



Promoting Public Uses on the Chelsea Waterfront
An Interactive Qualifying Project Proposal

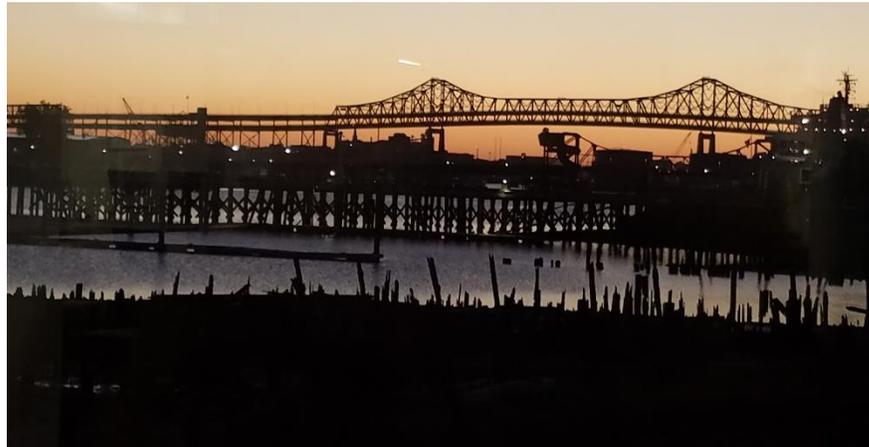
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This report represents the work of four WPI undergraduate students submitted to the faculty as evidence of completion of a degree requirement. WPI routinely publishes these reports on its website without editorial or peer review. For more information about the projects program at WPI, please see <http://www.wpi.edu/Academics/Projects>

Abstract

Heavy industrialization and the lack of empowerment for minority groups in Chelsea, Massachusetts cause health risks in the community and inhibit public use of the waterfront. The goal of this project was to determine ways to promote public use on Chelsea's industrial waterfront and determine the preferences of minority and low-income populations living around the waterfront. National comparisons and interviews guided us to understanding waterfront redevelopment processes. Interviews, surveys, and a focus group of stakeholders helped us understand public preferences for the waterfront and the city. We developed recommendations based on analysis of our data for our sponsor, GreenRoots, Inc. and the City of Chelsea. They should collaborate to realize the potential of the Chelsea waterfront.

Acknowledgements

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Margaret Carsley – *GreenRoots, Inc. and Chelsea Community Garden*

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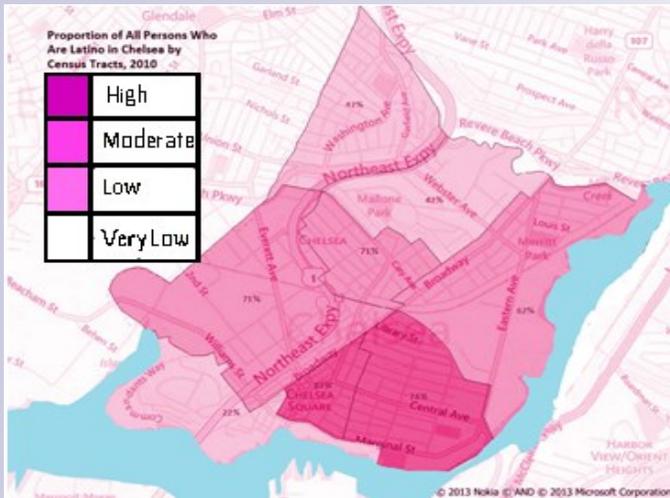
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Promoting Public Access to the Chelsea Waterfront

Purpose

The City of Chelsea is currently working on a Master Harbor plan to guide the development of waterfront areas that are being released from the regulatory program which determines allowable uses along industrial ports in Massachusetts. Community-based organizations like GreenRoots, Inc. are working to ensure that the preferences of disadvantaged residents are accounted for in the plan.



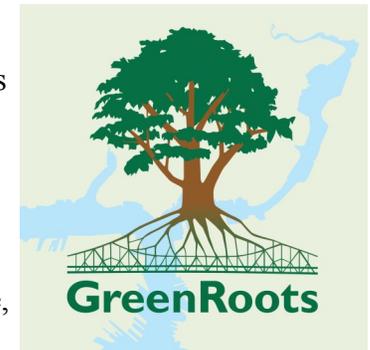
Latino Residency in Chelsea

2016;Wessell, 2014; Ou, 2016). These areas are susceptible to industrial and noise pollution making them less desirable, therefore they are populated by people of lower income who are often minorities. The majority of Chelsea’s Latino and low-income residents live in these cramped, rundown areas near the waterfront (Bash, 2000; US Census, 2010). Therefore, minority residents experience environmental injustice, defined as the increased risk of pollution, negative health effects, poor living conditions, and the lack of empowerment and voice primarily in low-income areas.

Background

The Chelsea waterfront falls under the Massachusetts’ Designated Port Area program, which prioritizes “physical and operational features needed to support businesses” and industries that require “marine transportation or large volumes of water” (Bowles, 2010; City of Gloucester, 2012; Massachusetts Government, 2016). DPAs allow industries in Chelsea, MA to occupy the majority of waterfront land, which leaves few areas for public use, such as parks, near waterfront neighborhoods. Physical barriers such as distance from their neighborhoods, few crosswalks, and few stop lights, also inhibit the use of and access to the Chelsea waterfront (EPA,

The Chelsea Waterfront



Authors: Brandon Hoghaug, Matthew Lenthall, Sebastian Miranda, & Oluchukwu Okafor

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Sponsor: GreenRoots, Inc.

An Interactive Qualifying Project submitted to the faculty of Worcester Polytechnic Institute in partial fulfillment of the requirements for the Degree of Bachelor of Science.

Goal

From knowledge gained through our literature review and communications with our sponsor, we developed a primary goal to guide our efforts. The goal of our project was to determine ways to promote public uses on the industrial waterfront of Chelsea, MA that express the vision of stakeholders, especially low-income residents living around the Chelsea River. In order to accomplish the goal we completed the following objectives:

1. Examined industrial and working waterfront cities in North America, which have redeveloped their waterfront, to learn how they have promoted public access along their waterfronts and involved the public in that process.
2. Identified the preferences of Chelsea's stakeholders, primarily low-income residents living on the waterfront, local government, industries, and property owners, about Chelsea's waterfront development and public access.
3. Determined best practices for increasing public access on Chelsea's waterfront with input from local stakeholders.



Our Team and the ECO Team



Eastern Mineral Salt Company

Methods

We used a number of different methods to achieve these objectives.

First, we investigated other working waterfronts in North American cities to generate ideas and techniques for waterfront development that can be applied to Chelsea based on their similarities. We conducted interviews with key local government officials in Lynn, MA, Gloucester, MA, New Bedford, MA, Vancouver, WA, Astoria, OR, and Baltimore, MD

Second, we conducted interviews and surveys to understand the preferences of local stakeholders and to ensure that their preferences are satisfied by the City's upcoming Master Harbor Plan. This was done in two steps: interviewing leaders in Chelsea and surveying Chelsea residents. We conducted 86 in-person intercept surveys with local residents of Chelsea in both English and Spanish to accommodate Chelsea's diverse population, with the help of the high school group, Environmental Chelsea Organizers (ECO).

Third, to gather more insight on the public's opinion for waterfront opportunities, we presented the information gathered from interviews and case studies to a focus group.

Findings

The findings, listed below, are from our surveys, interviews and case studies of other waterfront cities. They are organized into three themes: how Chelsea residents feel about their community, public preferences for the waterfront, and best practices for waterfront redevelopment. In total we had eleven findings, of which we have included five below.

How Chelsea residents feel about their community

A majority of Chelsea residents we interviewed generally felt that their opinions are not heard by local government.

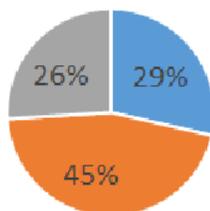
Of 38 residents surveyed, 55% did not believe that the Chelsea government would acknowledge their opinion about the decision making process in the city. They felt that the local government was going to act based on its own needs and that they only listened to large landholders and businesses in the city.



Traffic along Marginal Street

Do you know about current plans to redevelop the Waterfront?

N=77



Yes No Don't Know About the Waterfront

Survey Responses on Waterfront Knowledge

A large portion of Chelsea residents, Latino residents in particular, do not know about efforts to redevelop the waterfront or they do not know about the Chelsea waterfront itself.

Chelsea residents are unaware of the waterfront and its possibilities for redevelopment because the waterfront has been limited to industry and is unattractive. Many residents said that they only see the waterfront when they commute to and from Boston. Even then some residents said that they “did not even know that was part of Chelsea” when we described the salt piles along the Chelsea River.

Public preferences for the waterfront

Residents and the youth of Chelsea prefer parks and public uses that enable physical activities on the waterfront.

A majority of the residents of Chelsea that we surveyed prefer a waterfront that is “active”, a place that has walking paths, open spaces and parks for public use and recreation. The public’s desire for parks and recreational facilities on the Chelsea waterfront was a recurring theme as 42 of 56 participants asked during our survey wanted more parks along the waterfront.

Residents of Chelsea are concerned about pedestrian access to the waterfront on Marginal Street.

Pedestrian access to waterfronts and perceived pedestrian safety around waterfronts significantly affect public use along the water. According to James Marsh, Community Development Director of Lynn, MA people have been killed trying to cross highways to parks. Chelsea’s Marginal Street hinders access to the waterfront for most residents because it has no crosswalks or stop lights along the entire street. Approximately 25% of 56 residents that we surveyed about changing the waterfront wanted better pedestrian access to the River along with signage for crossing because they feel Marginal Street is too dangerous to cross.

Best practices for waterfront redevelopment

Continuous walkways from within cities to waterfronts have been shown to promote public use and facilitate access.

Waterfront walkways are inviting to most members of a city’s population because it does not cost anything to use them and enables pedestrian travel to the waterfront. We found that Boston’s harbor walk, spanning almost 40 miles along the shore, connects the community with the harbor by maintaining continuous public access along nearly all of the waterfront (Boston Redevelopment Authority). Most of the walkways do not have recreational facilities or open spaces but the lighting “makes it feel nice” according to a member of our focus group.

In waterfront areas visual enhancements have been shown to improve public opinion and use of waterfronts.

Small, but impactful, visual improvements, such as tending plants, cleaning trash, and art displays, can improve public regard for the waterfront and begin the process of redevelopment. Through our interview with the director of the waterfront partnership of Baltimore, we discovered that visual enhancements increase public use in the waterfront of the City. To start the waterfront development process they brought in mulch to make the waterfront more aesthetically appealing to the residents, which led to an increase in waterfront use.

Recommendations

Through analysis of our findings and literature review we developed several recommendations that would help the local government understand the preferences of Chelsea populations for the development of Chelsea’s waterfront.

We recommend that GreenRoots, Inc. and the City of Chelsea collaborate to inform low-income and minority residents about the waterfront parks and the redevelopment process.

Informing low-income and minority residents about the waterfront along Marginal Street and its benefits is the first step in the goal of increasing public participation in the redevelopment process. This can be done through bilingual meetings, documents, and online communications to the general public about the benefits of parks and walkways along the water and the potential beauty of the waterfront.



The Chelsea Community Garden

We recommend that the City of Chelsea and GreenRoots, Inc. collaborate with the uninformed and marginalized public and include their voice in the upcoming Master Harbor Plan.

Investigating other waterfront cities in North America has shown that including the marginalized populations is important and promotes better planning and development that the public approves of and uses. Gloucester, MA implemented direct resident involvement by conducting meetings with different communities in the city and conducting a citizen’s panel that recorded the outcome of events (City of Gloucester, 2014). The City of Chelsea and GreenRoots, Inc. should then attempt to increase attendance of low-income and minority groups to public hearings and events.

We recommend that the City of Chelsea collaborate with the MA Department of Transportation (DOT) to invest in pedestrian access to the waterfront by creating crosswalks, traffic signage, street lights, and improved sidewalks.

Residents of Chelsea do not feel safe crossing Marginal Street and would not feel safe going to any parks along the waterfront without a means of crossing. However, Chelsea’s Marginal Street is not under the jurisdiction of the City of Chelsea because Marginal is a major trucking route, therefore their ability to change access is limited, according to Ms. Power of GreenRoots, Inc. As a result, the local government of Chelsea should work with the Massachusetts DOT, which manages the roadway of Marginal Street, to find and enact solutions for pedestrian access to the waterfront.

We recommend that the City of Chelsea implement improvements, such as cleaning the sidewalks, tending the plants and creating small events, along the waterfront to make the area more inviting.

Creating free or low-cost events along the waterfront could attract people and would enable residents to witness the current state of the Chelsea River, while introducing them to new possibilities. Small events should be held at PORT Park and other sites along the waterfront with the collaboration of GreenRoots, Inc. in order to familiarize local residents with the waterfront and create a culture of waterfront use within the community.

Conclusions

The case studies we investigated will help the City of Chelsea and GreenRoots, Inc. determine the best ways to redevelop the waterfront while including all residents in the process. They must also collaborate to inspire and inform the public about the potential of the Chelsea waterfront.

At the end of our project we delivered the following to GreenRoots, Inc.:

- Documents detailing public opinion regarding waterfront usage and development.
- A comparative matrix of waterfront locations that we investigated.
- An article in the newspaper “El Planeta” that will introduce GreenRoots, Inc.’s vision.



GreenRoots Commemorative Wall

Authorship

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Executive Summary	All	All	All
1.0 Introduction	All	Brandon	All
2.0 Background	All	Matthew	All
2.1 Environmental Injustice	Brandon, Sebastian	Matthew, Oluchukwu	All
2.2 Waterfront Regulations	Matthew, Oluchukwu	Matthew	All
2.3 Working Waterfronts	Matthew, Oluchukwu	Matthew, Brandon	All
3.0 Methodology	All	Sebastian	All
3.1 Objective 1	Sebastian, Oluchukwu	All	All
3.2 Objective 2	Brandon, Sebastian	All	All
3.3 Objective 3	Matthew, Sebastian	Brandon	Sebastian
4.0 Findings	Matthew, Oluchukwu	Matthew, Brandon	All
5.0 Recommendations	Brandon, Sebastian	Oluchukwu, Sebastian	All
6.0 Conclusion	Brandon, Sebastian	Oluchukwu	Matthew

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1.0 Introduction Chapter

Waterfront cities in the United States often developed from mercantile cities into major industrial centers. The importance of ports and shipping, prompted markets and railroads to grow from port cities, causing them to become industrialized (Rodrigue, 2013). Working waterfronts, lands that provide access to water-dependent activities, subsequently became foul smelling, polluted, and dangerous places for the public during the early twentieth century (Seattle, 2004; Zhang, 2015). Undesirable areas around industrial waterfronts usually lead to the establishment of low-income, minority, and immigrant communities around industrial waterfronts, where residents experience a heavy burden of environmental and health risks (Kay, 2012). Pollution, caused from industrial processes has caused residents that live near industrial sites, found on working waterfronts, to have shorter life expectancies, than residents in more affluent neighborhoods (Kay, 2012). Pollution induced health problems are overwhelmingly shouldered by the poor due to their less desirable neighborhoods, and are an example of environmental injustice. Vulnerable communities are often made up of minorities, and their voices are seldom heard in development laws and regulations (EPA, 2016; Kay, 2012).

Industrialized waterfronts rarely encourage public use for residents. However, Chelsea MA is a working waterfront city that envisions a vibrant and active waterfront that appeals to all residents. Currently, Massachusetts' Designated Port Areas (DPA), a program which provides a regulatory framework of the Chelsea River, inhibit public access by allowing only industrial uses on the waterfront, which include shipping cargo, storage of petroleum products, and storage of road salt (Heacock, 2011; Vanasse, 2010). DPA regulations benefit industrial companies in Chelsea by allowing them to store the majority of their goods on the waterfront and by protecting the area from being shifted to other non-industrial uses. These limit the land available for the development of public spaces and non-industrial businesses that can benefit the entire community along the Chelsea River (GreenRoots, 2016; State of Massachusetts, 2010).

The City of Chelsea and local Nongovernmental Organizations (NGOs) such as, GreenRoots, Inc., a community outreach group that combats environmental injustice, share the goal of improving the standard of living of local residents by increasing public uses within the city (DePriest, personal communication, 2016; GreenRoots, 2016). Increasing public uses and open spaces can reduce pollution levels, which studies show correlate with high cardiovascular illness rates (Davis 2010; Hendricks, 2014; Kay, 2012; MDPH, 2007; Uriarte, 2014). Likewise, the construction of parks and walkways can mitigate environmental hazards, build stronger communities, and improve the quality of life of its residents (Heany, 2015; PPS; Umut, 2013; Zimonjic, 2001). GreenRoots, Inc. is seeking to empower the voice of all the residents in Chelsea, especially minority groups that usually lack equal participation in decision-making processes (GreenRoots, 2016; Kay, 2012). Including all the public is essential to successful waterfront redevelopment because the affected residents can reveal problems and solutions that leaders and decision makers may not recognize.

The City is currently developing a Master Harbor Plan through the Metropolitan Area Planning Council (MAPC) to redevelop the Chelsea waterfront and make it more inviting. However, the voices and preferences of the low-income residents and minority groups are missing in this planning process because “emphasis is often placed on a one-way flow of information - from officials to citizens” and they lack an understanding of redevelopment possibilities (Arnstein, 1969, Power, personal communication, 2016).

The goal of this project was to determine ways to promote public use on the industrial waterfront of Chelsea, MA that express the vision of stakeholders, especially low-income residents living around the Chelsea River. We worked with GreenRoots, Inc. to gather input from the low-income and minority residents of Chelsea to obtain an overview of what they want for Chelsea and its waterfront. We interviewed representatives of other waterfront cities in North America that have gone through similar processes, to learn about the relative success of their waterfront redevelopment actions. We analyzed data from our surveys and interviews to evaluate methods for waterfront development that benefit all residents in the City of Chelsea. This will ensure that the preferences of all stakeholders in Chelsea are accounted for in the Master Harbor Plan.

2.0 Background Chapter

The City of Chelsea has a diverse population that is susceptible to pollution and lacks access to open space on the waterfront because the government protects industries and there is a lack of empowerment in the government process. In this chapter, we address the social and environmental injustices that residents of Chelsea face, especially those who live near the waterfront. We examine how federal regulations can both promote and inhibit waterfront development and provide the basis for state laws, such as the DPA in Massachusetts. We investigate cities that successfully redeveloped their waterfronts while including the public in the decision making process. We then compare researched cities with Chelsea.

2.1 Environmental Injustice on the Chelsea Waterfront

Environmental injustice is the unfair treatment and exclusion of disadvantaged populations in developing environmental laws and regulations (EPA, 2016). Minority groups typically experience environmental injustice at a greater rate than more influential majority groups, due to residential location as well as discrimination in decision making (Kay, 2012). Chelsea’s population consists of 62% Latinos, with 23% of all residents living in poverty (US Census, 2010). Most of Chelsea’s Latino residents live within a 10-block area of cramped, rundown dwellings, directly next to the industrial facilities on the waterfront (Figure 1) (Bash, 2000).

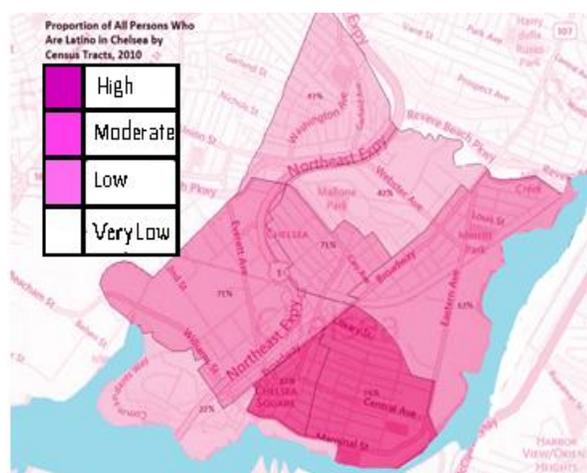


Figure 1 Housing Distribution for Latino Residents in Chelsea, courtesy of Uriarte, M., Jennings, J., & Douglas, J. (2014)

Residents in these rundown areas are exposed to pollution resulting from large diesel trucks that transport industrial goods into the city, and pollutants associated with burning large quantities of fossil fuels including carbon monoxide, sulfur oxides, and nitrogen oxides (Hao & Li; EPA, 1990). Studies show that air pollution correlates with many negative health impacts and Chelsea has one of the highest occurrences of stroke and cardiovascular disease in Massachusetts (Davis, 2010; MDPH, 2007). Similarly, these industries have polluted the water, directly impacting residents along the waterfront and have decreased residents' quality of life (Dolbec & Tran, 2011).

The location of low-income residents in Chelsea also limits their access to open spaces, which are lands dedicated to conservation, recreation, or agricultural use. In the City of Chelsea, there are very few parks and the ones that do exist are “most likely to be within walking distance of predominantly upper-middle class and white urban neighborhoods” rather than minority or low income communities (EPA, 2016; Wessell, 2014; Ou, 2016). Only the Mary O’Malley Park lies along the waterfront, but it is relatively far from the industrial centers (Figure 2). The only exception to the lack of parks in the industrial areas is PORT Park, created in 2013 on Marginal Street (Laidler, 2013). Instead of open spaces and other public facilities, the Chelsea waterfront is dominated by industries.

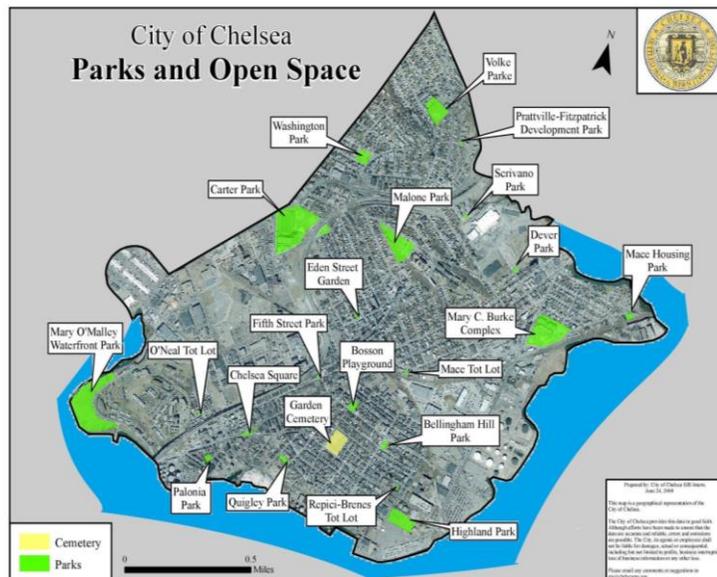


Figure 2 Parks and Open Space of Chelsea in 2008 courtesy of City of Chelsea. (2016). Economic Development. Retrieved March 29, 2016, from <http://www.chelseama.gov/>

2.2 Industrial Waterfronts and Regulations

Due to regulations that support industry, Chelsea uses most of its waterfront for industrial and commercial activities such as, fuel storage, rental car parking lots, and road salt storage (Esri, 2016). Regulatory decisions made by the federal and state governments preserve the heavy industrialization of Chelsea and other waterfront cities because industries benefit local and regional economies (Seattle, 2004; US Government, 1972).

Massachusetts and other waterfront states abide by the overarching federal Coastal Zone Management Act (CZMA), which prioritizes “coastal-dependent uses” which are defined differently by state governments, but are often interpreted as businesses that require shipping

access (Ankerson, 2014; US Government, 1972). The federal government does not directly enforce this priority, but instead offers grants and funds for states that comply. Federal funding motivate states to properly and effectively utilize their waterfronts for water dependent uses across the nation and are the platform from which most state waterfront laws develop.

Chelsea, MA and other Massachusetts cities, follow the CZMA guidelines by establishing Designated Port Areas, which promote and protect water-based industries. Massachusetts’ DPAs are limited to (Bowles, 2010; City of Gloucester, 2012; Massachusetts Government, 2016):

- “physical and operational features needed to support businesses”
- “industries that require marine transportation or large volumes of water”
- However, 25% of land in DPAs can be developed to support industry indirectly, such as restaurants, retail, parking lots, and sitting areas.

Thus, the DPA protects industries that bring economic advantages to cities. Table 1 shows industrial presence in different Massachusetts cities due to DPA regulations. Chelsea also faces a similar situation because DPA protection of industries limits the redevelopment of its waterfront especially regarding parks and public amenities.

Table 1: Industrial presence in DPA cities (Bowles, 2010; Garcia, 2012).

City	State of waterfront industry
New Bedford, MA	70% industrial use
Gloucester, MA	71% industrial use and 12% commercial

2.3 Redevelopment of Working Waterfronts

As industry has declined in the last century, waterfront regulations that once protected industry now hinder development for other uses. Waterfront communities have recently begun to understand the benefits of public uses along their waterfronts, especially parks and open spaces which benefit cities by (Heany, 2015; Kelling & Wilson; Umut, 2013; Jay, 2012; Vanasse, 2010):

- mitigating industrial pollution and improving environmental conditions
- increasing property values and encouraging economic investment
- providing a relationship between water and the city and attracting tourists
- preventing damaging flooding on waterfronts
- providing an avenue for people to socialize, relax and have fun in the community together
- reducing crime in surrounding areas

However, in some cases underused parks can become associated with crime (Fleming, 2016; Kelling & Wilson; Luymes, 1995; Safer Neighborhoods, 2007; Sullivan, 2004).

Residents of industrial cities also view waterfront open spaces and public facilities as physical and visual improvements to a city that serve to increase respect for the waterfront (Gobster & Wephal, 2004). In Hamilton, Ontario, residents saw the construction of a walking trail

as “a key element in the transformation of Hamilton” from a dirty industrial center to an inviting community by expanding public uses of the waterfront from 5% to 25% of the city’s lakefront (Wakefield, 2007).

In an attempt to redevelop its waterfront, Chelsea has refined a portion of its restrictive DPA. The City of Chelsea recently applied for DPA revision in an attempt to remove land from the designation (Daniel, 2016). The Coastal Zone Management (CZM) agreed that a portion of the DPA failed to provide railway access and proper waterfront infrastructure for DPA uses and has subsequently removed those lands from the DPA, allowing non-industrial development (Figure 3)(EOEEA & OCZM, 2015; Massachusetts Government, 2016).

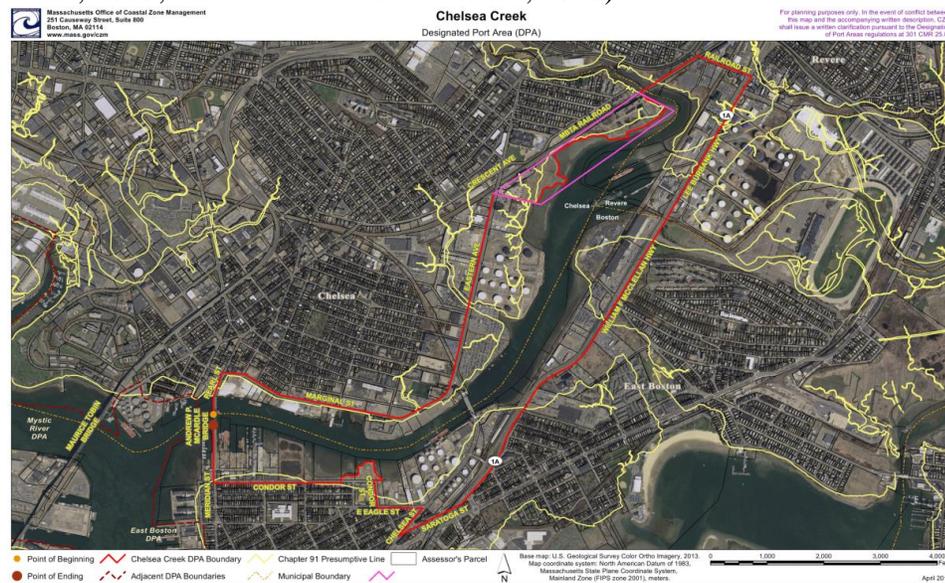


Figure 3 DPA Boundary after Revision (boxed in pink) courtesy of Massachusetts Government. (2016). Chapter 91, the Massachusetts Public Waterfront Act | MassDEP. Retrieved April 13, 2016, from <http://www.mass.gov/eea/agencies/massdep/Water/watersheds/chapter-91>

During redevelopment processes, collaboration between local government, public agencies, nonprofit organizations and land developers can transform waterfront cities (Vancouver, 2016). Due to robust stakeholder collaboration, Astoria, Oregon redeveloped its waterfront which once had “little to no public access”, into an award winning waterfront that protects the needs of the public (Moniz 2008). Keeping the public regularly informed or allowing them to vote on waterfront plans can garner support for waterfront redevelopment (City of Burlington, 2015; Moniz, 2008). Port Huron, MI created a public land fund to expand public uses as a result of various focus groups with the general public (Durfee, 2013). Residents of Chelsea have taken part in a similar visioning group to discuss waterfront development. The group included residents in planning for the newly released Forbes industrial site, which lies on the northeast corner of the Chelsea River, into a “mixed-use project” (City of Chelsea, 2016; Daniel, 2016).

Public involvement in waterfront redevelopment is especially important when a city has a vulnerable, low-income minority population. Low-income and minority residents have historically low voter turnout rates and often distrust government because they lack information, time, and personal engagement with local representatives (Diamond, 2007; Lopez & Gonzalez-Barrera, 2013; Marzuki, 2015; Saldivar, 2015). Preferences of marginalized groups are often drowned out

by those of commercial developers, that seek profit rather than to protect the public (Kirkland 2015; Seattle, 2004). Residential development can cause gentrification of lower-income groups because of developers seeking to gain profits from middle and upper class individuals and the lack of voice for low-income residents (Oliva, 2006). Lack of voice and participation for disadvantaged groups in decision making processes is analogous with a lack of resident power to change their communities (Arnstein, 1969).

GreenRoots, Inc., an offshoot of the Chelsea Collaborative, works to involve disadvantaged groups of Chelsea in the community and its future. They work to expand public access within the city, and have prevented the development of a diesel power plant next to the Mary C. Burke elementary school along the Chelsea River (Chelsea Collaborative, 2016). They have increased the City's minute amount of public access by creating a walkway along Mill Creek, which connects to the Chelsea River, with bilingual signs at the request of Latino residents (Chelsea Collaborative, 2016). We collaborated with GreenRoots, Inc. to investigate the preferences of Chelsea's low-income residents for waterfront redevelopment.

3.0 Methodology

The goal of this project was to determine ways to promote public use on the industrial waterfront of Chelsea, MA that express the vision of stakeholders, especially low-income residents living around the Chelsea River.

In order to accomplish the goal we completed the following objectives:

1. Examined industrial and working waterfront cities in North America, which have redeveloped their waterfront, to learn how they have promoted public access along their waterfronts and involved the public in the process.
2. Identified the preferences of Chelsea's stakeholders, primarily low-income residents living on the waterfront, local government, industries, and property owners about Chelsea's waterfront redevelopment and public access.
3. Determined best practices for increasing public access on Chelsea's waterfront with input from local stakeholders.

In this chapter we explain how the team accomplished each objective, which led us to produce our deliverables.

3.1 Objective 1: Examine industrial and working waterfront cities in North America.

Examining working waterfronts within North America provided us with ideas and applicable techniques that these cities' local governments have used in redeveloping their waterfront. We used different waterfront cities as case studies, especially those that were similar to Chelsea in regulations, demographics and redevelopment of their waterfronts (Table 2).

Table 2: Case Studies; Light Blue = Not Interviewed; Orange = Interviewed

Massachusetts Cities	Interviewees MA	North American Cities	Interviewees Outside MA
Boston	-	Astoria, Oregon	Community Development Director
Chelsea	Planning & Development Director, Community Garden Coordinator, GreenRoots Inc. Executive Director	Baltimore, Maryland	Waterfront Partnership President
Gloucester	Planning Director, Senior Project Manager	Burlington, Vermont	-
Lynn	Community Development Director, Project Coordinator, Executive Director	Waukegan, Illinois	-
New Bedford	Port Director	Port Huron, Michigan	-
Salem	-	Vancouver, Washington	Gramor Development Project Director

We then contacted representatives from Vancouver, WA; Baltimore, MD and Astoria, OR based on their drastic redevelopments from industrial centers to inviting communities (Appendix G). We asked questions regarding waterfront development and public inclusion, while tailoring them to each city (Appendix B). We reviewed development processes and outcomes in these cities and others from Table 2.

We also wanted to understand how other Massachusetts DPA cities endeavored to change and develop their waterfronts from industrial centers to inviting public centers. We conducted interviews with port, planning, economic and community development directors in New Bedford, Gloucester, and Lynn, respectively, to understand their waterfront development processes and generate lessons that apply to Chelsea (Appendix G). These cities were selected based on their similarity to Chelsea in DPA designation. The team asked open ended questions regarding the waterfront development, use, and public input in development (Appendix B).

We recorded each interview with the permission of interviewees and then conducted a content analysis consisting of separating ideas, coding data, interpreting ideas within categories, and interpreting data as a whole (ASELL, 2016). Additionally, all team members summarized key points and elements of interviews, while identifying useful quotations to interpret qualitative data. We used the data to provide a detailed understanding of each city by creating a case study matrix that compares processes and outcomes in each city’s development of various public uses (Appendix H). Each column of the matrix refers to a code of our content analysis.

3.2 Objective 2: Identify the preferences of Chelsea’s stakeholders, primarily low-income residents.

We gathered the opinions of Chelsea’s residents, industries, and local government, regarding the current use and their vision of the Chelsea waterfront. We obtained different perspectives about waterfront usage in a two-step process.

First we collected opinions on waterfront development from Chelsea Government officials and NGOs. The team interviewed Roseann Bongiovanni of GreenRoots, Inc., Chelsea Planning & Development Director John DePriest, and Margaret Carsley of the Chelsea Community Garden, to understand how they felt about waterfront redevelopment and public uses in Chelsea. Furthermore, we asked them about their relationships with businesses, and their ability to involve the low-income public in the redevelopment process (Appendix C). We recorded each interview with permission and then conducted a content analysis on each to add to our matrix.

Second, to determine public preferences and knowledge about Chelsea and its waterfront, we conducted short in-person intercept surveys because they usually offer high response rates (Brooker & Schaefer; Doyle). The team surveyed 64 residents around Marginal St, Essex St, Congress Ave, and Broadway Street in two groups for a total of ten hours per group. These areas were chosen to target the low-income and minority groups in Chelsea. We wrote the sample survey in both English and Spanish, to accommodate Chelsea’s diverse population (Appendix D and E). Similarly, we surveyed 22 teenagers from the Boys & Girls Club in Chelsea and the Environmental Chelsea Organizers (ECO) team that works with GreenRoots, Inc., to provide us with a different perspective from the future generation of the city. While conducting the surveys, we kept the identities of the participants confidential and did not ask any sensitive or personal questions that could upset or discourage them from participating.

3.3 Objective 3: Determine best practices for increasing public access on Chelsea’s waterfront.

To gather more insight on the public’s opinion on opportunities to redevelop the industrialized waterfront, the team evaluated the information on current practices gathered from interviews and research from other cities. We conducted a focus group to obtain suggestions on the best ways to develop Chelsea’s waterfront. Our focus group consisted of a class of 23 students at Bunker Hill Community College, taught by Professor Mark Beaumont. We first explained our project and goals to the class, then presented the ideas from our case study matrix, such as public walkways that have been successful in Astoria, Vancouver, and Hamilton. We then opened the floor to discussion and we urged them to consider the effect on low-income residents. We also asked the students for ideas on best ways to include the disadvantaged residents in development processes. Additional focus groups were planned, however, scheduling conflicts associated with weather limited us to the one conducted at Bunker Hill Community College.

4.0 Findings

After analyzing the data that we gathered through our methodology we developed a set of findings. Our findings are intended to help GreenRoots, Inc. provide suggestions to the City of Chelsea on best ways to redevelop Chelsea’s waterfront and involve the low-income and minority residents of Chelsea in the process. We separated our findings into three major themes:

1. How Chelsea residents feel about their community.
2. Public preferences for the waterfront.
3. Best practices for waterfront redevelopment.

4.1 How Chelsea residents feel about their community

Finding #1: A majority of Chelsea residents that we interviewed generally feel that their opinions are not heard by local government.

Through surveys conducted in Chelsea, we discovered that residents, especially Latinos, felt that local government did not listen to their opinions. Latinos, who are often low-income residents in this community, feel unrepresented by the city, which prevents them from expressing their preferences and their opinions. Of 38 residents surveyed, 55% did not believe that the local government would acknowledge their opinion during decision making processes in the city (Figure 4). Through our conversations with some residents, they felt that the government was going to act based on its own needs and that the City of Chelsea only listened to large landholders and businesses in the city.

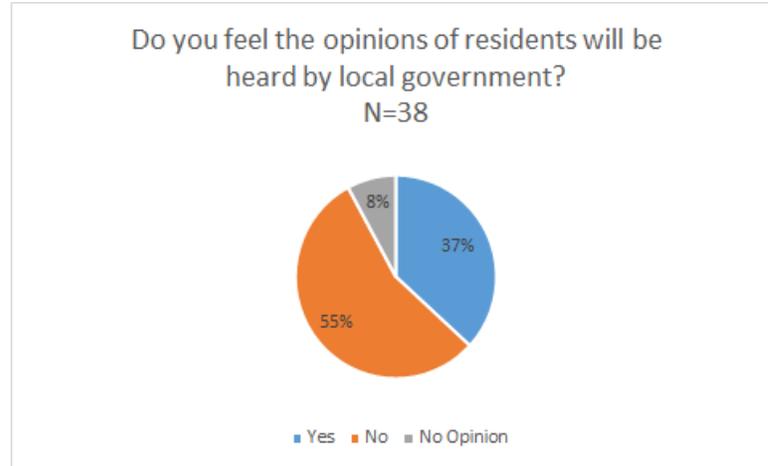


Figure 4 Residents feel their opinions are not heard by local government.

Finding #2: A large portion of residents of Chelsea, especially Latino residents, do not know about efforts to redevelop the waterfront or they do not know about the Chelsea waterfront itself.

While conducting surveys in Chelsea, we learned that the majority of residents, especially Latinos, lack awareness of the waterfront. About 45% of the residents that were surveyed had no

knowledge of the plans to redevelop the waterfront. Only 29% of residents that we surveyed were aware of waterfront redevelopment procedures and 26% did not know that Chelsea has a waterfront (Figure 5).

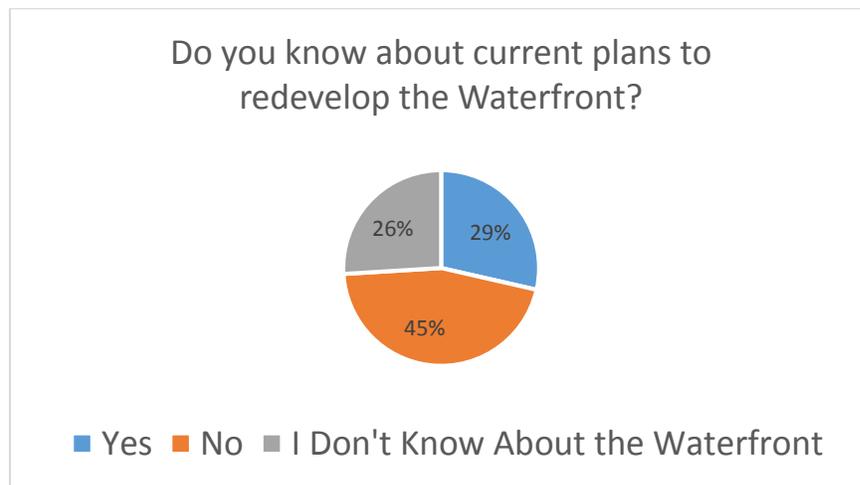


Figure 5 Residents knowledge of Waterfront Development.

Chelsea residents are unaware of the waterfront and its possibilities for redevelopment because the waterfront has been limited to industrial use. The waterfront also lies far from the center of Chelsea, so residents have never had a reason to pass by the Chelsea River. The only time many residents see the waterfront is when they commute to and from Boston. Even then, some residents said that they “did not know that was part of Chelsea” when we described the salt piles and industries on the Chelsea River. Therefore, these uninformed residents likely have not participated in any aspects of Chelsea’s waterfront redevelopment plans.

Finding #3: Residents of Chelsea are concerned about crime, violence, and drug use in the community, and fear that new public facilities would enable criminal activity.

With the analysis of our surveys, we found that Chelsea residents were not very concerned about waterfront redevelopment and public use. When we asked residents what they wanted to change in Chelsea nearly 70% of 86 residents surveyed responded that violence, security, crime rates and drug use needed to improve and change in Chelsea (Figure 6).

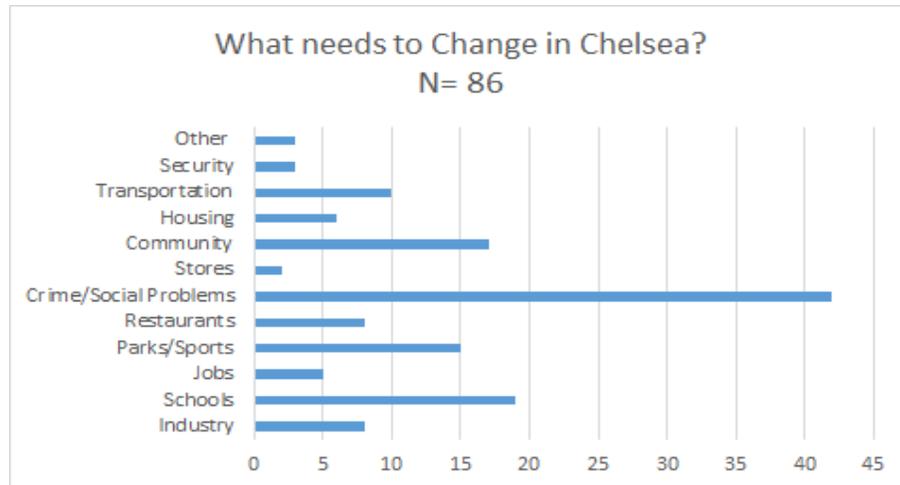


Figure 6 Resident Preferences for Change in Chelsea

Some teens at the Boys and Girls Club in Chelsea also mentioned that they do not like using the parks because crime and drug use occur in some of those areas. Maria Belen Power of GreenRoots, Inc. confirmed this statement and mentioned an open space behind Beth Israel Health Care Center in Chelsea where several illegal activities occur.

Understanding the crime problem in the Chelsea is important because it has more immediate and possibly life threatening impacts on residents’ lives, which draws attention of Chelsea residents away from opportunities for the waterfront. The problem of crime in Chelsea hinders redevelopment because residents focus on the more immediate criminal problem first and associate some public spaces with crime and drug use.

4.2 Public preferences for the waterfront

Finding #4: Residents of Chelsea are concerned about pedestrian access to the waterfront on Marginal Street.

Pedestrian access to waterfronts promote public use and safety along them. In Lynn, people have been seriously injured trying to cross the Lynn Way Highway, which cuts off 305 hectares of waterfront, and impedes public access in the area, according to Community Development Director James Marsh. Similarly, in New Bedford, Route 18 blocked off part of the central waterfront, but traffic calming techniques such as road narrowing, speedbumps, and pedestrian lights made the roadway safer so that pedestrians “don’t feel like they are going to die” when crossing it, according to Port Director Edward Washburn (Coastal Mags, 2013). Breaking down these pedestrian barriers in other cities enabled public use and access in waterfront and urban areas.

Chelsea stakeholders also recognize the need for crossing lights and better pedestrian access. Chelsea’s Marginal Street hinders access to the waterfront for most residents that want to get there. Marginal Street has no crosswalks or stop lights along the entire street. Approximately 25% of 56 residents that we surveyed about changing the waterfront wanted better pedestrian access to the Chelsea River along with signage for crossing because they feel Marginal Street is

too dangerous to cross. This is because heavy traffic from Boston and numerous trucks can intimidate pedestrians trying to dart across the road, according to Ms. Bongiovanni of GreenRoots, Inc. Residents and especially families do not even want to visit the innovative PORT Park on the waterfront because “it's difficult to have a park there and not have access to cross it” and they fear for the safety of themselves and their children, according to Ms. Bongiovanni and Mr. DePriest (Figure 7).



Figure 7 Lack of Crosswalk to PORT Park on Marginal Street

The sidewalks along Marginal Street also fail to accommodate pedestrians. Residents feel “the city has to put in an effort to change the sidewalks” according to our focus group. We have also personally witnessed how broken, narrow, and discontinuous the sidewalks along Marginal Street are because we walked along them nearly every time we visited Chelsea. These disconnected and narrow sidewalks also prevent families from bringing their children in strollers to visit any future or current public developments on the waterfront, such as PORT Park.

Finding #5: Residents and the youth of Chelsea prefer parks and public use that enable physical activities on the waterfront.

A majority of the residents of Chelsea that we surveyed want a waterfront that is “active”, a place that has walking paths, open spaces and parks for public use and recreation. PORT park, the only park along the Marginal Street waterfront, is a “passive” park because often times kids use it “for arts and cultural activities” rather than physical activities, according to Ms. Bongiovanni. The public’s preference for parks and recreational facilities on the Chelsea waterfront was a recurring theme as 42 of 56 participants during our survey wanted more parks along the waterfront (Figure 8).

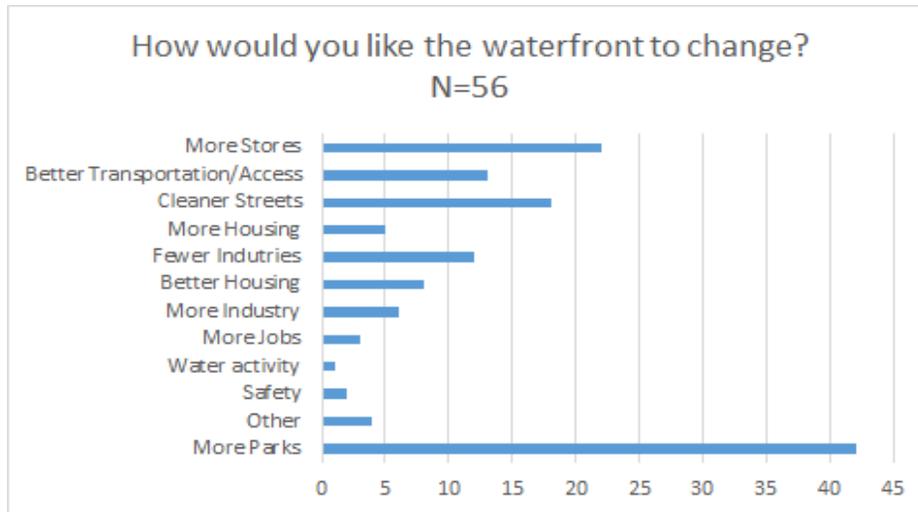


Figure 8 Resident preferences for the waterfront, multiple responses per participant

Students in our focus group at Bunker Hill Community College also believed that “active” areas should be created in the development process of the waterfront to encourage families to visit the Chelsea River more often. Additionally, the development of green zones and “exercise areas” will attract children, and therefore families, to the waterfront. We were able to support this through survey responses, as many of the residents that participated wanted more active areas for families in the City of Chelsea. Waterfronts that bolster “active” uses for the public and the community, resonates within the City of Chelsea, according to Mr. DePriest.

The students at the Boys and Girls Club in Chelsea, varying in age from fourteen to eighteen, demonstrated a particular interest in waterfront development because it gives them an area to interact with one another. Sixteen of the twenty-two teenagers at the Boys and Girls Club and ECO that we spoke to wanted more recreational areas. These areas were defined by students as:

- Parks
- Basketball courts
- Soccer and softball fields

Targeting the youth is important, as Ms. Carsley stated that, “our kids are not getting enough programs in the city” as people are focusing on addressing other problems such as violence, crime and security rather than implementing youth programs. Ms. Bongiovanni also noted that the one park along the industrial waterfront, PORT Park, while being inviting to teenagers for its basketball courts, is not welcoming to everyone because there are not enough amenities for younger children. The opportunity for mixed use in PORT Park is very minimal and therefore is a deterrent for people that are not interested in only using the basketball facilities.

4.3 Best practices for waterfront redevelopment

Finding #6: Public hearings alone do not adequately gather the opinions of the public.

Public hearings are the most popular means of gathering the opinions of the general public according to our research. In Massachusetts, cities are required by law to conduct public hearings

to include the public in waterfront development, according to Mr. DePriest. Lynn, Massachusetts conducted twenty six public hearings, with the aid of consultants, while others such as Gloucester, New Bedford, and Vancouver, WA only conducted about five each, according to the representatives that we interviewed in each city. Almost all city representatives we interviewed stated that they used public hearings as their primary means of gathering public opinion, due to its ease of implementation especially in gathering concerned parties. However, attendance to public meeting usually averages around 40 residents and rarely surpasses 100 residents according to Mr. DePriest (Sasaki, 2009). According to Mr. DePriest these meetings often attract the same people that have spare time or prior knowledge of the topics that are discussed. However, he stated that in order to attract more people to these meetings, they have to be better organized by time of day and residents should be compensated in the form of food or childcare during the meetings.

Finding #7: Waterfront development processes have been less contentious when the public was actively involved.

Directly gathering the preferences of residents, rather than relying only on public meetings, can more efficiently include the opinions of residents in the waterfront redevelopment process. Both Salem, MA and Baltimore, MD conducted surveys of residents through door knocking and digital media about the waterfront, according to Waterfront Partnership Director Laurie Schwartz and the Salem Harbor Plan (Fort Point Associates, 2008). Ms. Schwartz also said that Baltimore specifically targeted low-income and minority groups with in-person and online surveys, and received over 1000 responses. These responses were recorded in an opinion poll to address the concern of the City of Baltimore about people not visiting the downtown district. Gathering preferences enabled Salem and Baltimore to develop parks, public boating wharfs, and improved historical sites using the ideas gathered from the public, according to Ms. Schwartz and the Salem Harbor Plan (Fort Point Associates, 2008).

Directly involving residents in idea generation, opinion gathering, and record keeping leads residents to better understand and approve waterfront development processes. Gloucester, MA involved its residents while developing its Master Harbor Plan by conducting meetings with different communities in the city each week for a month long period. During these meetings residents determined the final results through a citizens panel that recorded major ideas to ensure that the findings of the meetings agreed with public preferences (City of Gloucester, 2014). Through this process, the City of Gloucester secured land for a path connecting various pre-existing parks, beaches, kayak launches, and public landings on their waterfront, according to Gloucester Development Director Gregory Cademartori (Gloucester, 2014).

Finding #8: Land uses that support waterfront activities in DPAs have been used to expand opportunities for public use.

DPA requirements prevent numerous developments along the waterfront and require long difficult review processes to change them. Under the DPA designation, only industrial water dependent uses are permitted on the waterfront. However, 25% of each property's land within DPAs can contain "supporting uses" that benefit the workers of the industries and also promote the DPA, such as parks, restaurants, retail, and parking lots, according to Ms. Bongiovanni. In New Bedford, restaurants currently exist along the DPA waterfront along with many public sitting areas and small decorative gardens, thanks to the supporting use clause, according to Mr.

Washburn. Accessory use can also be transferred because if one property does not use 25% of its land, calculated by total area of parcels, for supporting uses, then other property owners can create accessory uses on their land. The amount that they can create is equal up to 25% of the industry's total land, with permission of the CZM and the city, according to Ms. Bongiovanni and Mr. Washburn. Ms. Bongiovanni also feels that this would allow landowners that “feel constrained with the DPA” to develop their lands into more diverse, beautiful, and public areas.

Finding #9: Industries have assisted cities in their waterfront development process.

Industries are often seen as barriers to waterfront access and use. However, most industries do not directly oppose waterfront development as long as it does not interfere with their business, according to Ms. Bongiovanni. There have been cases where industries have aided waterfront development. For example, in Astoria, OR, local government cultivated a good relationship with industries and businesses along their waterfront. Consequently, industries assisted them in the construction of waterfront projects, by allowing a walking trail to pass around the edges of their land by the waterfront, according to Community Development Director of Astoria, Kevin Cronin. Also in Gloucester, MA local government negotiated with four property owners to create a path to link public uses along the waterfront according to Mr. Cademartori. He stated that this process consisted mainly of acknowledging the licensing of the path and “the use to be able to go through there” including liability and safety issues.

Industrial and public uses on waterfronts are “not mutually exclusive”, according to Mr. Washburn of New Bedford. He stated that the fishing industries in New Bedford facilitate tourism to the city’s waterfront through allowing people to observe fisherman next to a walkway and also read some of the historical plaques there to understand the history of the number one fishing port in Massachusetts. Mr. Washburn also stated that the city has plans to create a mutually beneficial public fish market that would provide fresh fish to residents as well as profits for the fishing industry.

Finding #10: Continuous walkways from within cities to waterfronts have been shown to promote public use and facilitate access.

Direct connection to the waterfront from city centers are used by many members of the public because they are widely accessible. Through our case studies, we found that Astoria, OR constructed a Riverwalk and it was considered “an overwhelming success” because it runs along the city’s downtown district and intersects many streets there which enables residents to easily reach the waterfront, according to Mr. Cronin.

Waterfront walkways are also inviting to all members of a city’s population because there are no price limitations. We found that Boston’s harbor walk, spanning almost 40 miles along the shore, connects the community with the harbor by maintaining continuous public access along nearly all of the waterfront (Boston Redevelopment Authority). There are many access points to the river walk along Boston Harbor and all new developments on the coast of Boston must allow access to the walkway (Boston Redevelopment Authority). Most of the walkway does not have recreational facilities or open spaces but the lighting and the walkway “makes it feel nice”, according to a member of our focus group. Additionally, during the focus group discussion, one student mentioned the Chicago waterfront that connects people to the waterfront through “a bike trail and walking path that goes for 50 miles with zones of green space.” This public use was

deemed “a huge success because of the multimodality of it and is not speaking to one population only”. People are drawn to the walkway because it connects “zones of green space, a bike path and a beach” and has “volleyball courts, piers and access to fishing so there is something for everybody,” according to the student from our focus group. It allowed the people that live in many different income areas to access the waterfront and come together.

Finding #11: In waterfront areas visual enhancements, no matter how small, have been shown to improve public opinion and use of waterfronts.

Waterfront development may take a long time to complete, however, implementing small upgrades in that area can lead to more public use, while familiarizing residents with the waterfront. Through our interview with Ms. Schwartz we found this concept put to practice in the City of Baltimore, MD. To start the waterfront development process they brought in mulch to make the waterfront more aesthetically appealing to the residents, which led to an increase in waterfront use.

Personal examples where small attractions were used on a waterfront were in New Bedford and Boston. Decorative sculptures were all along the coastal walkways in New Bedford and Boston that enhanced the image of the waterfronts. In our opinion these sculptures made the waterfronts much more appealing and inviting. While these minimal changes do not seem so significant, they can support and increase public use along the waterfront, according to Ms. Schwartz.

These findings guided us in developing a list of recommendations for local government of Chelsea, GreenRoots, Inc. and the city as a whole.

5.0 Recommendations

Through our analysis of the literature review, case study research, interviews with city representatives, surveys to the public of Chelsea and focus groups, we developed several recommendations to guide local government in the development of the Chelsea waterfront.

Recommendation #1: We recommend that GreenRoots, Inc. and local government collaborate to inform low-income and minority residents about the waterfront parks and the redevelopment process.

As shown in **Finding #2**, many residents lack awareness of the waterfront and its benefits, which hinders participation in the redevelopment process. We recommend providing information to residents in a variety of ways to reach as many of the diverse residents as possible. The public cannot take part in the planning process if they lack knowledge about the waterfront and its benefits (Marzuki, 2015; United Nations, 2003). Therefore, informing the public about the waterfront and its benefits is the first step in the goal of increasing public participation in the redevelopment process (Arnstein, 1969). This can be done through bilingual meetings and online communication to the general public about the benefits of parks and walkways along the water and the potential beauty of the waterfront. One way to reach residents is through social media and online sources “because a lot of people are on Facebook, twitter, and Instagram” according to our focus group. The City of Chelsea and local organizations can use these digital media outlets to post pictures and articles about the waterfront and its benefits. Similarly, they can be used to inform the public about events that are going to take place on the waterfront. The use of social

media can also lead people to the websites of GreenRoots, Inc. and the City of Chelsea, where residents can get more detailed information, causing them to become more active in their community.

We also recommend creating newspaper articles for both the Chelsea Record and El Planeta, which can reach residents that prefer more physical forms of communication and residents that do not have easy access to social media.

Recommendation #2: We recommend that the City of Chelsea and GreenRoots, Inc. collaborate with the uninformed and marginalized public and include their voice in the upcoming Master Harbor Plan.

As described in **Finding #1, Finding #6, and Finding #7**, reaching out to all residents of Chelsea, especially low-income and Latinos, to make them feel that their opinions are heard is important for successful waterfront development. According to studies, trust has been built when government acts “with more active engagement with the public and in particular more rigorous respect for the law and the public interests” (Diamond, 2007). We recommend that Chelsea’s Planning and Development Department and GreenRoots, Inc. conduct regular surveys, both in person and online to gather as many public opinions as possible, based on our conversation with Ms. Schwartz of Baltimore. The surveys should be done a couple times a year, especially before and after enacting new development decisions on the waterfront, such as the creation of parks and choice of locations, and should gather public concerns about the city and government policy. This will enable leaders to gauge the effectiveness of recently enacted developments. The surveys should ask if residents take part in public meetings and their reasons for attending or not attending. The results of these surveys should also be shared with the entire community of Chelsea to keep them informed.

We recommend that local government and GreenRoots, Inc. attempt to increase attendance of low-income and minority groups to public hearings and events. This can be done by catering to residents’ preferred time of day, providing childcare or food if possible during the meetings, according to Mr. DePriest. Meetings must also allot adequate time for numerous speakers to prevent individuals from dominating the discussion. Residents also should be given a more active role in some of the meetings, such as recording the discussion and determining what was learned during the meeting, in addition to the City Clerk, based on the knowledge we gained from the Gloucester Harbor Plan.

We then recommend that local government and GreenRoots, Inc. include the results of surveys and meetings when developing Chelsea’s Master Harbor Plan (MHP). MHPs have been shown to “concentrate uses” along the waterfront in a methodical manner, and provide guidance towards developing along the Chelsea River (Bowles, 2010). A MHP would also guide development of accessory uses, discussed in **Finding #8**, which could depict public preferences about the waterfront.

Recommendation #3: We recommend that the City of Chelsea collaborate with the Massachusetts Department of Transportation (DOT) to invest in pedestrian access to the waterfront by creating crosswalks, traffic signage, street lights, and improved sidewalks.

As described in **Finding #4** and **Finding #10**, residents of Chelsea lack important physical access to get to the Chelsea River. Therefore, we recommend that local government create

crosswalks and traffic signs to allow people to safely cross Marginal Street. People do not feel safe crossing Marginal Street and would not feel safe going to any parks along the waterfront without means of crossing, according to Ms. Bongiovanni and Mr. DePriest. Creating crosswalks, crossing lights, and stop signs would enable people to reach the waterfront easily and would also increase the perception of safety in reaching that area. However, doing this may be difficult to change because Marginal Street is managed by the Massachusetts DOT rather than the City of Chelsea, according to Ms. Power. As a result, the local government of Chelsea should work with the Massachusetts DOT, to find and enact solutions for pedestrian access along the waterfront.

We also recommend that the City of Chelsea improves sidewalks and creates street lights along Marginal Street, to improve access to the waterfront. Residents currently find walking along the waterfront both unpleasant and sometimes dangerous, especially at night, because the sidewalks are narrow and not well maintained. Additionally, there are only a few street lights along the waterfront, according to both teenagers at the Boys & Girls Club, our focus group with Bunker Hill College and through our own observations

Chelsea's waterfront could transform from a dark dangerous location into a pleasant place with "lights and a little walkway" that is similar to the Boston's Harbor walk, according to one member of our focus group. Several survey respondents also mentioned that they would like to see a walkway that is "similar to Boston, but on a smaller scale." Even though Chelsea is not a large or wealthy city like Boston, a river walk is still a viable option because Astoria, OR, another small industrial waterfront city, created a river walk around industries and along an old railroad line, according to Mr. Cronin (Moniz, 2008). A waterfront walkway would help connect the open spaces of Chelsea and downtown Chelsea by bringing people to the waterfront, according to John DePriest.

Recommendation #4: We recommend that the City of Chelsea implement improvements, such as cleaning the sidewalks, tending the plants and creating small events, along the waterfront to make the area more inviting.

As discussed in **Finding #11**, small improvements are usually all it takes for the general perception of waterfronts to improve. These improvements can be relatively inexpensive to implement and their effects can be seen in a short time period. According to researchers from the University of Illinois, attractive and green parks lead to higher public use, increasing community ties and lead to a lower crime rate. The opposite occurs when parks are barren and unattractive as parks become venues for criminal activities such as drug use and robbery, as described in **Finding #3** (Safer Neighborhoods, 2007). Therefore, it is imperative for Chelsea to keep the parks attractive and well maintained to avoid raising the already high crime rate in the city. We have witnessed the enormous amount of trash along Marginal Street, and in order to enhance the image of this area it should be cleaned up. This extends into the cleaning of sidewalks and parks so they are appealing to residents.

We recommend that Chelsea officials create a budget for landscaping to hire gardeners to tend foliage, grass, and parks around the waterfront area. It is suggested that gardeners work at regular intervals to ensure that the parks and gardens are constantly attractive to Chelsea residents.

Similarly, small events should be held at PORT Park and other sites along the waterfront with the collaboration of GreenRoots, Inc., other NGOs, and the City of Chelsea, in order to familiarize local residents with the waterfront and create a culture of waterfront use within the community. We recommend free or low-cost events to attract people to the waterfront. For

example, the Taste of Chelsea event at PORT Park opened the eyes of many people, about the potential of the waterfront, according to Ms. Bongiovanni. More free or low-cost events, especially those involving food, music, and art, along the river would bring people together on the waterfront and can attract low-income groups because there is little burden to attend (Schwartz, pc, 2016). When people actually visit close to the water, not obstructed by large buildings or the enormous salt piles, they can begin to envision something better and brighter for the waterfront.

Recommendation #5: We recommend that GreenRoots, Inc. and the City of Chelsea include the youth of Chelsea in decision-making processes for an effective participation and development.

Teenagers from the ages of fourteen to eighteen are the most likely demographic to use parks (Kaczynski et al, 2014). Hence, more efforts must be taken to include them in the development process. Based on the results of our surveys to students at the Boys and Girls Club in Chelsea and from **Finding #5**, we recommend the inclusion of the youth of Chelsea in decision-making procedures in order to enhance a better and effective development. Youth participation not only promotes appropriate development but could help these residents to:

- Develop particular skills
- Build competencies
- Acquire confidence
- Form aspirations

Giving more opportunities for teenagers to participate in their community will give those young residents experience that will enable them to improve their community (United Nations, 2003). As 25% of Chelsea residents are under the age of 18, according to the 2010 Census, including them is crucial to the future of the City for that reason. We recommend that GreenRoots, Inc. and the Chelsea Collaborative presents ideas of youth participation to the City of Chelsea because they have strong youth leadership programs. One successful example of this is the after school program, Environmental Chelsea Organizers (ECO), which has worked with other Universities in Massachusetts such as MIT, to understand common issues within the community of Chelsea. A good way of involving youth is to create paid internships and after school programs targeting high school and college students in Chelsea to work with local organizations and government officials. This has been accomplished by the Chelsea Collaborative through their Summer Youth Employment Initiative (SYEI), which provides youth with paid jobs while teaching them life skills and by involving them in the community (Coelho, Gao, & Grammenos, 2015). These programs would not only provide the young adults with jobs, but could “create a way of uniting the community, businesses, and the youth” (Coelho, Gao, & Grammenos, 2015)

Recommendation #6: We recommend that GreenRoots, Inc. work with the City of Chelsea to find ways in which public facilities can address prevalent problems in Chelsea.

Proper implementation of waterfront development is essential for the city of Chelsea because new developments could enable criminal activities. As described in **Finding #3**, crime and violence in the City of Chelsea is more of a priority to its residents than waterfront development. Areas that look dilapidated and deserted are more likely to be used as crime sites in a city, according to the Broken Window Theory (Kelling & Wilson). However, having an appropriate development plan for the implementation of parks in Chelsea that addresses crime and

safety, can mitigate and decrease crime rates in the city. Attractive, well designed and active green spaces can facilitate and tie community bonds, discouraging criminal activity by increasing awareness and presence of residents in public facilities (Luymes & Tamminga, 1995, p. 394).

A study shows that design of parks and lighting, with the right citizen involvement and programming can contribute to safety of public areas, such as parks and other green spaces (Luymes & Tamminga, 1995, p. 394). Criminal activity and violence can be amended by the appropriate implementation of parks in the City of Chelsea. The local government should work with a professional landscape designer that can develop appropriate designs to alleviate issues of crime and safety in urban parks. Similarly, develop safety and planning strategies to avoid crime in public areas by improving police, lighting and access to those sites (Bereznai, Kaw-uh, Parent, & Souza, 2016).

Recommendation #7: We recommend that the City of Chelsea work with local industries to support development in the waterfront.

As shown in **Finding #9** industries along waterfronts do not always inhibit public waterfront development and can actually assist in the redevelopment process. We recommend that local government and GreenRoots, Inc. continue to conduct frequent private stakeholder meetings with representatives of waterfront industries to discuss possible ways in which industries can be involved in the development process and emphasize more public uses rather than private development, based on our discussions with Mr. Cronin and Mr. Washburn. The City of Chelsea should develop a plan that would be mutually beneficial to the waterfront development program and the industries as was done in Astoria, OR and New Bedford. One public use that could be created is a museum centered on the salt industry, which is similar to the fishing and whaling historical sites in New Bedford. These sites inform the public about the waterfront industries and can increase business. The governments of these areas have also implemented new regulations for future development to create walkways and public spaces that can coexist with industry (Safer Neighborhoods, 2007). Local government should discuss the licensing, liability, and safety concerns of walkways near industries, based on our discussion with Mr. Cademartori. However, it is important that industries and local government discuss these possibilities, to understand the industries point of view because good communication between parties creates a healthy relationship.

Industry representatives should participate in public hearings made by the City, in order to understand the perspectives and opinions of the public of Chelsea. In those hearings industries could understand the main priorities of residents towards the development of the waterfront.

Recommendation #8: We recommend that GreenRoots, Inc. and other NGOs organizations work to implement a project to follow the progress of the waterfront development plan in the City of Chelsea.

We recommend that GreenRoots, Inc. works with Worcester Polytechnic Institute or students from other institutions in upcoming years, through the progression of the Chelsea waterfront. This would allow GreenRoots, Inc. and other local NGOs, such as the Chelsea Collaborative and Community Garden, to track public opinion as the waterfront Master Harbor Plan advances. This would also allow these organizations to understand public involvement in waterfront development procedures and if involvement should be further expanded. Residents of

Chelsea will begin to have more knowledge and opinions on what should be changed in the City. This responsibility should not be shouldered solely by NGOs, but the City of Chelsea should take initiative in determining the involvement of residents.

6.0 Conclusion

Chelsea's Designated Port Area has been revised; as a result the land in the waterfront that does not follow the regulations of the DPA have been released to the City of Chelsea and will be repurposed for development. Opinions vary when it comes to development of this type, however most of the public simply wants an open area that is inclusive and safe for all residents. As a result, we were given the task to understand the preferences of the many stakeholders in Chelsea, especially minority residents, and investigate other cities in North America that have gone through waterfront development processes.

Findings that were expected include, the benefit of incorporating all residents in decision making process, the desire for better parks and active open spaces and the improvement of pedestrian access to and along the waterfront. However, some of our findings were unanticipated and surprising for the team. Many of the residents in Chelsea did not know about the efforts to redevelop the waterfront and some of them did not even know the city has a waterfront. In addition, residents felt that even if they knew about the redevelopment plan that is taking place in the waterfront, their voices would not be heard by the local government, and therefore their preferences would not be considered. These findings, though complex, allowed us to develop recommendations, that best apply to and benefit the city and residents of Chelsea. We provided deliverables for GreenRoots, Inc. for them to present to the local government and to persuade them in the development of the Chelsea waterfront. These deliverables include:

- A report of public opinion regarding waterfront usage and development.
- A comparative matrix of waterfront locations that we investigated.
- An article in the local newspaper "El Planeta" that will introduce GreenRoots, Inc. and its vision through the development process.

The findings, recommendations and deliverables that the team formulated will benefit all residents, especially the low-income and minority groups in the city, while giving the local government of Chelsea an overview of what the people want from their community. Additionally, the report will assist the local government of Chelsea in the creation of a Master Harbor Plan that appeals to all stakeholders in Chelsea. Local organizations together with the government of Chelsea can collaborate to inspire and inform the public about the potential the waterfront can have.

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Appendices

Appendix A: Chelsea Industry Descriptions

- Global Companies & Gulf Oil
 - These companies store “billions of gallons of oil and petroleum products from all over the world” in Chelsea (Kelly, 2001).
- Eastern Minerals
 - This company provides the majority of eastern Massachusetts with road salt in the winter (Myerson, 2001).
- Enterprise Rental Car
 - This company brings in numerous tax dollars from each car stored in its lot, although it abuses a loophole to operate in the DPA (Chelsea Collab, pc. 2016).

Appendix B Interview of Waterfront Cities that Underwent or are in the process of Redevelopment

- Hello, we are students from Worcester Polytechnic Institute conducting a project regarding public access along waterfronts. We are working with GreenRoots, Inc. in Chelsea, MA, previously the Chelsea Collaborative Green Space Committee. We are interested in the changes to public access that have come about along urban waterfronts especially those with heavy industrial presences.

May we record this interview for further review?

1. What are the public uses in the waterfront in _____? What areas exist for people to use? Do the uses vary by season?
2. Who do you think typically goes to those areas (typical income?)? Which areas do people visit the most? What do the people do there? Do the amount of people vary by season?
3. Has public access to the waterfront of _____ changed over the years that you've been here? In what ways? Parks? Shops? Walking Trails? Restaurants?
4. How did these changes occur? What and who motivated those (People, gov, etc.)? Were you or your organization involved with them? In what ways?
5. What was the planning process that the city used? What were the Pros and Cons of that process? What developments were most desired for the area? What have been the barriers for increasing public access in the plan?
6. How are people being involved to this day? Were they only involved in the visioning process Are they regularly informed on progress?
7. Did the public have any say in the development of the waterfront? How does the Harbor Development commission involve the public in this process?
8. Did government regulations affect the development of the waterfront? If yes, elaborate. Has it been restrictive?
9. Which choices of public space were the most desirable for the public? Which were the least?
10. Do you know if residents reacted positively to the changes in the waterfront? Were they accepting of all of the changes? Did they want anything different from what was changed?
11. Are there currently any plans for changing the waterfront further? In what ways? How were these plans decided? Were the plans made by city officials or outside consultants?
12. Do you have any recommendations to improve access to the Chelsea waterfront? What mistakes should Chelsea avoid? What areas should be looked into more?

Appendix C Interviews with Chelsea Local Government, NGOs and Businesses

- Hello, we are students from Worcester Polytechnic Institute conducting a project regarding public access along waterfronts. We are working with GreenRoots, Inc. in Chelsea, MA, previously the Chelsea Collaborative Green Space Committee. We are interested in the changes to public access that have come about along urban waterfronts especially those with heavy industrial presences.

May we record this interview for further review?

1. Who have been major supporters to expanding public uses on the waterfront?
2. Do you know what residents want from the waterfront?
3. From those public hearings are there any findings you will like to share with us?
4. How do/did federal regulations affect waterfront development in your city ()? Did federal regulations have to be modified before progress could be made? What modifications were made?
5. Does _____ have any interaction with Enterprise, Gulf Oil, Global Oil, the fish cannery, the fur and hides factory, etc.? How has Eastern Minerals interacted with _____?
6. Was the PORT Park a large victory?
7. How often is the waterfront used by the public?
8. Have you been involved with waterfront development? In what ways? Does your organization have plans for the development of the waterfront?
9. How does _____ (your company/city/town) make use of the Chelsea waterfront?
10. Should the waterfront be improved/changed (if yes answer next two questions)? How do you feel the waterfront can be improved? How can you and your organization help?
11. What is your vision for the future waterfront?

What kinds of public use do you think would benefit Chelsea most?

Appendix D Surveys Questions, English



1. Are you a resident of Chelsea?

- A. Yes B. No

2. How long have you lived/worked in Chelsea?

- A. Less than a year C. 4-6 years
B. 1-3 years D. More than 6 years

3-4. What would you like to change in Chelsea? (Check all that apply) In what ways?

- | | | |
|--|--|--------------------------------------|
| A. <input type="checkbox"/> Industry | F. <input type="checkbox"/> Schools | K. <input type="checkbox"/> Drugs |
| B. <input type="checkbox"/> Parks/Sports | G. <input type="checkbox"/> Restaurants | L. <input type="checkbox"/> Crime |
| C. <input type="checkbox"/> Stores | H. <input type="checkbox"/> Transportation | M. <input type="checkbox"/> Violence |
| D. <input type="checkbox"/> Housing | I. <input type="checkbox"/> Jobs | N. Other _____ |
| E. <input type="checkbox"/> Community | J. <input type="checkbox"/> Police | |

5. Do you know about the local efforts to redevelop the Chelsea Waterfront?

- A. Yes B. No C. Don't know about the

If C please go to question 12.

6. Do you find the Chelsea Waterfront inviting? (Do you currently like the waterfront?)

- A. Yes B. No C. No Opinion

7. How often have you visited the Chelsea Waterfront/River in the last year?

- A. Very Often (Three or more times a month)
B. Often (At least once a month)
C. Sometimes (At least once in 4 months)
D. Rarely (At least once in the past year)
E. Never

8. Why have you visited the Chelsea Waterfront/River? (Check all that apply.)

- A. Recreation/Relaxation B. Business/Industry C. Shopping/Food
D. Home/Family E. Transportation F. Other

9. Would you like the Chelsea Waterfront to change? **If YES, please answer the next question. If NO, Please go to question 12.**

- A. Yes B. No C. No Opinion

10. How would you like the waterfront to change? (Check all that apply.)

- | | |
|---|---|
| A. <input type="checkbox"/> More Industrial Facilities | G. <input type="checkbox"/> Fewer Industrial Facilities |
| B. <input type="checkbox"/> More Parks/Sports | H. <input type="checkbox"/> Cleaner Streets and City |
| C. <input type="checkbox"/> More Stores or Restaurants | I. <input type="checkbox"/> Better Housing Facilities |
| D. <input type="checkbox"/> More Housing Facilities | J. <input type="checkbox"/> Fewer Housing Facilities |
| E. <input type="checkbox"/> Better Transportation to it | K. <input type="checkbox"/> Other |
| F. <input type="checkbox"/> More Job Opportunities | |

11. Why?

12. Do you feel the opinions of residents would be heard by the local government?

- A. Yes B. No

Optional demographic questions:

13. What gender are you?

- A. Male B. Female

14. Are you Hispanic or Latino?

- A. Yes B. No

15. What is your Race(s)?

- | | |
|---|---|
| A. <input type="checkbox"/> American Indian or Alaska Native | D. <input type="checkbox"/> Black or African American |
| B. <input type="checkbox"/> White or Caucasian | E. <input type="checkbox"/> Asian |
| C. <input type="checkbox"/> Native Hawaiian or Pacific Islander | F. <input type="checkbox"/> Other |

Appendix E Surveys Questions, Spanish



1. ¿Est usted un residente de Chelsea?
A. Si B. No

2. ¿Por cuánto tiempo ha trabajado/vivido en Chelsea?
A. Menos de un año C. 4-6 años
B. 1-3 años D. Más de 6 años

- 3-4. ¿Qué le gustaría cambiar en Chelsea?
A. Industrias F. Escuelas K. Drogas
B. Parques/Deportes G. Restaurantes L. Crimen
C. Almacenes H. Transporte M. Violencia
D. Casas I. Trabajo K. Otro _____
E. Comunidad J. Policia

5. ¿Está usted familiarizado con el plan de desarrollo del puerto de Chelsea?
A. Si B. No C. No conozco el puerto de Chelsea

Si su respuesta es “Si”, ir a la siguiente pregunta. Si su respuesta es “No”, ir a las preguntas opcionales.

6. ¿Usted encuentra al puerto de Chelsea atractivo? (Le gusta actualmente el puerto?)
A. Si B. No C. Sin Opinión

7. ¿Que tan a menudo ha visitado el puerto de Chelsea en este último año?
A. Muy a menudo (Generalmente una o dos veces a la semana)
B. A menudo (Tres o más veces al mes)
C. A veces (Al menos una vez al mes)
D. Rara vez (Al menos una vez al año)
E. Primera vez este año

8. ¿Por qué ha visitando el puerto de Chelsea? (Señalar todos los que apliquen)
A. Recreacionalmente/Diversión/Relajación D. Hogar/Familia
B. Trabajo/Industrias E. Transporte
C. Compras/Comida F. Otro

9. ¿Le gustaría que el puerto de Chelsea cambie?
A. Si B. No C. Sin Opinión
10. ¿Cómo le gustaría que el puerto de Chelsea cambie? (Señalar todas las que apliquen)

- A. Más instalaciones industriales (fábricas e industrias)
- B. Más Parques y Áreas Recreacionales
- C. Más Restaurantes y Almacenes/Tiendas
- D. Más Residencias
- E. Mejores Formas de Transporte
- F. Más Oportunidades de Trabajo
- G. Menos instalaciones industriales (fábricas e industrias)
- H. Calles más limpias
- I. Mejores Residencias
- J. Menos Residencias
- K. Otro

11. ¿Por qué?

12. ¿Usted piensa que las opiniones de los residentes de Chelsea son consideradas por el gobierno local?

- A. Si B. No

Las siguientes preguntas son opcionales

13. ¿Cuál es su género?

- A. Masculino B. Femenino

14. ¿Usted es Hispano o Latino?

- A. Si B. No

15. ¿Con qué etnia se identifica usted?

- | | |
|---|---|
| A. <input type="checkbox"/> Nativo de Alaska o Nativo Americano | D. <input type="checkbox"/> Afroamericano |
| B. <input type="checkbox"/> Blanco | E. <input type="checkbox"/> Asiático |
| C. <input type="checkbox"/> Nativo de Hawaii/Islas del Pacífico | F. <input type="checkbox"/> Otro |

Appendix F Annotated Survey Procedures (Page 2 of Survey not annotated)



1. Are you a resident of Chelsea?
 A. Yes B. No

 2. How long have you lived/worked in Chelsea?
 A. Less than a year C. 4-6 years
 B. 1-3 years D. More than 6 years
- Ask this question open ended first. Prompt with choices if necessary. Record when answers are prompted.
- 3-4. What would you like to change in Chelsea? (Check all that apply) In what ways?
- | | | |
|--|--|---|
| A. <input type="checkbox"/> Industry | F. <input type="checkbox"/> Schools | K. <input type="checkbox"/> Drugs |
| B. <input type="checkbox"/> Parks/Sports | G. <input type="checkbox"/> Restaurants | L. <input type="checkbox"/> Crime |
| C. <input type="checkbox"/> Stores | H. <input type="checkbox"/> Transportation | M. <input type="checkbox"/> Violence |
| D. <input type="checkbox"/> Housing | I. <input type="checkbox"/> Jobs | N. <input type="checkbox"/> Other _____ |
| E. <input type="checkbox"/> Community | J. <input type="checkbox"/> Police | |
- Describe the waterfront if they are not sure. Salt piles, Marginal street, etc...
5. Do you know about the local efforts to redevelop the Chelsea Waterfront?
 A. Yes B. No C. Don't know about the waterfront

If C please go to question 12.

6. Do you find the Chelsea Waterfront inviting? (Do you currently like the waterfront?)
 A. Yes B. No C. No Opinion

 7. How often have you visited the Chelsea Waterfront/River in the last year?
 A. Very Often (Three or more times a month)
 B. Often (At least once a month)
 C. Sometimes (At least once in 4 months)
 D. Rarely (At least once in the past year)
 E. Never
- Ask if they have heard of or visited Port Park.
8. Why have you visited the Chelsea Waterfront/River? (Check all that apply.)
 A. Recreation/Relaxation B. Business/Industry C. Shopping/Food
 D. Home/Family E. Transportation F. Other _____

 9. Would you like the Chelsea Waterfront to change? If YES, please answer the next question. If NO, please go to question 12.
 A. Yes B. No C. No Opinion

Appendix G Contact List

Cities in Massachusetts

Chelsea

Chi Vo – Citizens School

Dan Adams- Eastern Minerals

John DePriest -Planning & Development Director

Leo Martinez – Food Corps

Lisa Gillis- Boys and Girls Club

Margaret Carsley – Community Garden Coordinator

Mark Beaumont – Bunker Hill Community College Professor

Roseann Bongiovanni – GreenRoots, Inc.

Gloucester

Gregg Cademartori - Planning Director

Steve Winslow - Senior Project Manager

Lynn

James Marsh - Community Development director

James Cowdell - **Executive Director**

William Bochnak, Project Coordinator

New Bedford

Ed Washburn- Port Director

Patrick Sullivan - Community Development

Other cities in North America

Astoria, Oregon

Kevin Cronin -Community Development Director

Baltimore, Maryland

Laurie Schwartz - Waterfront Partnership

Vancouver, Washington

Jim Edwards - Gramor Development

Appendix H Matrix of Case Studies

Process	Page 1/6				
Location	Relevance	Planning Methods	Public Involvement	Challenges	Recommendations
Lynn, MA	<ul style="list-style-type: none"> ● DPA City ● Similar demographics 	Master Harbor Plan	<ul style="list-style-type: none"> ● 26 Public Hearings ● Around 40 people at each 	<ul style="list-style-type: none"> ● Removing Power Lines ● Zoning Plans 	<ul style="list-style-type: none"> ● Persistence ● Zoning is key ● Facilitate Developers ● Involve landowners and Grassroots
New Bedford, MA	<ul style="list-style-type: none"> ● DPA ● Heavy Fishing 	<ul style="list-style-type: none"> ● Municipal Harbor Plan ● Framework Plan ● Substitute Provisions 	<ul style="list-style-type: none"> ● 4 Public Hearings ● 4 Private Stakeholder Meetings ● Met to discuss objectives of Plan and different scenarios for land use ● Explore Urban renewal districts 	<ul style="list-style-type: none"> ● Maintaining fishing Industry while serving the public 	<ul style="list-style-type: none"> ● Communication ● Do not let Private Stakeholders dominate ● Plan thoroughly ● Use Accessory Use clause of DPA

Process	Page 2/6				
Location	Relevance	Planning Methods	Public Involvement	Challenges	Recommendations
Gloucester, MA	<ul style="list-style-type: none"> ● DPA ● Heavy Fishing ● Public Projects 	<ul style="list-style-type: none"> ● Master Harbor Plan ● 5 year cycles 	<ul style="list-style-type: none"> ● Public Hearings month long period ● Each week different community ● Citizens panel discuss outcomes of meeting 	<ul style="list-style-type: none"> ● Reaching all groups ● Scheduling ● Residents understanding significance 	<ul style="list-style-type: none"> ● Partnerships between residents and grassroots ● Provide Food ● Gentle introduction
Astoria, OR	<ul style="list-style-type: none"> ● Successful Redevelopment ● OCZM and ESWD similar to CZM and DPA 	<ul style="list-style-type: none"> ● OCZM ● Especially suited for Waterfront Development ● Project Based Advisory Committee ● Planning project 25% of current value 	<ul style="list-style-type: none"> ● Open houses and public meetings ● No regular meetings ● Project web page ● Mostly just with planning commission and city council ● Top of the councilor's mind who represents downtown 		<ul style="list-style-type: none"> ● Pursue Federal and State Grants ● Value proposition to landowners ● Make Redevelopment Exciting

Process	Page 3/6				
Location	Relevance	Planning Methods	Public Involvement	Challenges	Recommendations
Vancouver, WA	<ul style="list-style-type: none"> • Successful public use integration 		<ul style="list-style-type: none"> • Public hearings over a 3 year period • Developers submit proposal • Lead to development agreement • Inform people through news media • Worked with nonprofits in the area and housing developers 	<ul style="list-style-type: none"> • Finding Investors • Transition from industry • At least a ten year process 	<ul style="list-style-type: none"> • Accommodate Developers
Hamilton, Ontario	<ul style="list-style-type: none"> • Public Waterfront Development transform city 				

Process	Page 4/6				
Location	Relevance	Planning Methods	Public Involvement	Challenges	Recommendations
Waukegan, IL	<ul style="list-style-type: none"> Waterfront City outside Chicago 	<ul style="list-style-type: none"> Lakefront Downtown Master Plan Waterfront Active Implementation plan 		<ul style="list-style-type: none"> Loss of Industry cause economic decline Retail Plummet Not implementing Harbor plan since 2003 Logistics with money 	<ul style="list-style-type: none"> Tax-Increment Financing Districts Tax incentives State and federal Grants
Port Huron, MI	<ul style="list-style-type: none"> Public Involvement 	<ul style="list-style-type: none"> Overlapping Zoning Ordinances Community land fund to purchase public lands 	<ul style="list-style-type: none"> Focus Groups SWOT analysis 		

Process	Page 5/6				
Location	Relevance	Planning Methods	Public Involvement	Challenges	Recommendations
Baltimore, MD	<ul style="list-style-type: none"> • Many low-income • Many minorities • Gentrification 	<ul style="list-style-type: none"> • Mizal Merlin Industrial zone 	<ul style="list-style-type: none"> • Initiative that focuses on waterfront quality • Initiative for community outreach • Dozens of stakeholder meetings, residents business, etc • Survey to the community groups, what they would like to see on water • Survey low-income and minorities • Online Survey 	<ul style="list-style-type: none"> • Public infrastructure deteriorating • Didn't focus on lower income groups • Lower income groups usually have more to worry about • Inner Harbor didn't do much 	<ul style="list-style-type: none"> • Essential Black teenagers diffuse tension on the harbor • Big one is keeping people involved • 1000 responses from online survey
Burlington, VT			<ul style="list-style-type: none"> • City Website • Email list • Citywide votes on funding 		
Salem, MA	<ul style="list-style-type: none"> • DPA 	<ul style="list-style-type: none"> • Harbor Plan • Over 24 officials interviewed 	<ul style="list-style-type: none"> • Surveys of Public • Public Meetings • Citizen Port Committee 	<ul style="list-style-type: none"> • Upkeep and Maintenance 	<ul style="list-style-type: none"> • Private Development on South River

Process	Page 6/6				
Location	Relevance	Planning Methods	Public Involvement	Challenges	Recommendations
Boston, MA	<ul style="list-style-type: none"> • DPA 		<ul style="list-style-type: none"> • Community Meetings • Asked local students for designs of park 	<ul style="list-style-type: none"> • Lack understanding of DPA • Don't understand Accessory Use Clause 	
Chelsea, MA	<ul style="list-style-type: none"> • DPA 	<ul style="list-style-type: none"> • Developing a Master Harbor Plan 	<ul style="list-style-type: none"> • Visioning Process • Public Hearings, 50-60 average, 100 max • Advisory Groups • Meeting Fliers • Email 		

Recommended and Implemented Public Uses	Page 1/6				
Location	Parks/Walkways	Restaurants/Retail	Boating/Fishing	Passive and Historical	Challenge
Lynn, MA	<ul style="list-style-type: none"> ● Lynn Shore Drive, 2 Miles ● Red Walk Park 15 Hectares 	<ul style="list-style-type: none"> ● Walmart along waterfront ● Plan to remove for more small stores 	<ul style="list-style-type: none"> ● Blue Pacific Boating ● Plan for Fishing uses 	<ul style="list-style-type: none"> ● Long Beach, First Public Beach in US 	<ul style="list-style-type: none"> ● 8 Lane highway, Lynn Way block off. ● People killed trying to cross
New Bedford, MA	<ul style="list-style-type: none"> ● Riverwalk along old Mill Sites ● Parks on Southern waterfront 	<ul style="list-style-type: none"> ● Black Whale Restaurant ● Plan to create more to support Ferry ● Plan Fish Market 	<ul style="list-style-type: none"> ● Convert Illegal public marina ● Pope's Island Marina 	<ul style="list-style-type: none"> ● Park Benches ● Whaling Museum ● Historical Boards ● Observe Fishermen 	<ul style="list-style-type: none"> ● JFK Boulevard was unsafe and difficult to cross

Recommended Public Uses and Outcomes	Page 2/6					
Location	Parks/Walkway	Restaurants/Retail	Boating/Fishing	Passive/Historic	Challenge	Recommendations
Gloucester, MA	<ul style="list-style-type: none"> ● Secured land for path from property owners ● Public Beaches ● St. Peter's Park 	<ul style="list-style-type: none"> ● Northwest Harbor ● Large Pedestrian Traffic ● Many Restaurants and Retail ● In place before DPA 	<ul style="list-style-type: none"> ● Public Landings ● Kayak Launches <ul style="list-style-type: none"> ● Water Shuttles 		<ul style="list-style-type: none"> ● Previously only 5 properties of 70 were public ● Some people do not want public uses on the waterfront 	<ul style="list-style-type: none"> ● Be consistent in redevelopment process ● Make public space Continuous and connected
Astoria, OR	<ul style="list-style-type: none"> ● Riverwalk started 20 years ago ● 8 miles long ● Entire city limits 		<ul style="list-style-type: none"> ● \$8 million public pier extend over water 		<ul style="list-style-type: none"> ● Conflict of property owners ● Cuts market value of their land 	<ul style="list-style-type: none"> ● Engage Industrial artists and designers to plan parks ● Re-purpose old buildings ● Riverwalk was an overwhelming success ● New Construction projects test residents

Recommended Public Uses and Outcomes	Page 3/6					
Location	Parks/Walkway	Restaurants/Retail	Boating/Fishing	Passive/Historic	Challenge	Recommendations
Vancouver, WA	<ul style="list-style-type: none"> ● 7 acres to build linear park along path ● Public access pedestrian corridors 					
Hamilton, Ontario	<ul style="list-style-type: none"> ● Walking trail ● Waterfront use from 5% to 25% 					<ul style="list-style-type: none"> ● Public Uses can transform perception of a whole city
Waukegan, IL	<ul style="list-style-type: none"> ● Floating Pedestrian Bridge link ● Bike path along old rail line ● Volleyball 	<ul style="list-style-type: none"> ● Food Truck Area 	<ul style="list-style-type: none"> ● Plan kayak launch 	<ul style="list-style-type: none"> ● Parking ● Picnic Areas ● Bird Sanctuary ● Better connecting Road to Sea Horse Drive 		<ul style="list-style-type: none"> ● Beach and Park District share resources and fund ● Want more signage ● Connect across railroad ● More traffic can make downtown more vibrant

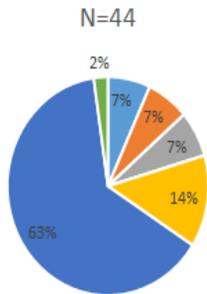
Recommended Public Uses and Outcomes	Page 4/6					
Location	Parks/Walkway	Restaurants/Retail	Boating/Fishing	Passive/Historic	Challenge	Recommendations
Port Huron, MI	<ul style="list-style-type: none"> ● Linear paths and trails along the Black River and St. Clair River 					
Baltimore, MD	<ul style="list-style-type: none"> ● Pierce’s Park child focused ● West Shore Park open and green ● 7 Hectare park for Football 	<ul style="list-style-type: none"> ● Harbor Place ● Markets ● Food Trucks 		<ul style="list-style-type: none"> ● National Aquarium ● Mulch along areas ● A little music ● Kiosks 		<ul style="list-style-type: none"> ● Attract lower income ● Classes to support waterfront ● Free concert ● Free waterfront food ● Inner Harbor Ice cream party ● Small steps to improve the waterfront
Burlington, VT	<ul style="list-style-type: none"> ● Planned Parks ● Bike Trails 		<ul style="list-style-type: none"> ● Public Boating Pier 			

Recommended Public Uses and Outcomes	Page 5/6					
Location	Parks/Walkway	Restaurants/Retail	Boating/Fishing	Passive/Historic	Challenge	Recommendations
Salem, MA			<ul style="list-style-type: none"> ● Water shuttle service to attraction ● Commercial fishing dockage ● Passenger Vessels ● Attract Ferries and Cruise Ships ● Commercial Wharf entrance to Palmer Cover 	<ul style="list-style-type: none"> ● Renovate Ammunition s bunker and make open to public ● Central Wharf National Historic Maritime Site 	<ul style="list-style-type: none"> ● Safe access route along water's edge 	<ul style="list-style-type: none"> ●
Boston, MA	<ul style="list-style-type: none"> ● Piers Park ● South Boston Maritime Park ● 18 acre Bremen Park ● 40 mile harbor walk 	<ul style="list-style-type: none"> ● Outdoor Café 		<ul style="list-style-type: none"> ● Interactive public art ● Garden Space 		

Recommended Public Uses and Outcomes	Page 6/6					
Location	Parks/Walkway	Restaurants/Retail	Boating/Fishing	Passive/Historic	Challenge	Recommendations
Chelsea, MA	<ul style="list-style-type: none"> ● PORT Park ● Mary O'Malley Park ● Plan For Parks along Chelsea State Bridge ● Plan create then connect to path that connects to silver line 		<ul style="list-style-type: none"> ● Canoeing and kayaking Mill Creek ● Fishing Derbies ● 	<ul style="list-style-type: none"> ● Community Garden 	<ul style="list-style-type: none"> ● Proximity to Industries ● Fish not safe to eat ● Crossing Marginal ● Crime, violence, gangs 	<ul style="list-style-type: none"> ● Developing Crossing Lights

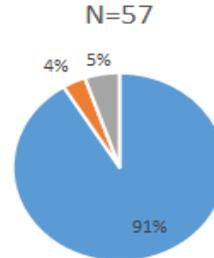
Appendix I: Additional Survey Graphs

Why have you visited the Chelsea Waterfront?
N=44



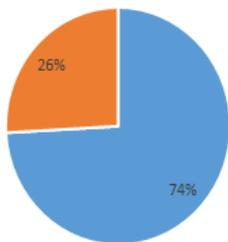
■ Business ■ Home/Family ■ Transportation ■ Other ■ Recreation ■ Shopping/Food

Would you like the Chelsea waterfront to change?
N=57



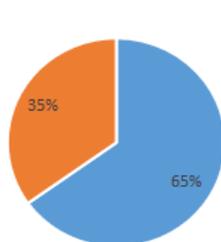
■ Yes ■ No ■ No Opinion

Are you Hispanic or Latino?



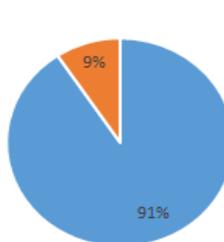
■ Yes ■ No

What is your Gender?
N=86

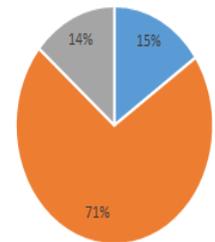


■ Male ■ Female

Are you a resident of Chelsea? Do you find the Chelsea Waterfront Inviting?
N=86

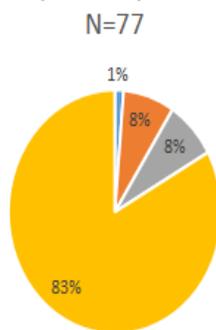


■ Resident ■ Non-Resident



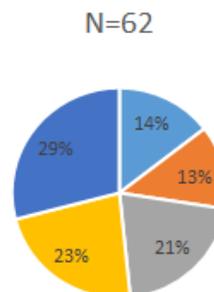
■ Yes ■ No ■ No Opinion

How long have you lived/worked in Chelsea?
N=77



■ Less than a Year ■ 1-3 years ■ 4-6 years ■ More than 6 years

How Often have you visited the Chelsea Waterfront in the last year?
N=62



■ Very Often ■ Often ■ Sometimes ■ Rarely ■ Never

Appendix J: El Planeta Newspaper Article (Spanish)

GreenRoots, Inc. es una organización sin fines de lucro que trabaja en la ciudad de Chelsea, con el propósito de conseguir la justicia ambiental, climática y de transporte, con el fin de crear una mejor calidad de vida para los residentes. Para lograr sus objetivos, Green Roots, Inc. trabaja a través de la acción colectiva, unidad, educación y liderazgo de la juventud. Mediante un compromiso con la comunidad y con el apoyo del liderazgo juvenil, esta organización busca la implementación de campañas y proyectos renovadores que mejoren el ambiente urbano y la salud pública de la ciudad de Chelsea.

Worcester Polytechnic Institute (WPI) ha estado trabajando en conjunto con GreenRoots, Inc. con el fin de promover e informar a los residentes de Chelsea acerca del futuro plan de desarrollo del puerto de la ciudad. WPI es una institución educativa que fomenta el desarrollo intelectual de sus estudiantes. Como parte del programa estudiantil que ofrece la facultad, los proyectos de investigación y ayuda social son una prioridad. Por esta razón, la meta de este proyecto es recolectar las opiniones y preferencias de los residentes acerca de posibles cambios en la comunidad y en el actual puerto de Chelsea, para proveer una voz a los ciudadanos y miembros de la comunidad que son tradicionalmente excluidos.

Con la debida investigación y encuestas realizadas, el equipo que forma parte de este proyecto con la ayuda del grupo juvenil ECO (Environmental Chelsea Organizers), se pudo determinar que:

- ❖ El principal problema yace en que los residentes de Chelsea no tienen un gran conocimiento acerca del puerto,
- ❖ los ciudadanos creen que sus opiniones no son consideradas por el gobierno local,
- ❖ los residentes están más enfocados en disminuir la delincuencia en la comunidad que en el desarrollo del ambiente urbano.

Frente a estos resultados, el equipo encargado llegó a las siguientes recomendaciones, para que la ciudad y otras organizaciones puedan tomar en consideración:

- ❖ Incluir e informar a los ciudadanos sobre los actuales y futuros planes de desarrollo del puerto de la ciudad,
- ❖ involucrar a la juventud de Chelsea en decisiones y proyectos,
- ❖ crear más áreas recreacionales, como parques cerca del puerto,
- ❖ crear más acceso peatonal al puerto, con el propósito de incrementar las visitas y despertar un mayor interés en los ciudadanos.

GreenRoots, Inc. y el equipo de WPI creen que al incrementar la participación ciudadana, en particular de aquellos residentes que viven en los alrededores del río de Chelsea, frente a temas relacionados con el desarrollo, la calidad de vida del público mejorará. Un mejor conocimiento y mayor involucramiento por parte de los residentes causará que los futuros planes y proyectos dentro de esta comunidad sean mejor aceptados y planificados. Así mismo, consideramos que la mejor manera de crecer y desarrollarnos como ciudad es de manera interna. Si logramos un cambio en el pensamiento de los ciudadanos, Chelsea irá mejorando cada vez más de una manera positiva a largo plazo y sostenible para el futuro.

Worcester Polytechnic Institute en conjunto con GreenRoots, Inc.