Culture, Community Development, and Sustainability in a Post-Freeway City

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CULTURE, COMMUNITY DEVELOPMENT, AND SUSTAINABILITY IN A POST-FREEWAY CITY

A Thesis Presented

By

BRYAN OBARA

Submitted to the Graduate School of the
University of Massachusetts Amherst in partial fulfillment
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Department of Landscape Architecture and Regional Planning
CULTURE, COMMUNITY DEVELOPMENT, AND SUSTAINABILITY IN A POST-FREeway CITY

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ABSTRACT

CULTURE, COMMUNITY DEVELOPMENT, AND SUSTAINABILITY IN A POST-FREEWAY CITY

SEPTEMBER 2012

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Freeways that once tore through the urban fabric are now reaching the end of their lifespan and raising the question as to whether it is time to rebuild or remove them. The Interstate system has revolutionized transportation, connecting cities nationwide, but at the same time has slashed through existing neighborhoods.

The very land from which hundreds of Fox Point residents were evicted for the construction of Interstate 195 through Providence, Rhode Island, now lies barren as a result of the interstate’s realignment. The surplus land, rezoned as the East Side Overlay District (ESOD), connects the Providence River and Narragansett Bay waterfronts. The ESOD is awaiting request for proposals (RFP), presenting an opportunity to redefine sustainable community development for Fox Point’s waterfront.

The latest research on sustainable development employs culture as a direction for environmental, economic and social vitality. This project utilizes the historic urban landscape approach as a framework for providing knowledge and planning tools, for a more informed decision making process. In response, a proposal for redevelopment merges cultural development with visitor interaction in a reactivated waterfront. The post-freeway city has an opportunity to rebuild sustainable communities through cultural infrastructure.

KEYWORDS: Culture, community development, sustainability, urban freeway, urban renewal, urban waterfront redevelopment, historic urban landscape approach, participatory planning
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CHAPTER I

INTRODUCTION

The Urban Freeway’s Rise and Fall

It has not been until recent years that the provoking suggestion of removing or transforming freeways has been raised. The automobile has vastly transformed the urban landscape, further provoked with the 1956 Federal Highway Act, attributed to President Eisenhower. A lack of city capital to support adequate planning left to the decision of routing urban freeways to state planners, resulting in the reputation of highway building as a neighborhood bulldozer. A freeway refers to a high speed roadway without at grade intersections, allowing for an unhindered traffic flow. The presence of freeways has only expanded over the years as the traffic engineer’s response to congestion has been to add more lanes. However, this has resulted in the phenomenon of induced demand, where as supply for traffic volume increases, more drivers choose to utilize the freeway, filling capacity once again. As phrased by Walter Kulash, traffic engineer from Orlando, Florida: “Widening roads to solve traffic congestion is like loosening your belt to cure obesity” (Norquist, 2000, p. 1). The effect has been a dramatic increase in the distance that Americans drive, doubling since the 1960s.

Figure 1: The distance that the average American travels. Source: Census Bureau, Statistical Abstract of the United States.
John Norquist, leader for Congress of the New Urbanism, had spearheaded the anti-freeway movement with the demolition of the Park East Freeway in Milwaukee, Wisconsin while serving as the city’s mayor. Many other cities have embraced alternatives to elevated freeways because of their detrimental effect on local housing values and quality of life, while demanding exorbitant maintenance costs. Boston’s Big Dig has served as a prominent example, burying a 1.7 mile stretch of freeway to make room for a greenway corridor. Many cities have followed with plans and proposals for removing or realigning aging urban freeways.

**Culture as a New Paradigm in Sustainability**

Cultural diversity requires the same level of awareness as the significance of biological diversity towards sustainability. The movement towards sustainable development has been largely prompted through an ecological perspective; utilizing visually apparent concerns such as loss of habitat, extraction of precious resources, and an increase in endangered species, just to name a few. As a global concern, the Brundtland Commission, or more formerly the World Commission on Environment and Development (WCED), was created independently of the United Nations (UN). Their publication of “Our Common Future” began to define sustainability, still commonly referred to today. However, research upon sustainable development has expanded to include the diversity of human cultures. Culture can be defined as “the system of shared symbols, behaviors, beliefs, values, norms, artefacts, and institutions that the members of a society use to cope with their world and with one another, and that are transmitted from generation to generation through learning” (Pilgrim, 2009, p. 101). It is proposed that sustainable development calls for protection of biological diversity concurrently with the
protection of cultural diversity as a means of fostering local ecological knowledge. This is increasingly significant given a rapidly changing environment, where adaptation to climate change will require local responses. Sustainable development requires the teaching and passing down of local ecological knowledge from one generation to the next.

**Project Goals**

The city of Providence has embraced policies toward “creativity” and “knowledge” to revive a failing economy, but these policies support a city-wide agenda towards sustainable development, not yet addressing the neighborhood scale. By studying the historic and existing culture of the Fox Point neighborhood, this project aims to understand the way in which culture affects urban redevelopment. It explores historic urban form and character of Fox Point, asking what urban form and land uses most contribute to culture as a framework for sustainable redevelopment. The goals are (1) to create a 3D model to reflect the historic urban form and spirit of place and (2) to develop sound recommendations to the Fox Point community for a culturally sustainable redevelopment of the ESOD area.

**Project Organization**

The basis of this project begins with a literature review, which explores the modernization of cities and creation of urban freeways to understand the potential of their redevelopment through a culturally sensitive framework. In addition, the role of bio-centric as well as culture-centric infrastructure is addressed in relation to sustainable urban planning and design. The literature review leads to a conclusion with the primary questions that have shaped
the project. The Methodology (Chapter III) provides an understanding of the Fox Point neighborhood and the major historic transformations of downtown Providence. It then explains the utilization of deep mapping and modeling for urban redevelopment and the tools appropriate to building a cultural infrastructure. The results and discussion (Chapter IV) presents the redevelopment proposal, which seeks an urban form designed to foster neighborhood cultural development, along with cultural sharing along the abandoned waterfront. Finally, the Conclusions (Chapter V) offer recommendations to the Fox Point community and the Providence Planning and Development Department about how to advance a cultural infrastructure for Providence neighborhoods.
CHAPTER II

LITERATURE REVIEW

The literature review explores the primary movements that have led to the creation and more recent demolition of urban freeways. Then urban sustainability is expounded upon with mapping and modeling methods to incorporate culture within a sustainable development framework.

Urban Renewal and the Interstate System

The Industrialized City

Industrialization in America began in the state of Rhode Island, becoming one of the most industrialized states of the nineteenth century through advantageous water fronts. Providence was widely recognized as the nearest inland access to New England from southern waters, fueling its economy through shipbuilding and sea trade. The city had even eclipsed its maritime and political rival, Newport, Rhode Island. Samuel Slater, father of the American Industrial Revolution, built the first American mill in the neighboring town of Pawtucket in 1790 (Tucker, 2008). Industrial growth throughout the nineteenth century for all major cities across America, including Providence, began to face the blights of overcrowding, poor housing, factory soot, and a dangerous working environment.

The bleak and unhealthy conditions of industrialized cities had inspired the Garden City Movement; a utopian vision of English town planner, Ebenezer Howard. The movement grew in response to London’s deplorable conditions, when factory laborers sought pastoral retreat from the city. The general form implied concentric urban development surrounded by a greenway belt. While implicit models of the Garden City have not proved to be influential, the
concept has pervaded modern planning much to this day. The pioneer of modern architecture, Charles Éduoard Jeannerret, better known as Le Corbusier, was moved by the Garden City Movement, but the first to conceptualize the automobile’s effect on the urban form, as depicted through his concept for the Radiant City. Le Corbusier published *The City of Tomorrow and its Planning*, to tell the story of the Radiant City and tantalized imaginations with statements as in the following:

> Our fast car takes the special elevated motor track between the majestic skyscrapers: as we approach nearer, there is seen the repetition against the sky of the twenty four skyscrapers; to our left and right on the outskirts of each particular area are the municipal and administrative buildings; enclosing the space are the museums and university buildings. The whole city is a Park (Le Corbusier, 1987, p. 29).

The concept of city in a park has served as the foundation of urban planning, seeking refuge from the overcrowded and unhealthy industrial environment, through the freedom of the automobile.

**The Modern City**

The rapid and unplanned growth of industrialized cities in the nineteenth century had resulted in poor living conditions and required a solution to projected urban population growth. A response early in the twentieth century had been the City Beautiful Movement, a North American philosophy that monumental architecture and urban planning could promote civic virtue. As a form of modern city planning, the City Beautiful Movement has been criticized for concentrating poverty and isolating uses. The problem lies in the bureaucratic decision making process to remove low-income communities and replace them with enclaves for more affluent
Derek Hyra, a professor of Urban Affairs and Planning at Virginia Tech, disputes the ecological model’s primary assumption concerning ‘natural’ development with evidence that concrete political decisions are the underlying determinant of development patterns (Hyra, 2008, p. 152). The planning of modern cities sought cleansing and simplification of a rapidly changing environment.

Boston’s West End urban renewal project is a prime example of a complex community erased as a result of modern urban planning. In the 1920s, Boston’s West End held the city’s greatest density, stacked with four to five story crowded apartments. The neighborhood was widely racially mixed, but all served as working class migrants, making their way in America. While the housing stock was not in great shape, the neighborhood boasted a strong family and neighborhood support structure in exchange. This seemed contradictory to urban planning at the time, which saw housing as the solution to social ills. By the end of the 1950’s, seven thousand residents of West End had been evicted and the fifty-two acre neighborhood had been demolished. Sociologist, Herbert Gans studied the West End prior to its renewal, in his book, *The Urban Villagers*. He describes the neighborhood as, “a lively, working class community of three-to-five story apartment houses – not the blighted slum the city’s establishment claimed. A potpourri of immigrant groups and a small number of African Americans lived together in relative harmony, their lives centered on their families and the churches, synagogues, schools, settlement houses, and small shops that dotted the West End, at the foot of Beacon Hill” (Dreier, 1995, p. 2). The Boston Redevelopment Authority notified West End residents in 1958 that their homes and businesses would be taken by eminent domain. “Displaced residents suffered emotionally, and almost all of them had to pay
considerably more rent after they were forced to move” (Dreier, 1995, p. 3). The City Beautiful movement had been fueled by Ebenezer Howard’s vision; that “these wretched slums will be pulled down, and their sits occupied by parks, recreation grounds, and allotment gardens” (Howard, 1965, p. 146). Boston’s West End community had been cleared of its intricate family ties and the institutions that provided a sense of place, to make way for isolated towers.

Jane Jacobs, a well-versed proponent against neighborhood removal and modernization, references Boston’s North End as another urban renewal effort example in her book, *Death and Life of Great American Cities*. As stated in an interview with Boston planner, “My friend’s instincts told him the North End was a good place, and his social statistics confirmed it. But everything he had learned as a physical planner about what is good for people and good for city neighborhoods, everything that made him an expert, told him the North End had to be a bad place” (Jacobs, 1961, p. 10-11). Jacobs fought and won her own battles for Greenwich Village of New York City, targeted by Robert Moses for construction of the Lower Manhattan Expressway. However, the battle for the North End was lost as hundreds of buildings had been demolished for construction of the John F. Fitzgerald Expressway, otherwise known as Boston’s Central Artery. The neighborhood saw rapid decay in the following decades, cut off from the downtown area. The true character of the North End neighborhood had been overlooked, as a simplified means to address transportation for the more affluent suburbs.
Figure 2: Creek Square in 1896. A surviving street adjacent to Boston’s former Central Artery. Source: http://www.cyburbia.org/forums/showthread.php?10814-Medieval-Boston-(photos-and-commentary)

The Automobile City

The advent of the automobile as vastly transformed the American landscape. Highways had been planned for as early as 1941 with Roosevelt’s establishment of an Interregional Highway Committee with the intention of connecting primary metropolitan regions. Within cities, the rapid acquisition of automobiles demanded more space than the horse and carriage, causing frequent traffic congestion and an opposition towards vehicles. However, the automobile was deemed a healthy alternative and an alluring icon of modernization. In The
Independent newspaper production of 1903, it was stated that “The automobile likewise brings environmental and public health benefits to urban residents. It would lend to - the entire banishment of the horse from city streets – a measure much to be hoped for on the score of cleanliness and health” (Fotsch, 2007, p. 13). A further attraction to the automobile grew out of the autonomous nature it provided, a luxury to control such technology; as opposed to the inevitable crowding that occurred in a trolley with the masses. It also provided a means to escape the soot, smoke, and noise of the city. Frank Munsey, publisher of Munsey’s Magazine, described the automobile as “the greatest health giving invention of a thousand years. The cubic feet of fresh air that are literally forced into one while automobiling rehabilitate worn-out nerves and drive out worry, insomnia, and indigestion. It will renew life and youth of the overworked man or woman…” (Fotsch, 2007, p. 22). Center Business District (CBD) leaders feared the loss of customers due to traffic congestion and advocated strongly across all cities for more effective traffic signs, lane widening and eventually the highway, all as a means to draw people back into the city.

Envisioning an elevated track just for automobiles had been present since Le Corbusier’s depiction of a Radiant City. However, the official categorization of the freeway is attributable to planner, Harland Bartholomew. “This new classification for a roadway that allowed for seemingly unimaginable capacities, speeds, and convenience for private vehicle transportation in cities” (LaRoche, 2010, p. 3). The freeway centered plans of the 1920’s focused on solving the congestion problem by providing high-speed vehicle movement into downtown, and in turn, arrest urban decentralization (Brown, 2005, p. 12). By the 1930’s, New York had been the only city successfully building freeways. Robert Moses is known for much of the bridge and freeway
construction around New York City. “Robert Moses proved to be an expert in pursuing federal aid dollars and leveraging bridge toll revenue, was significant freeway mileage built...The lack of local resources hampered free-way – building efforts in Chicago, Boston, San Francisco, and numerous other cities. Thus, the freeway remained largely an idea that had yet to be tested on a large scale when the 1930’s came to an end” (Brown, 2005, p. 19). Post World War II would provide an impetus to improve the transportation network between major cities.

Although the Interstate system ubiquitously connects cities across the nation, this network had not been fully conceived until the 1950’s. Roosevelt’s Interregional Highway Committee, led by Barthalomew, began planning the new roadways, but was placed on hold until after the war. The discussion was back on the table with the passing of the 1956 Federal-Aid Highway Act, which has been attributed to President Eisenhower. The rapid move towards an interstate system was largely a defense strategy, connecting major military bases and allowing for the rapid dispersal from city centers in case of a national threat. This national initiative also served individual cities well by finally addressing traffic congestion problems, which had plagued urban centers since the 1930’s. While the lines had been drawn for the broad interstate plan, urban planners were left to determine routes that cut through their city. This would have proven more site-sensitive and have led to less neighborhood destruction, but as historian Jeffrey Brown discusses, cities had to forfeit their visions for urban freeway development. “Cash-strapped cities surrendered planning control in exchange for state and federal highway dollars. Local engineers, planners, and public officials were left to make the occasional modification in alignment, but could not change the overarching logic that propelled the Interstate program” (Brown, 2005, p. 3). In fifty years of passing the Federal-Aid Highway
Act, state highway departments have used billions of federal tax dollars to build more than forty thousand miles of freeways across the United States. While it is inarguable that the interstate system has provided a more robust transportation system for the nation, the outcome on local character of cities and neighborhood scale has been devastating. “The image of the Interstate Highway program and programs such as urban renewal as a ‘federal bulldozer,’ disregarding social and environmental effects, helped produce additional legislation that required environmental impact assessment and an increased role in decision making for local elected officials and community residents” (Deakin, 2006, p. 17). The lack of planning and rapid construction of the Interstate Highway had led to removal of imbedded neighborhoods, such as Boston’s Italian North End.

Construction of Boston’s Central Artery has been considered an action of slum clearance, financed through the Federal Highway Act of 1956, displacing hundreds of families and their businesses. From the modern planning perspective, especially looking at the broad city scale, the location of the urban freeway seemed to make sense. Lelean LaRoche analyzes Boston’s waterfront as a case study for her thesis, stating that “building the Artery along Boston’s waterfront seemed most logical. Boston’s business district, once centered on shipping, was located her” (LaRoche, 2010, p. 21). The sighting of the freeway was intentionally part of slum clearance initiatives, but determined upon an inaccurate understanding of the North End. Jane Jacobs recalls her personal experiences: “Twenty years ago, when I first happened to see the North End...the general effect was of a district taking a terrible physical beating and certainly poor. When I saw North End again in 1959, I was amazed at the change. Dozens and dozens of buildings had been rehabilitated” (Jacobs, 1961, p. 9). This is a case unlike many
slums, which fall into disrepair with consistent rental turnover, since residents move out once economically feasible. The North End had developed into a distinct community, closely tied to a sense of place. Jane Jacobs had inquired about the North End with a Boston planner, who noticed the residents’ high literacy rates and positive health, despite their living in what was considered a slum. Unfortunately, economic motives determined the location of the freeway, one which would become obsolete. LaRoche criticizes the effect of the Artery on Boston’s urban form: “It kept pedestrians from the water. The downtown highway’s height overwhelmed low-rise streets and historic public spaces and places, leaving the area with traffic, noise and shadow” (LaRoche, 2010, p. 21). The loss of truly successful neighborhoods, such as the North End, to short-lived urban freeways is a travesty to learn from in future development.

**Urban Waterfront Redevelopment**

The remaking of urban waterfronts has become common among coastal American cities as water-based industries play less of a role in local economies. It has been over fifty years since cities such as Boston and San Francisco reinvested in their waterfront properties. Deindustrialization among American cities has become common as economies shift from manufacturing employment base to largely service sector employment. Major shipping ports have concentrated as inland distribution has become more efficient through trucking on the Interstate System and with additional modes of transportation, with air freight. The opening of former cargo-handling facilities and factories along the waterfront presented large tracts of land for redevelopment. The Urban Land Institute attributes further factors to waterfront
attraction, including cleaner water and land as a result of the Clean Water Act enacted in 1972. In addition, federal funding for Brownfield remediation has provided an impetus to redevelop the likely toxic lands along former industrial waterfronts. Improved water quality has made water recreation and transportation desirable, transforming waterfronts from industry based, to leisure. The 1960s and 1970s also marked the Historic Preservation Movement, which sought to retain the history of American industrialization, an aesthetic currently idolized for its nostalgic effect, despite the treacherous working conditions associated with the time period. Retention of industrial aesthetics describes the history of the sight, while transforming in use to adapt to modern society.

Historic urban waterfronts are inspiring a return to human scaled environments along former industrialized tracts. Colonial ports thrived off of the intricate mix and close-proximity of businesses, where the manufacturing and selling of goods was easily distributed. Timothy Sieber explains the desire to return to the historic scale of development. “The desire to enhance the public’s physical proximity to the sea, and their visual connection to it, is part of a general movement of returning waterfronts to a more ‘human’ scale of design and use, where pedestrian networks, smaller-scale buildings, smaller specialty retail shops, and communal celebration and festivity are present, along with the ‘mixed use’ functions that characterized preindustrial seaside villages or waterfronts, where homes, stores, and workshops, public and private, were combined in the same location” (Sieber, 1993, p. 190). The urban form that characterized preindustrial waterfronts has been the same form largely advocated by New Urbanists, focused on walkability, mixed-use, and density. The urban waterfront has also been redeveloped largely for leisurely activities.
City residents are turning back to water as a pastoral retreat from urban conditions. While urban conditions have certainly improved beyond the industrial period, humans still innately desire a connection to nature, often referred to as biophilia. “The contrast between city and water – between culture and nature, in other words – becomes more sharply drawn, more highly charged, and more ritualized through those new spatial arrangements than ever before” (Sieber, 1993, p. 190). This perceived contrast between culture and nature provides restorative benefits, a place where one may contemplate and pull away from the stresses of everyday life. “As in the case of the older pastoral, today’s peaceful waterfront vistas are also justified as healthful, a palliative to urban bustle, confinement, and what Frederick Law Olmsted called the ‘special enervating conditions of the town’” (Sieber, 1993, p. 187). The creation of waterfront parks and walkways has provided a public necessity to open space, but the attraction for development has often led to gentrification of neighborhoods.

Industrial waterfronts developed with dense housing nearby to support the workers needed, typically attracting new immigrants and an overcrowding of families. Through the deindustrialization processes, the industry may have moved, but if the workers’ housing had not been demolished, it commonly served as affordable rental for low-income residents. “Obsolete industrial and commercial space and facilities on waterfronts undergo redevelopment into mixed-use office and residential complexes, and accompanying upscale retail services, festival marketplaces, leisure areas and public amenities. Redevelopment typically involves gentrification and the transformation of long-standing blue-collar, sometimes roughneck zones into middle- and upper-income enclaves, occupied or frequented by a mix of residential professionals, suburban commuters, and tourists” (Sieber, 1993, p. 173). As the
water becomes more of an aesthetic pleasure, as opposed to an economic means, the
ascendancy of the middle-class over the working-class becomes evident once again. Hyra
describes this gentrification as the ‘New Urban Renewal,’ where concentrated pockets of
poverty are being removed through increased living expenses of surrounding areas.
Regeneration of the urban waterfront has revived many cities, but as a reaction, has also fallen
to exploitation.

The cultural attachment to water in the cities has potential to benefit all urban citizens,
but runs at risk of being developed only for global branding and tourism. Especially as cities
bolster their creative economies for increased tourism, Andrew Jones witnesses the current
issues in waterfront regeneration. “These have included: problems associated with waterfront
‘fashions’ and commercial exploitation at the expense of community need; problems associated
with land use mix and the ‘standardization’ of waterfront development schemes; problems of
funding, commercial failure, or the securing of community or social benefit; problems of
‘political dogma’ with an overemphasis on private-sector led initiatives; and problems
associated with social conflict especially between indigenous community groups and new
development” (Jones, 2007, p. 146). However, Jones also sees successful waterfront
regeneration through development paradigms that emphasize inclusivity. With good planning,
innovative urban design, cultural sensitivity, equitable financing, and appropriate development
scale, the urban waterfront regeneration holds a sustainable future. As cities return to their
waterfronts, it is imperative to learn from its historic form and from the mistakes of previous
urban renewals.
Urban Freeway Redevelopment

The next frontier of urban renewal will engage the urban freeway. We are at the precipice of redefining urban vitality now that much of the urban freeway infrastructure is coming into the question of whether to rebuild or remove. “The Interstate highways are facing problems. The facilities are old, and funds for maintenance and reconstruction are not easy to find. The highways continue to have negative effects as well as positive ones, dividing communications and exposing nearby populations to noise and emissions” (Deakin, 2006, p. 17). Many of the nation’s urban freeways have developed along waterfronts to serve access to the industry that thrived there. However, deindustrialization has made these connections obsolete. As a means of reclaiming waterfronts and brownfields for parks, residential, and civic institutions, cities have made the removal of highways along former industrial territories and waterfronts a major focus. One of the most prominent examples of this has been the burying of Boston’s Central Artery, a 1.7 mile stretch of urban freeway.

Boston has buried its freeway and opened access to its waterfront, serving as a prime model for the nation. The Central Artery was immediately despised for the way that it towered over and separated the neighborhood (LaRoche, 2010, p. 15). The Big Dig project sought to bury 1.7 miles of the highway underground to make way for open space and connection back to the waterfront. While the total cost of the project amounted to $14.8 billion, the increase in transportation efficiency, rise in retail values, ecosystem services, and cultural services has begun to pay off. Travel time has been restored to pre-construction estimates and the creation of the Rose Kennedy Greenway in its place has increased commercial property values by 79 percent in 15 years, double the citywide increase of 41 percent (LaRoche, 2010, p. 23).
However, the active use of the greenway day and night is the best proof of its value to citizens and visitors of Boston. While the Big Dig has proven to be a rather costly means of dealing with urban freeways, there have been other resolutions conducted in different cities, including removal and relocation.

Depending upon the situation, removal of urban freeways may be possible without significant traffic congestion, or realignment may at least allow a rebuilding of urban form. Transportation planning must deal with the variable of personal choice. It has been concluded that individual drivers will optimize their routes, so the phenomenon of induced demand will only increase as more lanes are added to a highway. San Francisco’s Embarcadero Freeway serves as a prime example for the positive effects associated with its removal. In its place, Octavia Boulevard reveals the same amount of congestion as the far larger highway that was in its place. However, the streetscape is now framed with wide sidewalks, ribbons of streetlights, mature palm trees, historic streetcars, waterfront plazas and sculpture gardens (LaRoche, 2010, p. 38). While relocation of an urban freeway does not alleviate their symptoms upon a community, it may facilitate a better integration of neighborhoods that were originally severed. With the aging infrastructure of urban freeways coming to an end, the pertinent question of how to envision them has often led to removing them from the urban fabric.
Figure 3: The Rose Kennedy Greenway. Boston’s former Central Artery and the product of the “Big Dig” burying the freeway.
Source: http://www.gardenclubbackbay.org/2012/01/21/request-for-proposals-for-boston-committee-grant/
Sustainable Urban Planning and Design

Urban Nature Sustainability

Investigations into understanding sustainability have become more complex as various disciplines contribute to answering the same question of how to develop sustainably into the future. The concern over sustainability stems from the scientific community, with the understanding that resources on the earth are finite. Rapid urbanization and resource consumption was first globally addressed through the United Nations World Commission on Environment and Development (WCED). Developed from the discussion at the Stockholm Conference, the Brundtland Report was published in 1987, providing the most commonly utilized definition of sustainability. “According to the Brundtland Report (1987), sustainable development – meets the needs of the present without compromising the ability of future generations to meet their own needs.” The International Council for Local Environment Initiatives (ICLEI, 1994) builds upon the resource implied definition of the Brundtland Report, by defining sustainability as “the kind of development that supplies all members of the community with basic environmental, social, and economic services without devitalizing the underlying natural, artificial, and social systems” (Tamagawa, 2006, p. 258). The following definition begins to recognize the two connotations associated with sustainability. In reflecting upon sustainability in Japanese cities, Hidenori Tamagawa explains the first connotation as metabolism, requiring a balance between production and consumption. The second being adaptability, so that the fabric of society may continue at the present, while building a framework to avert eventual risks” (Tamagawa, 2006, p. 258). The prognosis for a sustainable society has been translated into not only environmental sustainability, but a sustainably-
oriented social system. “Such a renewal will hinge on the following: self-determination by the
community; transferring financial resources; self-management; transparent procedures;
acceleration of decision-making processes; improved quality, user-friendliness and efficiency of
plans and services; enhanced accessibility; control over exploitation of resources; enhancement
of oversight by competent authorities of third-party organs; strategic advice, and clarification of
standards. This vision of a sustainable society is sometimes known as a ‘smart’ or ‘enhanced’
community” (Tamagawa, 2006, p. 259). The smart community builds off of the constant mutual
economic and social support of other individuals, enhanced through the complexity of close-
grained diversity. Just as biodiversity has revealed itself as a critical element for resilience and
adaptability in a rapidly changing global environment, the same applies within a cultural
context. With this understanding, the traditional three tiers of sustainability have been
modified.

Culture plays an over-arching role, guiding the environmental, economic, and social
factors in sustainability. The four-pillar model of sustainability includes environmental
responsibility, economic health, social equity, and cultural vitality. This model recognizes that a
community’s vitality and quality of life are closely related to the vitality and quality of its
cultural engagement, expression, and dialogue; a city in which people want to live, work, and
visit (CECC, 2006, pp. 01). American cities have approached revival through a cultural milieu,
encouraging creativity. Rutherford Platt defines this city as the human metropolis, which are
more green, more healthy and safe, more people friendly, and more equitable (Platt, 2006, p.
15). Planning for bio-centric infrastructure as well as culture-centric infrastructure provides a
framework to address sustainability from an environmental, economic, social, and cultural perspective.

**Bio-centric Infrastructure**

As declared in the *State of the Cities Report 2006*, “the future of sustainability will be won or lost in our cities.” While cities are not the single factor leading to social stability, it is evident that urbanized areas bring wealth, stable economy, and more public services. At the same time, it is more cost effective per person to provide infrastructure and more conservative in additional energy output (United Nations, 2006). Despite all these strides towards sustainability, cities still require the importation of resources in order to support existing urban life. The linear consumptive patterns of cities have been possible through the dependence on large hinterlands, transformed into landscapes of resource extraction and waste deposition.

*Figure 4: Ecological footprint of a city. Source: Wackernagel, 2004, p. 212*
This may be measured through the ecological footprint study, developed by professor William Rees and colleagues, as an “accounting tool to estimate resource consumption and waste assimilation requirements of a defined human population or economy in terms of corresponding productive land area” (Wackernagel, 2004, p. 212). While it is inevitable that cities will require an ecological footprint greater than its physical bounds (at least given the current rate of urban progress), there is potential for cities to manage its resources more efficiently. The critical resources that are frequently treated as waste include: water, organic matter, metals, plastics, and construction debris to name a few. These material flows may become incorporated within urban infrastructure to process for reuse; an inevitable concept given population growth and the current strain on resources. Patrick Condon provides the research and basis for 7 rules of sustainable low-carbon communities, acknowledging carbon output as a measure of ecological footprint. He recommends a community that restores the streetcar city; designs an interconnected street system; locates commercial services, frequent transit and schools in a 5 minute walking distance; locates goods and jobs close to affordable homes; provides a diversity of housing; creates linked systems of natural areas and parks; invests in lighter, greener, cheaper, and smarter infrastructure (Condon, 2009, p. 14-15). Cities provide the necessary infrastructure to support more humans in less consumptive patterns.

A sustainable green infrastructure conserves significant ecologically functioning patches and maintains or develops the corridors between them. The emphasis of green infrastructure is on connectivity as a means of allowing the healthy distribution and interrelationships of plants, animals, and water. As defined by Dr. Jack Ahern, green infrastructure incorporates “spatially and functionally integrated systems and networks of protected landscapes supported with
protected, artificial and hybrid infrastructures of built landscapes that provide multiple, complementary ecosystem and landscape functions to a broad public, in support of sustainability” (Ahern, 2010, p. 159). Green infrastructure planning does provide the framework for protecting and increasing hydrologic connectivity. For example, New York City purchased watershed land in the Catskill Mountains for $1.5 billion as opposed to the expected cost of $6-8 billion in order to construct a new water filtration and treatment plant. In concerns of climate change and its related impacts on cities, a large-scale green infrastructure plan influences development patterns so they may be more resilient and sustainable given climatic changes. As Patrick Condon explains, “...there is a growing acknowledgement by scientists and policy analysts that a substantial part of the global warming challenge may be met through the design and development of cities. The form and function of human settlements can either reduce or increase the demand for energy and can also influence how energy is produced, distributed, and used” (Condon, 2009, p. 4-5).

Green infrastructure provides the services needed for the function of a city, but utilizes ecosystem services as a cost-effective and sustainable model. Daily Gretchen, a professor of biology at Stanford, defines ecosystem services as “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life” (Daily, 1997, p. 3). This definition acknowledges that we as human beings are interconnected with natural cycles and as Nancy Rutledge Connery describes a civil infrastructure, “the built environment (the one we’ve made) and the natural environment (the one that made us) are both sacred and inseparable” (Connery, 1999, p. 1). City growth has replaced these natural cycles and the services they provide with hard infrastructure, but at a much greater cost,
especially through its contribution to climate change effects and its own inflexibility in dealing with climate change. Ecosystem services sustain life because of their organic complexity and diversity that have developed over approximately 4 billion years with the first simple cell prokaryotes. Urban ecology has developed and has transitioned from a discipline that studies ecosystems in the city, to the city as an ecosystem, as a means of understanding what services are needed for a sustainable environment. Anne Whinston Spirn dismisses this separation of the natural environment and the city through the acknowledgement of ecological flows that occur naturally within cities (Spirn, 2007). A green infrastructure serves human well-being through the provision of ecosystem services or “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life” (Daily, 1997, p. 3). This requires the maintenance of biodiversity and production of ecosystem goods, along with life supporting functions provided through cleansing, recycling and renewal (Daily, 1997, p. 3). Incorporating ecosystem services within a bio-centric infrastructure demands a new form of urban development.

Green infrastructure serves ecosystem and biological health, but prioritizes human demand by fitting into the context of human development. Dr. Jack Ahern promotes green infrastructure as a model for urban form and provides a framework for applying landscape ecology. Through abiotic, biotic, and cultural categories, we may ensure that the broad spectrum of ecosystem services becomes part of a comprehensive green infrastructure (Ahern, 2007). Peter Newman and Isabella Jennings describe the Cities as Sustainable Ecosystems (CASE) as a perspective for “looking at the patterns and processes of sustainable ecosystems as the basis for a way forward. These patterns and processes are ones that cities need to emulate
and/or restore to move toward sustainability” (Newman, 2008, p. 93). The United Nations has taken a strong stance on reducing the degradation and abuse of ecosystem services, attributing anthropogenic climate change to the loss of these services to expansive human development. (United Nations, 2005, p. 17). Protecting and building upon the ecosystem services within a green infrastructure network, shapes human development and provides services for a sustainable city in conflict with the fluctuations of climate change.

**Culture-centric Infrastructure**

Developing a cultural infrastructure for the creative economy in cities has brought about the most recent urban revival. Planning focused on culturally based economic development tends to support either cultural consumption or cultural production, which “runs the risk of being dominated by property-based interests such as: building characteristics, project glamour, or profile, architectural reputation, development of specific cultural sectors, and financing and fundraising abilities” (Dang, 2007, p. 4). Following more of a community cultural development approach leads to a more decentralized infrastructure of cultural consumption and production. This requires developing cultural activities into community-based, mixed-use facilities that fosters a spirit of place. The Québec Declaration, adopted by the International Council on Monuments and Sites (ICOMOS), recommends the preservation of spirit of place through “the safeguarding of tangible and intangible heritage, which is regarded as an innovative and efficient manner of ensuring sustainable and social development throughout the world” (ICOMOS, 2008, p. 1). Heritage is the transference of local cultural knowledge from one generation to the next, supported through policies toward cultural development and sharing.
“The term cultural infrastructure is sometimes used in reference to only built cultural facilities (i.e., buildings), but the literature suggests that the infrastructure required to support artistic and cultural activities in a community comprises a much more diverse range of amenities and assets.” Tangible elements include: theaters, libraries, museums, studios and archives, as well as other performance venues such as public squares, festival sites, public art, streetscapes, café galleries, bookstores, art schools, culturally significant sites, and built and natural heritage. While intangible elements include: ancillary, supporting, and connecting infrastructure, as well as organizational and system capacities (Dang, 2007, p. 10). As a means of facilitating these cultural infrastructure elements within a cultural ecosystem, Dang calls for the following: information, communication and technology development; partnership with universities and other institutes; consumer and producer services; international communication networks; historically-grown urban atmosphere; connections with residential, commercial, and other infrastructure” (Dang, 2007, p. 12). A cultural infrastructure is capable of fostering creativity community driven society.

Sustainability will develop from the innovation of local communities. Tamagawa envisions a shift in the authority of communities, where “at the strategy execution frontline, communities will be required to serve as bases for the transmission of information and as enhanced social systems with local creativity and cautious responsiveness. Paradoxically, communities will become more likely to be subjected to direct control of authorities at upper levels” (Tamagawa, 2006, p. 267). Communities under this social structure will need to address their assets of existing heritage and nature and cultural participation, increasing social learning,
capacity building and social mobilization inherent in the participatory process. Luigi Fusco Girard refers to the five benefits of creativity summarized by Bradford (2004):

- governance innovation: new ways of community involvement in the planning process
- civic innovation: shift to a knowledge economy in smaller communities
- economic innovation: based on ideas, design, and networking becoming a more valued input
- social innovation: citizen participation in art and cultural activities, in route to inclusion of marginalized communities
- artistic and cultural innovation: many forms of aesthetic expression that enable more to live together.

Cities are dynamic ecosystems, but require a cultural infrastructure and corresponding spatial planning in order to foster a creative environment. “Municipal and regional planners are increasingly presented with the challenge of creating or fostering a vibrant, creative community. One of the key factors in this scenario is space – space to produce, create, experiment, and innovate; space to rehearse, perform, exhibit and preserve; space to interpret, learn, engage, and share, and so forth. Planning for these spaces is integral to a community’s cultural and creative development – as well as its ongoing vitality, cohesion, identity and sense of place” (Dang, 2007, p. 1-2). The creative city requires a new spatial organization, where art and creativity play a significant role as urban resources. Girard explores a culture-led regeneration in establishing the creative city through spacemaking, placemaking, and building knowledge. ‘Spacemaking’ implies creating affordable space for artists, design-makers and creative entrepreneurs; ‘placemaking’ as an integrated and transformative process that connects creative and cultural resources in a neighborhood, district or city to build authentic, dynamic and resilient places; and ‘building knowledge’ as building and sharing knowledge in culture-led regeneration (Fusco Girard, 2011, p. 32). Spatial design of a cultural infrastructure
calls for an innovative agenda in urban planning that addresses space for innovative creation and sharing.

Innovation and creation foster the growth of a cultural infrastructure, but the historic urban landscape approach provides a means toward conservation or restoration of a cultural heritage. Historic urban areas reflect the most advanced representations of a common cultural heritage, transforming through generations of human aspiration. As defined by UNESCO, “The historic urban landscape is the urban area understood as the result of a historic layering of cultural and natural values and attributes, extending beyond the notion of ‘historic centre’ or ‘ensemble’ to include the broader urban context and its geographical setting” (UNESCO, 2011, p. 02). This transformational instrument developed in November 2011, broadened the perspective of historic urban centers as playing a critical role in the entire city today, rather than a valorized fragment of the city’s past. “The historic urban landscape approach considers cultural diversity and creativity as key assets for human, social, and economic development, and provides tools to manage physical and social transformations and to ensure that contemporary interventions are harmoniously integrated with heritage in a historic setting and take into account regional contexts” (UNESCO, 2011, p. 02). Historic urban areas have commonly been treated dichotomously; serving as a static representation of the city’s heritage, while the surrounding urban development reflects more of the futuristic ideals of modern urban planning. This perspective places two burdens upon historic urban areas, making them more and more irrelevant to contemporary demands. Redefining the historic urban landscape goes in hand with the most recent interpretation of authenticity of place. As defined by the Nara Document on Authenticity (1994), “the understanding of authenticity plays a fundamental
role in all scientific studies of the cultural heritage.” This document further broadens the term authenticity, by declaring that is varies from culture to culture, supporting the need to assess heritage within the cultural context to which it belongs (UNESCO, 1994, p. 3). The search for an authentic sense of place stems from the development of the Interstate highway and exodus from cities. American cities are dramatically changing with the revival of urban centers, attracting many new urbanites. “This emerging public culture, I believe, seeks to create a sense of authentic belongingness – a connection to place, local environment, and local traditions – among these groups, all of whom have typically been strangers to the city in recent generations and who are largely ignorant of its ways” (Sieber, 1993, p. 185). As populations return to city centers, new values will be created, but will emerge from the local traditions and perceptions. The historic urban landscape approach enhances the livability of a place by preserving the shared values from a cultural heritage, while fostering new values rooted in an authentic sense of place.

### Mapping a Sense of Place

Sustainable planning and design acknowledges the complexity of systems inherent with cities and requires an acceptance for adaptability. There are three important systems to enhance the adaptability to new urban design. The first is a governance system to understand present conditions and the desirable urban design. The second system is resource mobilization, to provide the energy for a function working, and to reorganize the community itself into ‘tough’ systems. Third is the system of feedback by which connectivity and the environment carry out an interaction between each other (Tamagawa, 2006, p. 279). The design of
Sustainability makes the most of the outputs and heightens adaptability of a system to respond to the needs of a cultural infrastructure.

Sustainable urban planning is made possible by computer modeling that brings together the complex matrix of systems that compose the modern city. The use of Geographic Information Systems (GIS) to manage spatial records is ubiquitous among archaeological research and cultural resource management. However, mapping has typically fallen short of illustrating the true sense of place due to a cartographer’s biases and static representation of time. A map just as a photograph, captures a moment of time, but also acts as a medium for knowing the past. Deep maps reflect the actuality of place through the removal of temporal representation and collection of participatory experience.

The common flaws in map making must be drawn out to reveal the new paradigm of reflecting a sense of place through GIS. The use of GIS commonly results in the production of distribution maps, with emphasis on the primary relationship between physical features and archaeological material. With the understanding that place is a construction of human creation and experience, maps that simply reveal physicality without experiences become static and meaningless. Maps are also inherently socially constructed forms of knowledge that represent the map maker’s particular conception of the world. “The creation of a map distances the observer from the landscape that it represents: simplifying reality for disciplinarian purposes of inspection” (Fitzjohn, 2007, p. 239). In relation to cultural heritage, mapping bias has often come through as a reflection of power of influence. This was evident in a project conducted by Professor Robert Summerby-Murray in developing a cultural heritage management policy for Sackville, New Brunswick, Canada. “(A) concentration of listed buildings on particular streets,
suggesting the evolution of high-end residential districts in the southern and eastern portions of present-day urban Sackville...Students correctly questioned whether the data accurately represented overall construction trends” (Sinton, 2007, p. 241). Buildings of the laboring class were conspicuously absent. A more inclusive map reflects a place through its totality of economic and temporal expressions.

The construction of a deep map has the ability to tell you everything about a place, addressing the sought out question of whether we can appreciate place without being in a place. The publication of Theartre/Archaeology by Mike Pearson and Michael Shanks, summarized as “the (re)articulation of fragments of the past as real-time event” (Shanks, 2012), begins the conversation of place across time. According to Person and Shanks, deep maps are “rich collations and juxtapositions of the past and the contemporary, the political and the poetic, the factual and the fictional, the discursive and the sensual; the conflation of oral testimony, anthology, memoir, biography, natural history and everything you might want to say about a place” (Pearson and Shanks, 2001, p. 64-5). An experiment in deep map making was conducted by Michael Shanks with the Stanford University Humanities Center in 2000, involving The Three Landscapes Project. One of the products was A Map on a Wall (Fig. 05). The 8’ x 24’ graphic is a physical representation of a deep map, combining a variety of mappings, aerial surveys, photographs, journal and journey, with a single figure in the landscape and several orders of text. “More complex and (dis)located than those associated with the landscape painting, the photograph or the conventional map” (Shanks, A Map on a Wall), this project utilizes multi-media to completely tell the story of place. In addition to the graphic production,
Figure 5: Board 1 of 3 from “A Map on a Wall”
Shanks also applied the concept of collaborative information building to Traumwerk, a Wiki browser-based collaborative software. Traumwerk refers to dreamwork with a tongue-in-cheek reference to Freud, reflecting absolutely free-form and self-organizing information resource. The software is a result of setting hyperlinking free, so that information grows interactively and organically, rather than being pre-organized. This framework forms the basis of Participatory GIS, allowing for a complete representation of a place and the people who define it.

The diverse forms of information that build a deep map are possible through Participatory GIS, incorporating the entire public opinion. The failure of a cartographer’s bias is remedied through the representation of the multiple realities of place, integrating people’s diverse spatial knowledge. A deep map illustrates the multiple perceptions of place in order to achieve a comprehensive understanding among the people who shape it. For native communities, this has proved useful in documenting Indigenous Spatial Knowledge (ISK), strengthening the often undermined connection to ancestral lands and cultural resources. Documentation facilitates a two-way communication with higher-level government and economic bodies, to influence policy. “PGIS has provided a new forum through which people can express their ideas of place and be involved in the development and management of resources” (Sørensen, 2009, p. 240). PGIS acknowledges those whom understand place the best in order to effectively provide cultural resource management policy.

The virtual landscape is not just in the hands of the professional now, but may be used as a cultural infrastructure tool for community empowerment. The use of maps and GIS are critical to the cognitive process of translating abstract plans into real world changes. Two technological programs, Virtual Landscape and Urban Strategy, provide visual communication
of the effects of future changes to the stakeholders, but require the production and presentation from an expert. However, the growth of second-generation internet provides a framework for placing the tools within the community’s hands. The sharing function on Google Earth is an example of ‘Web 2.0’ or second-generation internet technology. The internet now serves as a library in which people can upload information or data they wish to share or make available to anyone. Another adaptation of this has been through mobile application development. Virtual landscapes may be engaged through a mobile device, using a QR code to share the users current spatial data with spatial data assigned to the virtual model. Engagement of the community is sustainable design and planning is possible through the visualization of virtual models and inclusive data collection through second-generation internet.
CHAPTER III

METHODOLOGY

The historic urban landscape approach provides a framework in which to envision sustainable community development along the Fox Point waterfront. With a focus on local creative production and sharing, the strategies implemented require a reference to context and an involvement of local stakeholders. Due to the scope of the project, community input had not been included beyond the thorough database of local knowledge already collected through resources such as the Fox Point Oral History Archive and the Fox Point Oral History Flickr account. The United Nations Educational, Scientific and Cultural Organization (UNESCO) outlines several tools in which the historic urban landscape approach may be adapted to local contexts. These tools all call for a participatory approach by all stakeholders and are categorized as follows:

a) civic engagement tools

b) knowledge and planning tools

c) regulatory systems

d) financial tools.

Civic engagement tools focus on representing the diversity and setting visions that promote that diversity, but reflect a common heritage. Knowledge and planning tools include the documentation and mapping of cultural and natural characteristics, in order to facilitate a more informed decision-making process. The documentation should protect the authenticity of diverse values within the urban heritage. Regulatory systems may include legislative or regulatory measures for conserving and managing the urban heritage. Financial tools aim to
make the historic urban landscape financially sustainable through building capacities in innovative income-generation. Private investment at the local level should be supported along with government and global funds (UNESCO, 2011, p. 3-5). This project engages knowledge and planning tools within the historic urban landscape approach, while offering some suggestions towards carrying out the remaining three tools. Tools drawn upon for redevelopment of the Fox Point waterfront support the ensuing decision-making process, a critical component of the historic urban landscape approach.

This project develops knowledge and planning tools that exhibit the historical transformation of the Fox Point neighborhood from the context of a broader urban ecosystem. The following tools were utilized to more clearly understand the historic urban heritage: an overview on the history of Providence, development of a deep map and deep model, analysis of building typology, as well as a geographic information systems (GIS) inventory and analysis. The history of Providence, explores industrialization and deindustrialization of the city through a historian’s perspective, explaining much of the population and development patterns inherent to Fox Point. The deep map portrays a true sense of place by mapping the physical as well as experiential elements that have shaped the community in the past and most currently. This tool, created by the author, may further expand through more public entries on the internet resource Mapping Memories of Fox Point¹. Creation of the deep map for this project primarily serves as an individual’s design tool for understanding the complex layers within a historic urban landscape. The deep model serves as a volumetric 3-D model for exploring the historic urban fabric of Fox Point; telling of its industrialization and modernization. The model provides

¹ Mapping Memories of Fox Point: http://dev.stg.brown.edu/projects/digital_scholarship/fox_point/
a visual of the potential density and intricacy of built form that had once defined the neighborhood. The current built form is explored through an analysis of building typology, illustrating the various smaller communities within the entire Fox Point community. The building typology analysis serves as a reference of scale on building dimensions and material, as well as streetscape design. These models have been uploaded to the global SketchUp community as downloadable models\textsuperscript{2} and shared with the Providence Planning and Development Department. The GIS inventory extracts specific cultural, environmental, social, and economic layers for stakeholders to clearly visualize the forces that shape their community. Geospatial data is extracted under the following themes: neighborhoods, current zoning, auto-centric land, public transportation, population, open space, tree-canopy, potential oyster habitat, foodscape, buildings protected by the hurricane barrier, and cultural inventory. The maps provided in this project and shared with the Providence Planning and Development Department for addition to their public GIS layers and maps, as well as the Fox Point Neighborhood Association (FPNA). This project serves as one of the four categories of tools towards a historic urban landscape approach and sustainable community development for the Fox Point waterfront.

\textsuperscript{2} SketchUp models “Fox Point 1920” and “Fox Point 1956”
CHAPTER IV
INVENTORY AND ANALYSIS

Overview of Providence and the Fox Point Neighborhood

Providence has been built and rebuilt by her citizens many times creating a complex layering of different generations’ building needs, plans for civic growth, and architectural tastes. Providence’s streets and neighborhoods are not museum set-pieces; they exhibit all the variety which a long history and a diverse population have created (Woodward, 1986, p. 02).

The Fox Point neighborhood of Providence has a rich heritage shaped through the maritime industry, but its relationship with the waterfront has more recently gone through obscurity. The harbor rapidly grew in the 1790s to accommodate large ships from Oriental trade. The earliest streets, including Power (1738) and Wickenden (1772), filled quickly with development as the neighborhood prospered off of harbor activity and attracted waves of immigration. Fox Point became a transportation hub for Providence, as the first railroads in Providence connected to the waterfront of Fox Point for the Boston & Providence line’s first station in 1835. The waterfront remained industrialized with prominent companies including the Providence Steam Engine Company (1834), the Fuller Iron Works (1840) on Pike Street and the Providence Tool Company (1844) on Wickenden Street. The Fox Point neighborhood fostered many diverse entrepreneurs starting life in America.

The ethnic diversity of Fox Point is directly attributable to its working waterfront, providing a livelihood for waves of new Americans. An Irish community grew in Fox Point as Irish laborers immigrated to work on the Blackstone Canal and the Boston & Providence Railroad. The waterfront community of Irish immigrants became known as “Corky Hill,” intricately connected to the support of St. Joseph’s Church, erected in 1853. “Between 1876
and 1880, a 400-acre area south of Wickenden Street was condemned as part of a city plan for
regarding, highway adjustment, and slum clearance. Nearly 150 buildings were demolished or
moved, Foxes Hill was leveled, and most of the material excavated was used on the western
shore of the Seekonk River for fill; Gano Street was built on the new land” (Woodward 1986:
16).

The second wave of immigration began in the latter half of the nineteenth century when
Portuguese and Cape Verdeans fled their homelands. “By the end of the 19th century, almost
2,000 Portuguese immigrants had settled in the neighborhood, often crowded into low-income
rental units. Predominantly Catholic, this immigrant community eventually erected its own
church, Our Lady of the Rosary (1885)” (Woodward 1986: 16). The Cape Verdeans of Fox Point
worked primarily on the docks, hauling coal from the bottom of ships. Despite harsh working
conditions, Fox Point’s Cape Verdean community was some of the first Africans to come to the
Americas by free will. However, as had been done with the Irish slums that had formed before,
the Cape Verdean community was largely removed, beginning in 1966, with the construction of
Interstate Highway 195 (Andrade-Watkins, 2006). The lack of community involvement in the
planning process is evident from the origin-destination survey utilized to determine the
alignment of the Interstate. The single $50 million route, which would provide access to the
Central Business Districts of both Providence and Pawtucket, was decided through an origin-
destination survey and motorist desire lines to determine alignments for facilities of the
Interstate System (Brown, 2005, p. 30). The neighborhood has since built over the highway to a
degree, reconnecting with the waterfront through a pedestrian bridge connecting to India Point
Park, a public space running along the post-industrial waterfront.
The Renaissance of Providence has focused upon the urban waterfront, a strategy initiated through The Old Harbor Plan (1994) by local architect, William D. Warner. His vision has reengaged Providence’s waterfront by removing what was once the Guinness Book of World Records Widest Bridge, a parking structure spanning the polluted Providence and Seekonk Rivers, realigning the Woonasquatucket River along its natural course, construction of a River Walk and activation of the Providence River through Waterfire, a multimedia installation of fires illuminating the river (Ryan, 2006, p. 53). The latest revival of Providence’s waterfront has been the realignment of I-195, begun in 1997, and completing revival of the Providence River waterfront towards the Narragansett Bay. Demolition of the former I-195 and Washington Bridge has left a broad swath of open parcels, 8.36 acres lying between the Fox Point Neighborhood and the Providence River waterfront, known as the East Side Overlay District. The land currently lies as broad grass fields, awaiting redevelopment; serving as an opportunity to reflect a new culturally-rich society.

The building and rebuilding of Fox Point along with its vibrant cultural diversity has inspired the documentation of Fox Point community history through the John Nicholas Brown Center for Public Humanities and Cultural Heritage. This includes the archive of “Fox Point Oral Histories” initiated by Dr. Anne Valk. Anne’s course in oral history has led to student creation of over seventy-five interviews and digitization of Lou Costa’s collection of family photographs for public access online³. In addition to the biographies produced, an auditory collection of interviews depict the streetscape transformations that have occurred through “Speaking of

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³ Fox Point Oral Histories: <http://library.brown.edu/cds/foxpoint/>
This cell phone walking tour connects the past to the present Fox Point, in twelve tracks of interviews led by Brown University students in Anne’s Community Documentary and Storytelling course, downloadable as an audio file through iTunes. A third media utilized to document Fox Point’s oral history includes digital mapping. Two Brown University graduate students, Aliza Schiff and Rachel Binning, have utilized Google Maps to connect experiences to place through multimedia links. The website Mapping Memories of Fox Point provides five memory maps of various long-term residents to Fox Point. The maps combine links to historic images and statements associated with the interviewee’s experiences. Digital mapping provides a tool to connect these experiences to place, a useful planning and design tool. The John Brown Center has made an initiative of documenting the oral history of Fox Point in light of land use and demographic changes, which have significantly altered the neighborhood.

Fox Point was once strongly identified by its Cape Verdean community, but has since been displaced as an act of urban renewal in the 1960s and 1970s. The story of the vibrant community once residing there is captured in Claire-Andrade Watkins’s documentary “Some Kind of Funny Porto Rican? A Cape Verdean American Story” (2006). Craig David, a fourth generation Fox Point resident, describes the background of the title as coming from a misunderstanding of the Creole language spoken by Cape Verdeans and assuming that it was “some kind of funny Puerto Rican.” The title itself captures the clear lack of understanding of the distinct Cape Verdean culture and thus the community ties that had been established in Fox Point. The maritime industry along Fox Point waterfront was largely driven by the labor of Cape

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4 Speaking of Wickenden brochure: http://www.brown.edu/Research/JNBC/exhibits/Speaking%20of%20Wickenden%20brochure%20fin%20small.pdf
Verdeans, working hazardous jobs such as dragging coal from the bottom of ships. Racial tension was still very prevalent in the neighborhood and seen largely in the lack of support from the Catholic Holy Rosary Church. In response, Cape Verdean leaders established the Protestant Sheldon Street Church, gathering crowds outside the doors. Economic opportunities were very limited as recalled by Reverend E. Naomi Craig, a skilled shorthand typist, unable to receive a job because of the color of her skin. However, community resources such as the Providence Boys Club kept younger boys active and served as a resource for hot showers, when hot water was not available to everyone. Unfortunately, the Boys Club along with most of the Cape Verdean community’s connection to Fox Point had been erased with the construction of Interstate 195. “Urban renewal of the 1940’s, 50’s, and 60’s was synonymous with ‘Negro Removal.’ During this period in cities throughout the United States, large tracts of land were cleared for redevelopment and many African Americans were displaced to make room for highways, universities, large commercial developments, and new residential neighborhoods (Hyra, 2008, p. 3). The latest phase of urban renewal evident in the Fox Point Neighborhood has been gentrification. The neighborhood has largely shifted from working-class to middle-class and college student renters, attracted to the recent commercialization along Wickenden Street. The mixed-use development along Wickenden has grown in coffee shops, restaurants, and boutiques, but has also increased the surrounding rental rates, while catering services to a higher income population. This is what Hyra refers to as the “new urban renewal.” The Fox Point Neighborhood has been built and rebuilt, but how does this impact redevelopment of the ESOD area of Fox Point?
Deep Map of the Fox Point Neighborhood

The rich and intricate layers that shape the Fox Point neighborhood currently lie invisible to the expanse of a demolished freeway. With the goal of redeveloping sustainably, this project proposes a means of deep mapping the intricate culture embedded within the Fox Point neighborhood, as part of a proposed cultural infrastructure. The deep map reflects the true complexity of place by revealing not just the physical elements, but the experiences and people that help shape it. Temporal bounds are blurred as any city in its current state is a reflection of the multitude of actions over time that has occurred. This project develops a static deep map by merging historic maps along with the oral history images and statements documented through the following resources: Fox Point Oral Histories, Mapping Memories of Fox Point, Fox Point Oral History Flickr group, and Some Kind of Funny Puerto Rican (Fig. 06). This map serves as an initial investigation into the cultural layers of Fox Point, providing a two dimensional representation of the layers uncovered through oral history databases.
"When I speak about the old Boys Club, I speak with feeling. My first home was the Boys Club. I was kinda raised up in the Boys Club. We moved from Tockwotton Street to 255 South Main Street, almost directly across from the Boys Club. Now I have my own shower, my own swimming pool, I have my own gymnasium, all I got to do is walk across the street, from my house, to the Boys Club." - Johnny Boy Britto

"There used to be, we called them 'haunted houses.' They were abandoned houses on South Main Street. There were a bunch of them. And we'd go in there and we'd go to another place and get a chair and put in - we made little apartments out of them and - we'd go over somebody's house and take candy." - Johnny Costa

"We used to call it - we called it Colored People's Park, because that's the only place that hung out there, all us people of color. So it was Colored People's Park... And every Labor Day... there were moonlight dances." - Johnny Costa

"You know where the market, Friend's Market is still there? That was there when I was a kid. That's always been there. Across the street was Joe's Market. And he was Irish. So we shopped at the Portuguese market and the other people shopped at Joe's Market, but sometimes we would go to Joe's Market too if the Portuguese market didn't have what we wanted. In fact, when my father was sick, I went to the Portuguese market and just to a whim. I said, "Would you happen to have a gold crucifix with the I.N.R.I. over the head?" And they said, "Yes." My sister, my step-sister had been all over religious stores, everywhere she could think of to get this little, fourteen carat gold cross for my father. I walk in there and I walk out with it. I think it was like forty dollars. Cause my father wanted it cause he was dying." - Jean Correia

"The overpass is a very big psychological barrier. There is no doubt about that it is... The barrier - it was unfriendly... Artists started to paint murals there and made it more interesting, but even so psychologically it kind of separates us off and so many people just don't know about this area if they don't go to Ali Forno or they don't go to the Hot Club." - Cathy Bert

"[Holy Rosary was] where everybody really met. That was, I guess the magnet of the community. I would see everybody, you know, at church on Sundays. We had Sunday School classes which was teaching catechism and Catholicism. ... And after the services were completed we all went our ways. That was the day we all got to dress up in a new suit and new shoes, if we had new shoes. And we were pretty stiff... The old Portuguese people in my experience, the ones I knew, were pretty poor but they always had fifty cents or a dollar..."
INVISIBLE FOX POINT

According to Person and Shanks, deep maps are “rich collations and juxtapositions of the past and the contemporary, the political and the poetic, the factual and the fictional, the discursive and the sensual; the conflation of oral testimony, anthology, memoir, biography, natural history and everything you might want to say about a place” (Pearson and Shanks 2001: 64-5).
Deep Model of the Fox Point Neighborhood

In order to enable the rich oral history of Fox Point as a planning tool, it is critical to connect the people and experiences to space. The existing databases (*Fox Point Oral Histories*, *Mapping Memories of Fox Point*, and *Fox Point Oral History* Flickr group) geo-locate photographs and recorded statements to satellite imagery of current conditions. This project provides 3D models of the region associated with the ESOD area from 1920 and 1956, capturing two transformational periods in Fox Point’s history. These models are derived from the Sanborn Fire Insurance Maps, revealing intricate details about building location, building material, number of stories and building use. For each time period, 30 tiles of scanned 8.5” x 11” Sanborn maps were compiled in ArcGIS by georeferencing each tile to a polygon shapefile of the existing roadway network, developed by the Providence Planning and Development Department (Fig. 07). Minor adjustments had to be accounted for in the georeferencing due to the quality of some scanned tiles, a factor of shrinking and swelling of aging paper, resulting in uneven matching of images. A new shapefile was created for both the 1920 and 1956 building footprints. The model of 1920 (Fig. 08) captures the Fox Point neighborhood at the height of its industrialization, with blocks densely built up to three and four stories and each block composed of many series of buildings. Larger warehouse structures line the waterfront, reflecting the working waterfront, composed largely of coal and lumber companies. The model of 1956 (Fig. 09) captures Fox Point after the construction of the George M. Cohan Boulevard, part of an urban renewal project, resulting in the clearing of slums. As commonly seen across cities within the 1950s, the urban fabric begins to disintegrate as roadways expand and buildings spread apart with an overall decrease in urban population. The new ArcGIS layers
allowed for a visual comparison of building footprint changes from the 1920s, 1950s, to today (Fig. 10).

Figure 7: 30 tiles (8.5” x 11”) of Sanborn maps compiled and georeferenced in ArcGIS.
Figure 8: 1920 Building Footprint derived from georeferenced Sanborn maps. The current I-Way open parcels are highlighted in green. At the peak of industrialization, the Fox Point community is composed largely of an immigrant population living along the waterfront and renting apartments further up the hill. The waterfront drives Providence’s economy, serving as the primary port distributor to the rest of New England. Coal, wood, textiles, and scrap metal are the primary industries.
Figure 9: 1956 Building Footprint derived from georeferenced Sanborn maps. The current I-Way open parcels are highlighted in green. Housing rehabilitation efforts in the early 1960s lead to slum clearance and construction of the George M. Cohan Boulevard (this would eventually be replaced with the initial Interstate 195). The popularity of vehicles can be seen in the growing number of side garages, while the overall urban fabric declines, especially along the waterfront.
Figure 10: Current Building Footprint obtained from Providence Planning and Development Department. The current I-Way open parcels are highlighted in green. The current housing stock is old: there are 8 out of 10 units more than 50 years old as of 2010. More than two-thirds of all housing units are located in structures with three or more units. The primary residential fabric is rather dense, with approximately 10 dwelling units per acre. Including the waterfront into calculation, diminishes it to 4 units per acre.
The historical building footprints of Fox Point tell a convincing story of a disintegrating urban fabric, but begin to represent the place more accurately once extracted to three dimensions. The building footprints were extrapolated vertically according to the number of stories indicated on the Sanborn Maps through the program SketchUp. Each story was attributed 10 vertical feet, plus an additional 5 feet for the footing, making certain that the building provided contact with the Google Earth surface. Building volumes were then draped to their appropriate location on the surface and extended to meet the surface where buildings fell short. As a volumetric model, the buildings are reflect appropriate location, shape, and height, but omit details such as roof line, windows, doors, and surface treatment. Figure 10 reflects the various classifications of 3D models, recommending the level of reality and accuracy chosen based upon the purposes of the project (Kim, p. 8).

Figure 11: Reality and types of 3D models (Kim, p. 8).

Figures 12 and 13 capture screen shots of the models uploaded into Google Earth. As simple volumetric studies, these models loose definition when seen at eye level, but provide a broad understanding of the neighborhood’s building typology in the 1920s and 1950s consecutively.
Figure 12: Volumetric 3D model of buildings in Fox Point (1920). Uploaded as a KML.

Figure 13: Volumetric 3D model of buildings in Fox Point (1956). Uploaded as a KML.
Building Typology

The Providence Planning and Development Department emphasizes the significance of redeveloping the ESOD to fit in with the neighborhood’s building height and character. A majority of the buildings are old, with 8 out of 10 residential units over 50 years old in the 2010 Census, while the entire neighborhood is registered as a Historic District, requiring design acceptance among the City of Providence’s Historic District Commission. As part of the Providence 2020 Plan developed by Sasaki Associates, the current height restrictions within the ESOD are 45 feet along South Main and South Water Streets, then 75 feet along the working waterfront (Fig. 14). Sasaki proposes building height restrictions based on stories rather than height to provide more leniency towards some of the knowledge-based industries that require greater floor to ceiling heights. The total number of housing units in Fox Point equates to 2,304 units over 0.77 square miles, lending a density of nearly 3000 dwelling units per square mile (4.67 dwelling units per acre). However, the overall density of the neighborhood reflects a much lower value than the core residential neighborhood because of the vast expanses of vacant land and roadway infrastructure along Fox Point’s waterfront.

The building typology study reflects the Theory of Dérive, or drift, as part of a psychogeographic procedure. This method of study, developed by Guy Debord in 1955, explores the effects of the environment on conscious or unconscious thoughts and emotions, allowing one to observe the terrain and experiences with a more keen awareness to the encounters of that moment. The three routes exploring building typology begin in the three primary entrances into the ESOD of Fox Point; including South Water Street (orange), Benefit Street (green), and the Point Street Bridge (blue) (Fig. 15 and 16).
Figure 14: The top volumetric study reflects existing building height limits for downtown Providence. The bottom volumetric model reflects Sasaki’s proposal for height limitations based upon number of stories.
Figure 15: The three walking routes represent a dérive through the interior of the Fox Point neighborhood, as a response to the environmental nuances.
Figure 16: The green route is composed largely of two-story residences, largely in the Federal Style, with narrow tree-lined streetscapes. The orange route represents the oldest part of the neighborhood, from the waterfront, which is largely vacant now, to the residences and Sheldon Street Church, which have been established for over 50 years. The blue route reflects the part of Fox Point which has gone through the most transformation. Lying on the precipice of residential and a once working waterfront, this route reflects increased transportation corridors, more recent three-story housing, and a commercialized Wickenden Street, home to many college students.
GIS Inventory

The geospatial analysis reflects the existing environmental and social systems that shape the Fox Point neighborhood today (Fig. 17). Data was obtained as ArcGIS shapefiles through the Rhode Island Geographic Information System (RIGIS) and the Providence Planning and Development Department, and projected through the NAD 1983 Rhode Island Stateplane coordinate system. The following inventory is conducted in relationship to the basis of planning decisions, the current zoning (Fig. 18). These dedicated land uses have tremendously influenced three spatial realms that will be laid out accordingly: transportation, open space, and buildings.

Figure 17: Providence neighborhoods.
Figure 18: Current zoning of Fox Point reflects primarily a residential neighborhood. Corridors of commercial activity occur along Wickenden St, South Water and South Main Streets, as well as Ives and Gano Streets. The working waterfront is largely underutilized, but the remaining waterfront is dedicated to open space.

The intricate web of streets in Fox Point reflects the historic development of the neighborhood, but expands in scale to serve regional corridors along the waterfront. The broad expanse of undeveloped land along the waterfront has facilitated the conversion of properties.
into parking lots. An inventory of land dedicated to automobiles, including roadways, parking lots, and driveways, accounts for a total of 38% of the land area, bearing a dominant presence (Fig. 19). Fox Point is serviced by three public transit lines along its roadways. The most

**Figure 19:** Inventory of space dedicated to the automobile, including roadways, parking lots, and driveways. The surfaces were traced from 2011 RIDEM Orthophotography, as a new shapefile.
predominant is the Green Trolley Line circuiting every 20 minutes. The trolley lines in Providence are actually buses designed to appear more similar to the trolleys that once traveled up and down Wickenden Street. South Main Street and South Water Street are served by two looping routes that travel from Kennedy Plaza to Riverside and East Providence with a frequency of 30 minutes (Fig. 20). Based upon Transit Oriented Development (TOD) principles, the design of mixed-use neighborhoods with maximized access to public transit, the Fox Point neighborhood is inadequately served by public transit based upon its population density. A majority of the census blocks average approximately 50 people per acre, with a couple of blocks averaging 80 per acre (Fig. 21). These benchmarks, in terms of TOD, are equivalent to suburban conditions, which can feasibly support local bus transit as well as express bus transit, which the neighborhood lacks (FDOT, p. 5). Given that this neighborhood is adjacent to downtown Providence, redevelopment should strive for urban general standards under the TOD guidelines, which includes 100 people per acre, 15 dwelling units per acre, and supported by rapid bus transit. By combining the ESOD with abutting vacant parcels and parking lots, a total of 43 acres (0.06 square mile) could support an additional 1,482 residents by 2030. Redevelopment should respect the character of the existing neighborhood, but plan to accommodate population growth and increased density.

While density increases, the amount of planned open space should increase. Large swathes of waterfront parks line the waterfront with the newly proposed parks along the Providence River, as well as India Point Park lining the Narragansett Bay and Gano Street Park along the Seekonk River (Fig. 22). The Rhode Island Statewide Greenway Plan highlights the
Figure 20a: Wickenden Street trolley being transferred out of Rhode Island.

Figure 20b: The current Green Trolley Line that runs through the Fox Point neighborhood.
Figure 20c: Public transportation services for the Fox Point neighborhood. All three lines are on-street bus lines.
Figure 21: The uppermost map represents the total population per census block. Fox Point residents totaled 4,867 persons as of the 2000 Census. As derived from the RI Statewide Planning Population Projections, Providence anticipates a 6.2% population increase by 2030. Fox Point should plan to accommodate at least 300 additional residents at the minimum by 2030. The lower map reflects the neighborhood’s average density of approximately 50 persons per acre.
entire waterfront along Fox Point as a significant greenway corridor. The neighborhood does not currently boast a bikeway, but is at the juncture of the East Bay Bike Path and the nearing Blackstone Valley Bikeway, with the potential to link downtown Providence to over 26 miles of bikeway. While the core of the residential Fox Point neighborhood boasts little open space, an analysis of the tree cover reveals adequate canopy coverage for a pedestrianized streetscape (Fig. 23). However, if the entire neighborhood is taken into account, the entire canopy coverage is only 10.7%, reflecting a need to increase tree plantings beyond the residential neighborhoods. This holds the potential to frame views out to the waterfront.

As a means of connecting residents back to the waterfront in an active way, interest in oyster farming has been rising. Bay restoration efforts have seen the significant role that oysters play in their ecosystem and Providence, which once had streets lined with oyster carts, significantly lacks oyster reefs. The decrease in oyster reefs has partly been a result of overfishing, but has also greatly decreased due to inhospitable environments. The heavy industries along Providence’s waterfront in the 1920s have led to unsafe levels of lead, mercury, copper and other heavy metals. Increased sedimentation, largely an effect of increased impermeable surface coverage, has also made oyster reef production difficult. However, a recent study conducted by doctoral student Carrie Byron of the URI Department of Fisheries, Animal and Veterinary Science found that the Narragansett Bay could support the growth of 1.3 tons of oysters per acre, where only 0.002 tons of oysters per acre are currently harvested. (URI, 2010, p. 1). As a product of GIS analysis, Brown student Amy Nau, produced a study on potential habitat restoration of Eastern oysters in the Narragansett Bay, based upon salinity, dissolved oxygen, depth of water, and water quality (Fig. 24). Most of the shoreline
opens to the Narragansett serves as adequate habitat for oyster cultivation, with quality
decreasing off shore due to depth and deposition of chemicals and sediments. Oyster farming
has been seen as an effective means towards bay restoration, with strong programs within the
Chesapeake Bay due to the oyster’s ability to filter 50 gallons of water per day. It is estimated
that we have lost 85% of oyster reefs, which includes a loss in ecosystem services such as water
filtration, reduced erosion, wave dissipation, and storm surge. Although a long-term goal
because of remaining pollutants within the Bay’s sediments, oyster farming may support the
local economy. Envisioning a future where urban waterfronts are productive and healthy
environments is in reach. Fox Point’s waterfront should continue to support the economic
livelihood of the neighborhood through ecosystem services and through a productive working
waterfront.

While oyster farming would not provide a safe food source for another generation, the
concern for access to fresh food has been expressed by Fox Point residents. This concern came
out in an intensive week of many public meetings, a result of the new citywide plan, Providence
Tomorrow. The Eastside Marketplace and Friend’s Marketplace are still owned by Portuguese
Fox Point residents, but do not adequately serve the needs of the entire community (Fig. 25).
The Fox Point Community Garden serves as a very successful asset, but once again, could use
expansion to serve a greater population. The community has raised the suggestion of utilizing
the open I-Way parcels for urban agriculture until they are developed. This could provide an
asset beyond food production to the neighborhood, as many of the waterfront buildings are at
risk of flooding if the hurricane barrier fails (Fig. 26, 27). Safe to fail inundation zones along the
waterfront could provide security for waterfront redevelopment. The community has been well
defined by its institutions, beginning with churches for incoming immigrant groups and most
dominant now, university based institutions (Fig. 26). While all of the institutions have
maintained a presence, the presence has shifted towards the knowledge based institutions. The
city of Providence has coined the term “Knowledge Corridor” for the open I-195 parcels,
reflecting its growth in the creative and knowledge based economy. The multitude of spatial
GIS layers combine to form a complex Historic Urban Landscape.
Figure 22: Open space, park space, and bike paths for a green infrastructure through Fox Point.
Figure 23: Tree canopy study of the Fox Point neighborhood. The canopies were digitized as a shapefile in ArcGIS, using 2011 RIDEM True Color Orthophotography.
Figure 24: Potential habitat for restoration of Eastern oysters (Crassostrea virginica) in Narragansett Bay, RI.
Figure 25: Foodscape inventory of Fox Point (data obtained through “grocery” search under mapquest.com and googlemaps.com).
Figure 26: Buildings protected by the Hurricane Barrier.

Figure 27: Fox Point Hurricane Barrier.

Fox Point Hurricane Barrier
- Authorized by the Flood Control Act of 1958.
- Protects against storms 20 feet above sea level.
- Protects several hundred million dollars of Downtown property in a 280 acre area.
- Central business district located in shallow basin with an elevation of 8 to 12 feet above mean sea level.
- Size: 3,000 foot-long, 25 foot high
Figure 28: Cultural institution inventory (identified through Fox Point Oral History Archive).
CHAPTER V

PROPOSAL: CULTURE TO THE POINT

Redevelopment of the ESOD increases public open space along the waterfront, while also adapting mixed-use infill development and increased density to fuel creative collaborations, which have shaped the Fox Point community in the past. The proposal for redevelopment of the ESOD will be referred to as *Culture to the Point*. Study of the area has shown how critical the waterfront was for Fox Point’s history, serving as a means of employment, as well as enjoyment. The churches served as cornerstone institutions for the community in the twentieth century, and while still present, play less of a defining role. Defining the culture of the waterfront today, must address the increasing presence of academic institutions, especially Brown University, due to its proximity, and the broader citywide goals for a Creative Economy. The role of culture is evident is building sustainable communities. *Culture to the Point* seeks to instill an infrastructure for cultural development, post-freeway, along the waterfront of Fox Point.

Development of the design proposal began with a layering of the inventory and geospatial data gathered for a composite analysis. The determinant factors in developing a proposed urban form included building footprints from past and present, urban open space and potential links, links and nodes for pedestrian interaction, as well as the current land use modified for permissible land use of either form within 150’ feet of the boundary (Fig. 29). The current building foot is combined with the 1920 building footprint, representing the least dense and most dense periods of development appropriately. The current zoned patches of open space remain distinct from one another. However, to embrace the potential of a greater green
infrastructure network, connecting to over 26 miles of bikeway, the patches are connected by
tree-lined sidewalks and additionally zoned open space along the waterfront. Connections to
and from the buildings and open spaces are studied through the potential links. The streets and
sidewalks that connect the neighborhood provide opportunities for spontaneous occurrences
and awareness of new ideas. These links support safe pedestrian travel, the greatest mode of
transportation for community interaction. The opportunity for interaction and collaboration are
increased at the intersections, where gathering spaces and a mix of uses are encouraged. The
blurring of clear land use boundaries provides a zone of transition between neighborhoods,
increasing collaborative opportunities. The predominant land uses along the waterfront
determine three different waterfront redevelopment approaches. Proximity of open space and
the Providence River to the core residential area suggests best use as a passive recreation and
leisurely waterfront. The merging of Point Street Bridge and Wickenden Street acts as a
prominent boundary, but also serving as the primary corridor into Fox Point from the greater
city of Providence. The current core of commercial storefronts and restaurants that line
Wickenden Street reflect this. Luckily, this may serve as the most useful point to disseminate
cultural Fox Point’s cultural creativity and production, by redeveloping the waterfront near
Wickenden Street as a tourist based waterfront. The third waterfront, facing the Narragansett
Bay has been long rooted as a working waterfront, including wharfs, shipyards of coal and
lumber, and train lines. While these industries have since departed from Fox Point’s waterfront,
there is a potential to re-work it through environmental remediation and new industry. The
concept for Culture to the Point emerges from the three redevelopment approaches; play, visit,
and work to reengage Fox Point’s waterfront.
The first zone of waterfront redevelopment has been categorized as “play,” focused on passive recreation as well as a commercially active streetscape (Fig 30). The rezoning of the ESOD incorporates parks on both the East and West sides of the Providence River connected by a pedestrian bridge that crosses the footings from the former freeway. In *Culture to the Point*, the waterfront park expands the topography, which currently drops three feet immediately along the shoreline, to increase the range of habitat and water filtration before entering the river (Fig. 28a). At the same time, a greater expanse of a “natural” realm is created, to provide residents with the benefits of a restorative environment. The mixed-use buildings along South Water and South Main Street reflect much more of the streetscape prior to freeway development, as can be seen further north on the streets, where Interstate-195 did not interfere. The buildings proposed are 3-4 stories in height, to fit in with the historic character of the neighboring buildings. As requested within the ESOD design guidelines, the ground-floor maintains transparencies of at least 50%, as well as a priority on retail and restaurant use. The upper stories serve primarily as residential space, but may serve for office space along the second story. Vehicular circulation along South Water and South Main Streets are both one-way, with traffic heading South on South Water Street and North on South Main Street. South Water Street accommodates pedestrians with wide tree-lined sidewalks and a broad strolling park that connects to the Providence Riverwalk leading into downtown. This part of Fox Point’s waterfront serves as the leisure waterfront, accommodating the dense core of nearby residents.

The central waterfront acts as the tourist waterfront, including a hotel, parking garage, and concentrated commercial activity along South Water Street (Fig. 31a and b). Currently, a
couple bars and restaurants exist along the water’s edge with docking for boaters. These buildings are surrounded by vast parking spaces, but would be much better served with infill of single-story restaurants, offering a direct visual of the new I-Way Bridge, the smoke stacks of Dominion Energy, and the downtown, all iconic landmarks within the Providence landscape. Commercial activity is supported by the sitting of a hotel, with a capacity of 150 rooms and a floor area of 70,000 square feet. The hotel is easily recognizable along Interstate-195 and offers immediate access from the freeway’s off ramp. The off ramp unfortunately acts as a barrier for the neighborhood from accessing the Providence River’s waterfront, so a proposed pedestrian bridge spans the roadway, connecting public open space to a small park in front of the hotel. This bridge serves as an icon for pedestrian mobility as the I-Way Bridge does for regional transportation. The peak of its arch provides a clear view to the downtown skyline and matches the historic location of Foxes Hill, prior to its excavation for the George M. Cohan Boulevard. The bridge provides convenient access to the waterfront for visitors, by connecting to the three-story parking garage. The structure is located to serve as a sound barrier from the highway and bridge traffic, which has been brought up as a concern in public meetings. The garage’s height matches adjacent residences and is softened in appearance with a dense row of trees between the sidewalk and building. A bus rapid transit (BRT) bus lane is proposed down Benefit Street, providing a direct connection for visitors and commuters of Fox Point, from the hotel and parking garage, directly into the downtown. Effective transportation is critical to a mixed-use community and for bolstering a tourist based economy. Benefit Street provides a peak into the historic fabric of the Fox Point neighborhood, without cutting directly into the residential core. Increased tourism coincides with a cultural infrastructure by supporting local
cultural production of identity, while encouraging the sharing of that knowledge with the broader regional community.

Fox Point’s third waterfront reflects the working waterfront facing the Narragansett Bay, as it has historically served. While prior industries along the waterfront were rather dangerous and unsightly, including coal and lumber yards, the new working waterfront builds off of the knowledge economy and the productive capabilities of ecosystem services along the water’s edge. South Main Street serves as a primary corridor for many of Fox Point’s residents, as opposed to South Water Street’s connection with the more regional community. A viewshed across the bay is framed from South Main Street with a restaurant to upon the Shooter’s Site (a former nightclub) to the west, and a marine environmental lab to the east (Fig. 31b). The marine studies may benefit from researching the effect of oyster-farming on ecosystem health along Fox Point’s waterfront. Many industries and urbanization have polluted the waters since construction of the first port in 1680. Environmental restoration, especially for oyster reefs, has become a nationwide concern and may grow with the strong institutional presence of Brown University and University of Rhode Island. Oyster-farming may engage a broad range of citizens and in time serve as a productive landscape. South Water Streets view towards the bay is framed by an open courtyard in between a spanning facility for institutional and commercial creative inoculation. As the Creative Capital, Providence maintains a strong presence of young minds attending prominent institutions such as Brown University, Rhode Island School of Design, and Johnson and Wales University. However, the city rarely maintains these short-term residents and has been working to encourage their stay after education. The Creative Economy supports this through small and creative entrepreneurs, creatively and financially enabled
through strong institutional and commercial collaboration. The facility encourages the dynamic intermixing of individuals, leading to innovative solutions and a positive environment for incubating business. Approximately 1.5 acres are preserved as open park space on the southernmost tip of Fox Point, providing idyllic views across the Bay and serving as large enough of a gathering space for large professional conventions, farmer’s markets, or an outdoor lunch-break served by food trucks. Restoring the cultural productivity of the Fox Point waterfront also requires addressing the environmental degradation wrought upon the Narragansett Bay.

The generation of perspectives, sections, and diagrams illustrate the details within the plan for Culture to the Point, as a means of providing envisioning tools for the community. Perspective A (Fig. 32) illustrates the transition of Benefit Street from a broad roadway, to a multi-function transportation corridor, connecting to the commercial and proposed mixed use along Wickenden Street. South Main Street (Fig. 32 – Perspective B), once blockaded by the interstate, is now open for habitation with an activated streetscape and residence on upper levels. Perspective C (Fig. 33) is currently an expansive parking lot, but the proposal calls for infill apartments and bioretention swales along the broad roads. Historically, sedimentation has been typical at the mouth of the Providence River due to fluvial deposition (Fig. 33 - Perspective D). The proposal embraces this with a vegetated waterfront edge. The section (Fig. 34) illustrates the mixed-use development proposed along South Water and South Main Streets. An increase in residential units is combined with open space, restaurants, stores, and institutional space for cultural development. Inner courtyards are created by building footprints for private space, while the connection to the waterfront park offers open space to the broader public. The
streetscape becomes activated with stores and restaurants, where pedestrians can stroll along tree covered pathways and diners eat below awnings, to look upon the Providence River. The cultural infrastructure of the Visit waterfront is extracted to demonstrate the various spatial constructs. Plazas and squares provide broad paved surfaces for gathering with the potential for dining along the edge and musical or artistic performances in the center. The park spaces offer walkways with majority of softscape or open lawn. These spaces are more conducive to leisurely observation of the environment, connecting one to their surroundings, or the gathering of small groups for discussion or playful bonding. The pedestrianized streets are most active along the edges with visitors coming in and out of stores or dining outside. However, the center of the street provides at least 15 feet for the spontaneous gathering of street performers, as well as mobile food or creative good vendors. These spaces together are fueled by the direct access of Fox Point residents providing cultural goods, the continuous waterfront greenway, and the bus rapid transit service that connects directly to downtown Providence. Success of a cultural infrastructure is contingent upon space available to not only create, but to share with the entire public.
Building Footprints

The current building foot combined with the 1920 building footprint, representing the least dense and most dense periods of development appropriately.

Open Space

The zoned patches of open space remain distinct from one another. To embrace the potential of a greater green infrastructure network, connecting to over 26 miles of bikeway, the patches are connected by tree-lined sidewalks and additional public park space.

The Links

The streets and sidewalks that connect the neighborhood, provide opportunities for spontaneous occurrences and awareness of new ideas. The greatest chance of this collaboration is provided at the intersections, where gathering spaces and a mix of uses are encouraged.

Merging Land Use

The blurring of clear land use boundaries, provides a zone of transition between neighborhoods, increasing collaborative opportunities. The predominant land uses along the waterfront determine three different waterfront redevelopment approaches.

Figure 29: Analysis of compiled inventory.
Figure 30: Waterfront redevelopment has been common among deindustrialized cities, searching for a new use of these vacant lands. Common rehabilitation strategies have been for passive recreation, regional tourism and modern maritime industries. The proposal for Culture to the Point adapts all three concepts in response to their historic function.
Figure 31a: Northernmost proposal for *Culture to the Point*. 
Figure 31b: Southernmost proposal for Culture to the Point.
Figure 32: Perspective A illustrates the transition of Benefit Street from a broad roadway, to a multi-function transportation corridor, connecting to the commercial and proposed mixed use along Wickenden Street. South Main Street (Perspective B), once blockaded by the interstate, is now open for habitation with an activated streetscape and residence on upper levels.
Figure 33: Perspective C is currently an expansive parking lot, but the proposal calls for infill apartments and bioretention swales along the broad roads. Historically, sedimentation has been typical at the mouth of the Providence River due to fluvial deposition (Perspective D). The proposal embraces this with revegetation of the waterfronts edge.
Figure 34: The section illustrates the mixed-use development proposed along South Water and South Main Streets. An increase in residential units is combined with open space, restaurants, stores, and institutional space for cultural development. Inner courtyards are created by building footprints for private space, while the connection to the waterfront park offers open space to the broader public. The streetscape becomes activated with stores and restaurants, where pedestrians can stroll along tree covered pathways and diners eat below awnings, to look upon the Providence River.
Figure 35: Detail of cultural infrastructure.
CHAPTER VI

CONCLUSION

Historic Urban Landscape Approach to Sustainable Design

Cities have been built and rebuilt, through the values and understandings of that time, and the Fox Point neighborhood is at the cusp of rebuilding its waterfront. The construction of Interstate-195 clearly disrupted the community’s tie to the waterfront, but may be reconsidered with its new alignment. The proposal for a cultural infrastructure looks to the past for lessons from a culture lost, but aims to rebuild a community that continues to redefine and transform a culture of its own. This project utilizes the historic urban landscape approach to frame the initial tools towards building a sustainable community through cultural infrastructure. A series of knowledge and planning tools aim for a more informed decision-making process, before proposals for redevelopment are made. In response, to those tools developed, urban design principles of density, mixed-use, public open space, and a multi-modal transportation, all aid in a proposal for redevelopment of Fox Point’s waterfront. The proposal for Culture to the Point, responds sensitively to urban heritage and cultural development, but in its principles requires the feedback of invested stakeholders. Cities and cultures are continuously changing, but what makes them alive is when the diversity of values may be passed on to future generations; then we have achieved sustainability and an American heritage.

This research contributes to the knowledge of sustainable urban design and planning, as well as cultural heritage planning. The urban freeway presents a new frontier for which cities across America have begun to grapple with and will require adequate design and planning to
rebuild communities in their place. Due to the context specificity of this project, it is significant to evaluate the particular successes and failures and the lessons that may be applied elsewhere. First, the efficacy of virtual 3D models depend upon the detail and accuracy match their intended application. The historic models generated for Fox Point, served as simple volumetric models, representing box forms. While the intent of the model was to reveal the invisible factors to which shaped the community, the volumetric model becomes too abstract and does not adequately tell the complex history of a place. It mostly revealed how drastically the urban landscape may transform based upon the ideals of that particular time period. With further investment however, this may serve as a tool for creating a more realistic 3D model of the historic neighborhood, by extracting building facades from photographs and applying them to the volumetric models. While the virtual 3D model did not impact the proposal for Culture to the Point drastically, it serves as a tool for cultural infrastructure in the future.

Community participation in the documentation of Fox Point’s oral history has been strong through the support of many residents concerned about the loss of an entire Cape Verdean community to urban renewal. This is further supported through Dr. Anne Valk’s research and student participation at Brown University, as well as Claire Andrade Watkins’ documentary “Some Kind of Funny Porto Rican? A Cape Verdean American Story.” It is significant to recognize that this is a resource not available on hand to every community, but may serve as a reference for documenting oral histories of other historic urban heritage. Techniques of documentation and distribution of information that have proved especially successful have geolocated the information. Oral history is tied to place, so connecting the two allows one to better understand the context according to the environment today.
The proposed plan largely responds to urban design principles and those for a mixed-use community, but incorporates culture as a determinant in structuring the neighborhood. The physical form responds to the historic connections to the waterfront, reviving a non-existent culture. However, the uses do not directly emulate its history because it has not been a living culture, but adapts to modern urban living, while learning from history on best land use and urban form. Waterfront industry builds off of resource creation, as opposed to resource extraction, and concentrated slums transform to high density, mixed-income housing. The plan could be further developed through an inventory of cultural values of the neighborhood historically, compared to those of its citizens today, which the Fox Point Neighborhood Association may facilitate. In accordance with community cultural development, this plan is not absolute, but a foundation based upon cultural development, for which residents may respond.

Culture to the Point addresses the specific locale of Fox Point Providence, but this project also addresses the concern of our aging urban freeways nationwide. Urban freeways were once considered the community bulldozer, but are more recently being considered as assets toward urban redevelopment. In a place traumatized by community removal and erased of its history, there is an opportunity to build anew, based upon the most recent understandings of sustainable development. Urban freeways have come and gone, but how can we build communities that will prosper in their place? Cultural infrastructure builds a community connected to place, creatively growing to the demands of tomorrow.

Carrying the historic urban landscape approach further for the Fox Point community would imply further development upon the three other tools, including: civic engagement, regulatory, and financial. While the scope of this project has focused on the development of
tools towards knowledge and planning, all four tools are intricately interrelated, and steps
towards implementing knowledge and planning will benefit the entire approach. Civic
engagement may continue to increase by engaging residents to design their community and
share drawings, ideas, and visions through the Fox Point Oral History group. Redevelopment of
the ESOD is in the hands of the I-195 Redevelopment Commission headed by Chairman Colin
Kane, but should continue to engage the Fox Point Neighborhood Association (FPNA) and
community through further design charrettes and an internet webpage to update the
community on meeting times and discussion. Regulatory tools have begun with the Providence
Planning and Development Department’s administration of design guidelines, for which must
be abided. These could be expounded to support the physical design of cultural development
centers, with design guidelines for collaboratively owned spaces. In addition, incentives could
be established for property owners to reserve a percentage of property area for creation of
plazas or pocket parks. New York’s Paley Park is a prime example of privately owned public
space, offering only 4200 square feet and yet one of the most active urban spaces. Capacity
building may begin with development of a hotel and increased tourism, but will require further
creative development to continue sustainably. Seed money towards public art studios and
oyster-cultivation will begin to pay off with support of a tourist economy. Implementation of
the historic landscape approach may build off of the many tools and incentives already in place.

Recommendations on HUL Implementation

This project has been developed as a guide towards a culturally sustainable society, for
use by all stakeholders. The GIS Inventory maps may be added to Providence’s Planning and
Development Department’s Map Gallery with a subheading specific to the East Side Overlay District. Their website may also widely share the Google Earth KML file for historic building models of the ESOD. The department may also embed a Google Earth link directly into the website, allowing anyone with computer access to experience the model without downloading any software. It is recommended that the Fox Point Neighborhood Association begin documenting and sharing the community’s visions for the Fox Point waterfront, encouraging the creative envisioning, including drawing, photographs, stories, or any other means of expression. The Interstate-195 Redevelopment Commission should continue to engage the community, but more by encouraging community design charrettes or a website for public feedback. Communication tools such as Twitter or creation of a blog would provide the most transparent and widely accessible platforms for maintaining an informed community. Amongst all, collaboration and increased communication among all stakeholders is the most critical towards sustainable community development.

Further Research

This project explores the role of culture in redeveloping the post-freeway landscape. There are many possible routes on which to expand upon this research. There is a critical need to understand the challenges toward implementing cultural policy in American cities. Currently, the research upon the significance of cultural policy is present more recently being implemented worldwide, but implementation in American cities have been limited. However, cities have begun engaging policy towards creativity and knowledge and there is a need to investigate whether these lead to cultural production and sharing. For this neighborhood in
particular, realignment of I-195 was considered the best option due to regional traffic demands and the need to broaden turning curves to meet regulations. However, as more and more urban freeways fall under the discussion of rebuild or remove, there is a need to understand how to value heritage within the discussion. A greater understanding of these factors supports sustainable community development as well as the development of our common heritage.


Kim, Dohyung. 3D visual urban simulation: methods and applications. Department of urban and regional planning. California state polytechnic university – Pomona.


