. <http://dx.doi.org/10.108/01944364508978555>

Appendix

Interview Questions

1. What was your role in the redevelopment process?
2. Why was this site ideal for revitalization?
3. What makes this specific project “successful”?
4. Who was involved in the design process and what were their roles?
5. For this specific district what were identified as the main design concerns?
6. How were these concerns addressed?
7. What are the design elements attributed to the success of this development (as defined earlier)?
8. What has been the public feedback about design? Specifically, what worked and what could be improved as far as building scale and elevation, levels of impervious cover, public spaces, hardscape, street design, vegetation, waterfront access, view sheds, etc?
9. How has this feedback been integrated into the waterfront redevelopment process at the city level?
10. On a scale from 1-10, how would the local community rate the “success” of this project?
11. How was this project received by the professional design community (architects, landscape architects, urban designers, etc.)?
12. What are the takeaways about preferential waterfront redevelopment design criteria from this project?