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Waste, Race, and Space: Urban Redevelopment and Environmental Justice in Bayview-
Hunters Point

By
Lindsey Lehmann Dillon

Dissertation submitted in partial satisfaction of the
requirements for the degree of
Doctor of Philosophy
in
Geography
in the
Graduate Division
of the
University of California, Berkeley

Committee in charge:
Professor Richard Walker, Chair
Professor Jake Kosek
Professor Donald Moore
Professor Michael Watts

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Waste, Race, and Space: Urban Redevelopment and Environmental Justice in Bayview-

Hunters Point

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Lindsey Lehmann Dillon

Abstract

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Remediating and redeveloping polluted, industrialized land has emerged as a significant urban growth strategy in U.S. cities since the 1990s. In the same historical moment, the U.S. military has sought to close and transfer hundreds of military bases to cities – part of a process of “shutting down the Cold War”. In California, many of these urban military bases were once destinations for African Americans leaving the Jim Crow south during World War II. In the postwar decades, many of the neighborhoods surrounding these military bases have struggled with multiple forms of racism and urban neglect, including health inequalities from toxic urban environments. This study examines the articulation of waste, race, and space in the Bayview-Hunters Point neighborhood of southeast San Francisco, which surrounds the Hunters Point Naval Shipyard. Once a space of hope and opportunity for black migrants from the south, the shipyard today is understood as an unhealthy, threatening, and sometimes violent site for many long-time Bayview-Hunters Point residents. At the same time, since the 1990s the Hunters Point Shipyard has emerged as a profitable landscape for developers, banks, environmental engineering firms, and a terrain on which social groups in San Francisco imagine and struggle over the future of the city. Through five empirical chapters, I examine the cultural politics of polluted urban land in Bayview-Hunters Point today, focusing on the Hunters Point Shipyard and its neighboring industrial waterfront. At the analytical level, I argue that focusing on the materialities and social relations of waste offers a critical lens onto the urban process.

For Jeanne Dillon

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GLOSSARY

AEC	Atomic Energy Commission
BAAQMD	Bay Area Air Quality Management District
BCDC	Bay Conservation and Development Commission
BRAC	Base Realignment and Closure
CAC	Citizens Advisory Committee
CERCLA	Comprehensive Environmental Response and Liabilities Act
CETA	Comprehensive Employment and Training Act
EIR	Environmental Impact Report
EOC	Economic Opportunity Council
EPA	Environmental Protection Agency
LEJ	Literacy for Environmental Justice
NPC	Neighborhood Parks Council
NRDL	Naval Radiological Defense Laboratory
PUC	Public Utilities Commission
QGI	Quesada Gardens Initiative
RAB	Restoration Advisory Board
RBCA	Risk-Based Corrective Action
PAC	Planning Area Committee
PG&E	Pacific Gas and Electric
SAEJ	Southeast Alliance for Environmental Justice
SPUR	San Francisco Planning and Urban Research Association

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Introduction – “We got the bad air, but we don’t have the jobs”

On a warm evening in August 2011, the U.S. Navy held its monthly public meeting for the Hunters Point Naval Shipyard hazardous remediation project at the Asian Pacific American Community Center, in southeast San Francisco. It was an unusual site for the Navy’s meeting, which has been held at community centers in the Bayview-Hunters Point neighborhood for over eighteen years. The Asian Pacific American Center is located south of Bayview-Hunters Point, in an area called Visitacion Valley, known for a large Southeast Asian community¹. Bayview-Hunters Point is a historically black neighborhood, at least since the 1960s, and the shipyard is, for many long-time residents, an important part of their family histories.

During the 1940s and 1950s, tens of thousands of African Americans arrived in San Francisco from Jim Crow south – many to work at the Hunters Point Shipyard. They left as part of a larger migration: between 1910 and 1970, over six million African Americans left rural southern states for northern and West Coast industrial cities (Wilkerson 2010). They sought jobs, followed family members, and anticipated a better life in the West. Pulled to military boomtowns like Richmond, Oakland, and San Francisco during and after World War II, they brought music, culture, politics, and memories from the south (Angelou 1964, Johnson 1996, Moore 2001, Jelly-Shapiro 2010). In San Francisco as in other cities, these hopeful migrants found new opportunities and also new forms of racism. After the war ended, they stayed to build lives and communities even as the shipyards slowed their operations and other manufacturing jobs became scarce. In Hunters Point, their children grew up in the shadow of the shipyard, on streets with names like Navy Road. The military had transferred its barrack-like housing units to the San Francisco Housing Authority after the war, and many of the units remain inhabited today. Yet by the 1960s, the local, black-owned newspaper, *The Spokesman*, railed against the Housing Authority for its racialized neglect of public housing in Hunters Point, and against the San Francisco Redevelopment Agency for its empty promises to build better homes. “The difference between the Redevelopment Agency, the Housing Authority, and the police departments”, editorialized the paper with its typical acerbic wit in 1967, “is that one will kill you quickly, the other will leave you to the rats and the other one, the Redevelopment Agency, will just leave you” (*The Spokesman*, January 7, 1967). In grouping city agencies like the Housing Authority together with the police department – only a year after a black teenager was shot in the back by a police officer on Navy Road – *The Spokesman* called attention to multiple forms of racial violence.

In the 1970s, the waterfront north of the shipyard became a landscape of vacant industrial lots, interspersed with auto-wrecking yards and open-air storage of industrial

debris. A power plant, just north of the shipyard, sent toxic particulates upwards to public and subsidized housing units on Hunters Point hill. Southeast of the shipyard, the city released its sewage into the San Francisco Bay through an outlet called Yosemite Slough – a former salt marsh that was filled with construction debris between the 1940s and 1970s. The shipyard shut down in 1974, but leased parts of the military base to metals and private ship repair companies, which continued to pollute the bay with hazardous industrial wastes. The former Naval Radiological Defense Laboratory, which had operated on the shipyard between 1946 and 1969, had left its radioactive byproducts in unlined landfills on the base, near Yosemite Slough. Today, many residents in Bayview-Hunters Point connect cancers and other health problems in their families with the hazardous waste at the shipyard and with pollution throughout the industrial southeast, and situate these toxic environmental conditions within a broader experience of racism in the city.

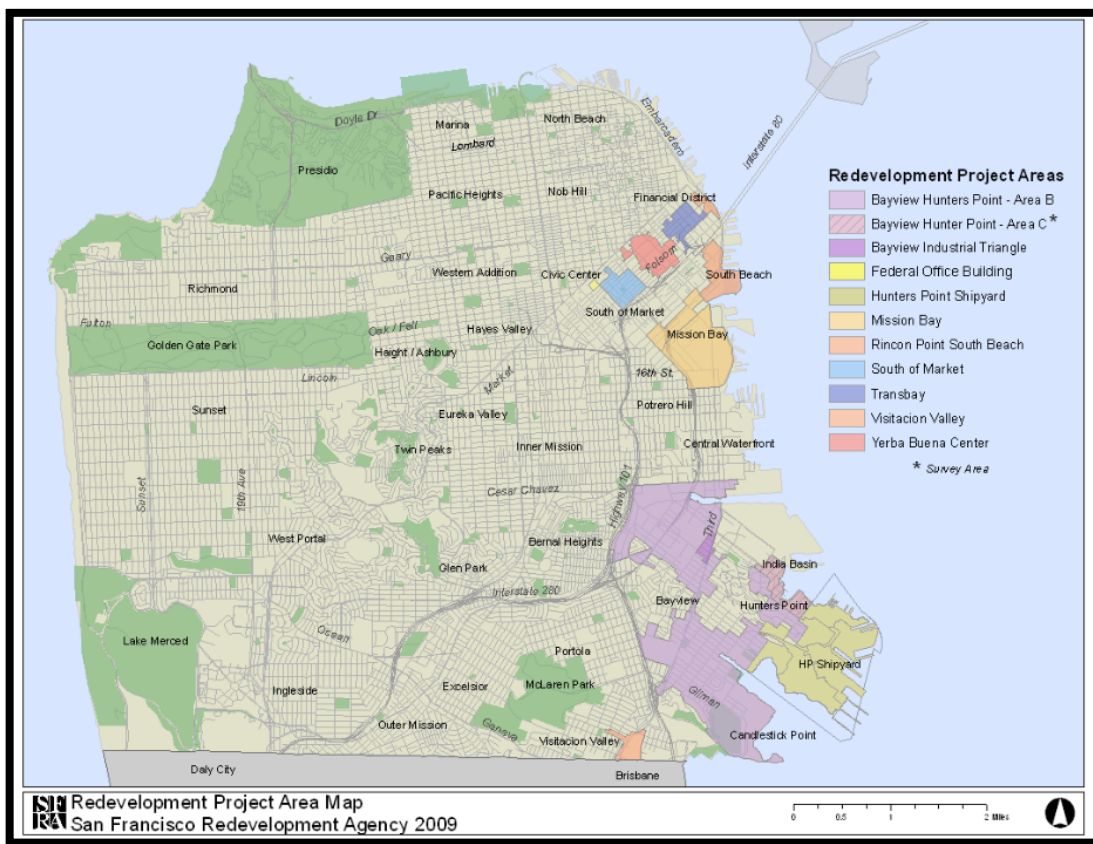


Image 1. San Francisco Redevelopment Project Areas. Bayview-Hunters Point and the Hunters Point Shipyard are located in the southeast corner of the city (San Francisco Office of Community Investment and Infrastructure).

At the Asian Pacific American Center in 2011, a woman from a public relations firm hired by the Navy stood by a fold out table and greeted people as they walked into the small multipurpose room, with chairs set up in front of a large projection screen. Roughly forty people had shown up, and most stood around mingling, with a printout of the evening’s agenda in their hands. The vibe was friendly and familiar. Many attendees

knew or recognized each other from previous meetings – relationships that in some cases have spanned over a decade. The Navy’s hazardous remediation work has been (and continues to be) a long, complicated process. One regular attendee that night was Malcolm², an environmental scientist who works with African American Community Health Equity Council. Malcolm’s mother had come to San Francisco from Louisiana in the 1940s (his grandfather was a sharecropper), and his father had served in the Navy. Malcolm sat on the right hand side of the room by himself. In an unusual turn of circumstance, he was the only black San Franciscan at the meeting that night. Another regular attendee was Larry, another scientist who volunteers with Arc Ecology, an environmental organization that has monitored the shipyard since the 1980s. Larry sat on the left hand side of the room with other scientists from the many government agencies that oversee the remediation project. Most, like Larry, are white men. Marlene Tran, a well-known Filipina community activist from Visitacion Valley, who has worked extensively on the city’s local hiring ordinance – which today mandates twenty percent of work hours on construction projects in the city to be performed by local residents – took a seat near several Asian American community members in front of the scientists. Many other Asian Americans sat throughout the room.

Matt Robinson, the Navy’s community involvement coordinator, opened the meeting by listing ground rules for making public comments, and reminded everyone that the Navy had shifted its meeting to a new location in order to reach more people in the southeast. He handed the microphone over to Keith Forman, the Navy’s Base Realignment and Closure (BRAC) coordinator for the shipyard, who gave a forty-minute power point presentation on a small but contentious area on the base known as Parcel E-2. Parcel E-2 is an irregular, horse shoe-shaped site in the southeast corner of the military base, where much of the shipyard’s industrial waste is located. Some of the known materials within E-2’s subterranean geography include radioactive sand blast debris (in part from scouring ships involved in nuclear testing in the Pacific Ocean) and other low-level radioactive waste, paint sludges, solvents, and waste oils. Since the area became a waste dump before federal environmental legislation required bottom landfill liners and leachate capture systems, the industrial waste on Parcel E-2 is also in direct contact with groundwater (Arc Ecology 2004). The landfills vary from two to thirty-two feet in depth, containing, according to a survey by Navy contractors, an estimated one million cubic yards of waste (Arc Ecology 2004). That evening in 2011, Forman focused his presentation on recent ground contamination surveys on Parcel E-2. The flat projection screen displayed maps of the landfill sites, with pinpoints showing where contracted environmental engineering firms have bored holes into the earth, removing cores for laboratory testing. Forman’s power point slides mapped out the industrial shipyard in clean, bright lines, and Parcel E-2 as a discrete space. The Navy’s “cleanup” plan for Parcel E-2 involves covering the waste with a plastic, industrial grade landfill liner, leaving much of the waste on site. Many Bayview-Hunters Point residents oppose the Navy’s solution as substandard remediation.

Malcolm was the first to speak during the public comment period. “I am upset that this presentation is not in Bayview-Hunters Point,” he said, “because there is so much emotion over E-2 in the community.” In August of 2000, an underground fire smoldered at E-2 for over a month. Bayview-Hunters Point residents who live uphill from the shipyard later described to me, in interviews, watching multicolored smoke emanate from the ground. Today many residents refer to the fire as evidence of the unpredictability of

hazardous waste and the inability of the Navy to fully contain the toxic waste at the shipyard. The proximity between the landfills and the public housing units, inhabited by a predominately black population, are also linked with a specifically black experience of racism in the city: the boundaries of “the community” in Malcolm’s comment that night did not seem to include the Asian Americans who sat on the foldout chairs at the meeting too. “Dumping radioactive waste on E-2,” Malcolm continued, “is similar to what happened at Port Chicago.” In July of 1944, an ammunition ship at the Port Chicago naval base, tucked away in the northeastern corner of the San Francisco Bay, exploded, killing 320 soldiers. Because wartime shipyard labor was racially structured – with black men occupying the most dangerous manual work, such as loading ammunition – 202 of those soldiers killed were black (Allen 1986, Arbona 2013). When 328 surviving black soldiers refused to load another ship, fifty of them were convicted of mutiny. Both the explosion and the trial revealed the racial structure of the military and what Stuart Hall has called “the fatal coupling of difference and power” (Hall 1992). Malcolm ended his comments by asking whether the Navy had considered the effects of sea level rise on the E-2 cap.

Forman declined to address Malcolm’s comments on racism or the toxic fire, but replied that the issue of sea level rise was a problem for Lennar Inc., the developer of the shipyard, and not the Navy.

Marlene Tran spoke up next. “What is the cost of the E-2 remediation project to tax payers?” Forman replied that the complete cost to remediate the 49-acre parcel was estimated at \$475 million, paid out to private environmental engineering firms – the Navy itself does not do any of the work at the base. “No wonder America is poor,” Tran responded. The cost of the entire shipyard remediation project in 2011 was anticipated at \$1.2 billion. In the years after 2008 depression, the sums of money spent to convert an industrial shipyard into the grounds for a mega-urban development project certainly raised questions of the distribution of wealth. An Asian American man followed up on Tran’s comment, asking about the political economy of remediation itself. “Does all this go to big corporations? What about neighborhood businesses?” Speaking in solidarity with working and middle-class labor force throughout southeast, he added, “unemployment here is 50 percent.”³

Forman’s answer distanced the Navy from any responsibility for the social effects of militarization. “We employ twelve contractors,” he said, “who in turn use multiple subcontractors”. His point was that the Navy had little control over who was hired to work on the shipyard today. After years of pressure from Bayview-Hunters Point residents, in recent years the Navy has started to work with workforce development and skills training organizations, like the construction-oriented City Build or Young Community Developers, both located in the southeast. Still, as Forman explained that evening, “it’s unfair to hold job fairs when there are no jobs.” He elaborated that much of the labor of shipyard remediation was technical work, requiring specialized education and training, rather than the manual labor positions that are more accessible to most southeast residents looking for work. The audience member’s response displayed an irony much like Tran’s. “We got the bad air, but we don’t have the jobs,” he said. For him, the lived experience of pollution in the southeast was inseparable from the area’s high unemployment rates. The Navy would prefer to keep separate these conditions of everyday life, focusing on technical remediation and leaving power relations and politics aside.⁴

During Keith Forman's exchange with Marlene Tran, Larry (the scientist with Arc Ecology) had interrupted their debate, reminding everyone that this meeting was about environmental cleanup, not jobs. Larry sided with the Navy's insistence that its responsibility for the shipyard is merely technical, and that its environment problems are distinct from residents' social concerns. Tran waited a moment and then responded to Larry's scientific perspective. "With the release of \$1.2 billion dollars," she said to everyone listening, "people have every right to ask about jobs". In contrast to the technocratic approach of the Navy, its contractors, and to some environmental organizations (Arc Ecology actually straddles an unusual line here, and is often very critical of the Navy's scientific conclusions), for many residents of the southeast the shipyard restoration is both an ecological and an economic process, and the question of how many truckloads of waste are removed from the base is inseparable from the question of who is driving those trucks.

The conversation at the Asian Pacific Community Center that evening revealed some of the social relations of industrial waste and its articulation with historical geographies of race and racism in San Francisco. Forman presented Parcel E-2 on the Navy's flat projection screen as an abstract space and a technical problem to be solved through the expertise of private companies. In contrast, Malcolm had understood Parcel E-2 through its historical spatialities. I refer here to Donald Moore's (2005) concept of spatiality as "a term emphasizing the production of space, its discursive and material practices, as well as its cultural understandings" (3). It seemed that for Malcolm, Parcel E-2 was a site that condensed a set of relations including the geographies of physical matter and social inequalities – an articulation of waste, race, and space. It was also an example of racialized violence. Forman's refusal to respond to Malcolm's reference to Port Chicago and the ways he deflected questions about the political economy of remediation, rejecting any responsibility for the social effects of war-making, revealed the powerful silencing effects of the technocratic approach taken by the Navy, its contractors, and environmental state agencies overlooking this process. Throughout eighteen years of these public meetings, the Navy has consistently distinguished between what they see as their specific, technical task of toxic remediation and what it considers to be "political" topics such as jobs, racism, and history⁵. Indeed, the Navy disbanded the original public remediation forum – what was called the Hunters Point Shipyard Restoration Advisory Board (RAB), and run in a more participatory format – in part because Lennar's redevelopment project and the lack of job opportunities for Bayview-Hunters Point residents had continually surfaced during RAB meetings as topics of concern⁶.

For Malcolm, the shipyard remediation was both an ecological and a racial project – though specific to the African American community in Bayview-Hunters Point. His reference to the fire on Parcel E-2 and his questions about sea level rise pointed to the porosity of borders and unpredictability of industrial waste – its capacity to exceed the clean lines depicted on Forman's power point slides, and to spill over and beyond the health department's toxicological frameworks. Malcolm also claimed the shipyard, and E-2 in particular, as part of an exclusively African American experience in the city – an entanglement that became all the more intelligible because the meeting was held outside the historically black area of the southeast. For many African Americans in Bayview-Hunters Point, the Navy's plan to leave hazardous waste on Parcel E-2 and throughout the

shipyard is part of a longer history of racism and toxic exposure in the city. At a different meeting on Parcel E-2, in February 2012, this time held at the Bayview Opera House on Third Street – the main commercial corridor in Bayview-Hunters Point – and packed with black residents from the southeast, a public health scientist and long-time Hunters Point resident pointed out that other contaminated military sites in San Francisco, like Crissy Fields and the Presidio, which are in whiter, more upscale areas of the city, had gone through a more rigorous remediation process. Her comment suggested that the Navy’s approach to remediation in Hunters Point was different, and less rigorous, because of the racial composition of the neighborhood.

Tran and other Asian American community members could not participate in this racialized relationship with the shipyard – itself the effect of a history of urban segregation and anti-black racism in the city – but entered the conversation that evening through the social relations of capital, seeking jobs and more economic opportunities for the working class population of the southeast. Both Tran and the Asian American man also spoke to the ways that the remediation project is more than a “cleanup” – producing a blank slate for Lennar’s mega-urban development – but also a productive, profit-generating project in its own right, and one which they felt ought to be a distributive project.

Race, Waste, and Space

This dissertation examines the articulation of processes of waste, race, and space, as material and social relations, in southeast San Francisco. When I began my fieldwork, I thought of my research as an “environmental justice” project. My first visit to Bayview-Hunters Point had been on a toxic tour with Literacy for Environmental Justice, which had offices near the Hunters Point Shipyard in 2004. I was twenty-three, fresh out of college, and living nearby in the gentrified Mission District. The experience motivated me to become involved with a community garden also near the Hunters Point Shipyard, and eventually to apply to graduate school with the intention of studying and writing about environmental justice. I am still inspired by the ideals of the environmental justice movement, but have also tried to move away from its scholarly framework and the dominant environmental justice “genre”, which tends to focus on social movement strategies and takes categories like race, space, and waste uncritically. If I have learned one thing during my years of graduate school, it was that these categories are better understood as historical products and ongoing processes. The burden of this dissertation is to show the harmful ways that processes of race, space, and waste have articulated in southeast San Francisco, producing the grounds for the environmental justice activism that motivated me to study geography in the first place. Each chapter takes a different “cut” into this historical articulation of social and material processes.

One of the ways I have tried to approach environmental justice and environmental politics in Bayview-Hunters Point differently is to examine the cultural meanings of waste and wastelands. An emerging scholarship has begun to explore the analytical potential of waste as a lens into contemporary social relations, and I take this “waste-based” approach as this dissertation’s guiding framework. In a review of emerging scholarship on “geographies of waste”, for example, Sarah Moore (2011) suggests that waste, taken as an object of study, works as a “parallax object” (citing Zizek), “that which disturbs the

smooth running of things” (Zizek 2006, in Moore 2011, 2). In an earlier article (2009), she explores the politicization of garbage in Oaxaca, Mexico. As a political tool, garbage represents the excess of modernity and the inability of waste managers to completely dispose of the stuff (the notion of waste displacement rather than removal). Tim Edensor (2005a) likewise argues that industrial waste, through its materialities and the temporalities of abandonment and decay, “speaks back” to a spatially and socially ordered world – the world of value. Importantly, Edensor and Moore both discuss waste and as form of “excess”, which is different from the typical notion of waste as discarded matter. The concept of excess foregrounds waste as active and threatening – it haunts the world of value, revealing the vulnerability of order and cleanliness, and the stability of borders around categories, objects, and selves. Zsuzsa Gille (2007) advances a social theory of waste through her concept of “waste regimes”, through which she suggests an alternate periodization of social relations in Hungary between 1948 and 2004, spanning its socialist and capitalist periods. For Gille, waste works analytically to rethink the firm conceptual boundaries between state socialism and capitalism, and between Eastern and Western Europe. Focusing on material and discursive waste practices in Hungary over time, Gille troubles and unravels these distinctions.

With Tim Edensor, Nicky Gregson and Mike Crang (2010) argue for more attention to waste as a material as well as a concept. They focus in particular on industrial waste (noting that most waste scholarship looks instead at household trash), and suggests that critical waste scholarship can contribute to scholarly work on materiality through a more rigorous engagement with the physical nature, or the “stuff” of waste, which has heretofore been left to the technical domain of engineers – much like the contractors working at the Hunters Point Shipyard today. This dissertation also finds inspiration from Ann Laura Stoler’s writing on “ruin and imperial formations” (2008), in which she challenges the concept of the “post-colonial” by foregrounding the persistence of imperial relations in and through the ruins and ruinations of empire. Stoler’s focus on ruins as both physical and social processes emphasizes “the connective tissue that continues to bind human potentials to degraded environments, and degraded personhoods to the materials refuse of imperial projects” (2008, 193). In a similar vein, this dissertation attends to the articulation between the material stuff of waste and unequal social formations, just as the Asian American man at the Navy’s meeting linked bad air and high unemployment rates in southeast San Francisco.

With the exception of Gidwani (2008) and Gidwani and Reddy (2011), critical scholarship on waste has not yet engaged with the histories and theories of race and racialization. This represents a considerable absence because, as Gidwani shows through his study of colonial and post-Independence India, concepts of waste have historically linked uncultivated spaces with improper bodies and habits, justifying the dispossession and alienation of, for example, Indian peasants from the land in need of European management and improvement. As Gidwani (2008) shows, seventeenth century notions of improvement, enacted through the enclosures of English common lands and in the European colonies, depended on the categorization of certain spaces as wasted, which was inseparable from the racialized bodies that lived in those perceived wastelands. Gidwani refers back to the political philosopher John Locke, for whom “improvement” entailed making nature productive through “proper” use. This included enclosure and industrious

cultivation which was, importantly, accomplished by particular racial subjects – specifically, by propertied, white Europeans (Gidwani and Reddy 2011, Mehta 1990).

The production of twentieth century urban wastelands is likewise inseparable from constitutive processes of race and racism. The articulation of race and toxic waste has been explored by environmental justice scholars and activists. Yet the contributions of environmental justice scholars is absent from current dialogues, discussed above, on waste as an analytical category. I suggest that waste scholarship might better engage with critical race theory and with the historical and contemporary articulations of race and toxic waste, which are at the center of the politics of many hazardous remediation projects, as with the Hunters Point Shipyard today. At the same time, the environmental justice literature might benefit from the theoretical rigor of new waste scholarship, as well as its emphasis on the materials and spatialities of waste. This dissertation seeks to bring these two approaches together through five empirical chapters.

Chapter Summary

The first chapter of this dissertation examines the material and discursive production of Bayview-Hunters Point, showing how urban development in southeast San Francisco has articulated with historical racial formations. This chapter also seeks to establish a sense of the physical and social landscape of Bayview-Hunters Point for the chapters that follow, but in a way that avoids telling an internal history of the place. My analytical framework is guided by Doreen Massey’s concept of place as an articulation of social relations at different geographical scales. This chapter focuses on the articulation of waste, space and race, as the grounds for environmental justice activism in the neighborhood today, in showing the production of Bayview-Hunters Point as a wasteland for industrial capitalism at the same time it was segregated and marginalized through post-World War II racial formations.

I then examine the Navy’s toxic remediation project at the Hunters Point Shipyard, focusing on the cultural politics of the shipyard’s landfills on Parcel E-2. At monthly public shipyard restoration meetings I attended between 2010 and 2012, the naval engineer would flip through power point slides that enumerated truckloads of waste extracted and underground chemical plumes neutralized through impressive technological feats – all evidence of the Navy’s progressive steps toward cleanup. Presented as a measurable object, the shipyard’s waste appeared removable and containable, and the Navy in control of maintaining these borders between contamination and social life. In this chapter, and waste analytically “speaks back”, as Tim Edensor puts it, to the notion of shipyard remediation project as environmental progress, challenging the Navy’s discourse of controlled cleanup. I also describe the emergence of abandoned, industrialized land, like the shipyard, as economic opportunities in the 1990s, drawing connections to what Leigh Johnson (2010) has called “accumulation by degradation”. Lastly, I show how Bayview-Hunters Point residents connect the pollution at the shipyard, and in particularly Parcel E-2’s waste sites, with a historical experience of racism in the city.

I then shift from the profit-driven shipyard redevelopment project to three recently constructed wetland habitats along the Hunters Point waterfront. This third chapter looks at the ways these sites along Hunters Point waterfront was transformed from a wasteland

to valuable space in two historical moments. First, in the late nineteenth century, the area's marshy tidelands were considered economically wasted swamplands, requiring drainage and filling, and their conversion to solid land for industrial development. Second, by the late twentieth century, the waterfront had become a toxic wasteland. Each of the three wetland sites were former waste dumps that today have been transformed into valued wetlands. In this chapter I examine how different Bayview-Hunters Point residents conceptualize these "nature" development projects, complicating the ways the wetlands sites are generally discussed as political achievements and, in the case of Heron's Head Park, as a form of environmental justice. I also show the constructed wetlands' complex relationship with profit-driven development in the southeast today.

The next chapter focuses on the history of radiation at the shipyard, looking at the Naval Radiological Defense Laboratory (NRDL), which operated on the military base between 1946 and 1969. The NRDL developed out of the military's initial project of decontaminating ships returning from the Bikini atoll in the summer of 1946, where the military staged two nuclear "tests", and developed into the U.S. Navy's largest applied radiation lab. The NRDL was also the central processing site for radioactive waste generated by other radiation labs in the San Francisco Bay Area. In this chapter I also reflect on my experiences reading through the NRDL's dusty files at the National Archives branch in San Francisco, and my own fears of being close to those potential sources of radiation. My experiences motivate the analytical orientation of the chapter, guided by Avery Gordon's (2008) concept of "ghostly matter" as a way of understanding some of the social relations and toxic consequences of nuclear "defense".

The last chapter examines two garden projects in Bayview-Hunters Point, and the ways they seek to revalue and transform wasted land and wasted lives. I spent nine months volunteering with Quesada Gardening Initiative (QGI), which targets unused and vacant lots and seeks to cultivate them as gardens. More the vegetables, however, QGI seeks to cultivate a sense of neighborliness and sense of stability within a neighborhood undergoing many social and material changes. The second gardening organization, Hunters Point Family, uses garden work as a way of creating more economic opportunities for teenagers in Hunters Point, and operates within an urban milieu in which physical violence is a daily threat for many people – including gun violence but also the slow violence of malnutrition and pollution (c.f. Nixon 2011). I argue that, like brownfield remediation projects and wetland construction projects explored in earlier chapters, both garden projects target multiple forms of waste and articulate alternative regimes of value.

¹ Sixty-six percent of residents in Visitacion Valley are classified as Asian, according to the San Francisco Department of Planning's 2012 "Neighborhood Profile".

² Most names in this dissertation have been changed for privacy. I retained actual first and last names when interviewees consented to the use of their names in writing, or in the case of public meetings, as with the Navy's Shipyard Restoration meetings, for reasons of the historical record. All other names, in the singular first names, are pseudonyms.

³ Unemployment across the southeast is not 50 percent, although in certain pockets, particularly in the census tracts near the shipyard, it is close to that amount (US Census 2010). The 50 percent number is often repeated at events, even by the Navy.

⁴ Delineating its responsibilities in such a way is an example of what Tanya Murray Li has called "rendering technical" (2007). Through her study of the discourse and practices of development in Indonesia, Li identifies two key dimensions in the technical rendering of a development "problem". First is the social boundary between the people positioned as experts – confirming their capacity to diagnose and intervene – and those positioned as trustees – the subjects of expert intervention. As I explore in the second chapter of this dissertation, many long-time Hunters Point residents are frustrated and angry that their experiences of living and working near the shipyard are dismissed as irrelevant to environmental decision-making process within an environmental engineer's technical framework. The second dimension Li writes about is the ways technical problems are also rendered nonpolitical. That is, technical expertise tends to evacuate considerations of political economic structures from its understandings (and proposed solutions) of social problems, even as those social problems are often the effects of political economic structures in the first place.

⁵ This was made clear to me in reading through years of complete transcripts of the Restoration Advisory Board meetings (the precursor to today's Community Informational Meetings), available at the Navy's Information Repository at the San Francisco Public Library.

⁶ The circumstances of the RAB shutdown are in fact very complicated, and also involve fractures in community leadership, and a heightened anger at the Navy due to a year-long period of exposure to construction dust from Lennar's redevelopment work on the former Parcel A.

Chapter 1 – Producing “Bayview-Hunters Point”

“We used to call ourselves Hunters Point, USA, because we were divided from the city”, Espanola Jackson told me over the phone, speaking from her house near the Hunters Point Shipyard. I had recently introduced myself to Jackson at one of the Navy’s monthly Community Informational Meetings on its hazardous remediation project at the shipyard, and she told me to give her a call. When we spoke a few days later, our conversation focused on her politicization as a welfare-rights activist in San Francisco in the 1960s, and her efforts to organize around environmental justice today. In the context of talking about the shipyard’s toxic history, I had asked Jackson about health inequalities in Bayview-Hunters Point. Residents in the city’s southeast neighborhood have higher rates of asthma, cancer, emphysema, and other environmentally related diseases than other areas in the city (BARHII 2008). “Well, we live in a toxic community”, she said to me. This reminded Jackson of the place she used to call “Hunters Point, USA”, situating the neighborhood apart from “San Francisco”, yet within a national context, as a response to the many ways it has been segregated within San Francisco. “The city didn’t care about what was happening in Bayview-Hunters Point”, she added, “cause we didn’t get the services”. Rather than defining Bayview-Hunters Point as a poor and isolated neighborhood of San Francisco, or in relation to the rest of the city, Jackson had re-positioned it within a broader set of social and geographical relations.

This chapter examines the material and discursive production of “Bayview-Hunters Point”, but in a way that is inspired by Jackson’s politics of location. I explore the history of urban development in southeast San Francisco through its social relations at regional, national, and global scales, seeking to explain the production of a place called “Bayview-Hunters Point”, as an effect of those relations. My anchoring point is World War II, as I emphasize the significance of military industrialization and the migration of black southerners to San Francisco for jobs and in the hopes of a better life during the wartime boom. In part, I intend this chapter to establish the physical and social landscape of Bayview-Hunters Point for the dissertation chapters that follow. My analytical framework is motivated by the hopes of doing so without participating in a historical discourse that conflates the place with isolation and racial difference.

My approach to urban geography is also motivated by current redevelopment politics in Bayview-Hunters Point. Today, market-led redevelopment projects at the Hunters Point Shipyard and parts of the southeast are usually portrayed as needed interventions in an underdeveloped and isolated area of the city, and in this sense as a form of economic justice. For example, the vice-president of Lennar Inc., the developer of the Hunters Point Shipyard, promoted its 12,000 mostly market-rate condominiums as a

project that will “reconnect these areas to the rest of the city” (*San Francisco Chronicle* 2008). Similarly, the Planning Department’s Bayview Hunters Point “Area Plan”, which is intended to guide redevelopment in the neighborhood, includes as one of its goals to “fully integrate Bayview Hunters Point into the economic and cultural fabric of San Francisco as a whole” (San Francisco Planning Department 2010, 8).

This chapter is inspired by Steven Gregory’s (1998) ethnographic analysis of Corona-East Elmhurst, in New York City, as a site through which he understands the relations of race, class, and place in U.S. cities today. At the same time, I also hope to situate Bayview-Hunters Point within the specific historical and geographical relations of the U.S. West. Although I focus on regional and national level processes in this chapter, in future versions of this work I expect to situate Bayview and Hunters Point more firmly with global social relations, including nineteenth century maritime economies and U.S. imperialism across the Pacific Ocean, and the migration of Chinese and Pacific Islanders to southeast San Francisco. This is one reason I began the dissertation, in the introductory chapter, at the Asian Pacific American Center. These Pacific region historical geographies are often lost within the post-World War II idea of Bayview-Hunters Point as a black neighborhood – itself the material and discursive product of racializing processes, and which shapes the politics of redevelopment today. In this respect, Jacqueline Nassy-Brown’s (2005) analysis of place as a nexus of power relations in the British port city of Liverpool is instructive for my analysis. As with Hunters Point, Liverpool’s urban economy depended on a shipping industry that thrived through earlier geopolitical relations. The notion of San Francisco as a port city disrupts the dominant narrative of the place as a Gold Rush boomtown, and as the edge of a westward moving U.S. frontier. San Francisco, and California more generally, can also be situated within historical relations crisscrossing the Pacific Ocean, through which the area developed prior to the Gold Rush and the incorporation of California as U.S. territory in 1848.

In the fourth chapter of this dissertation, I examine the relationships between the Hunters Point Shipyard and the Marshall Islands after World War II, forged through U.S. nuclear weapons testing. Yet even before the Navy took control of the shipyard, U.S. imperialism across the Pacific Ocean was supported by a shipbuilding industry that developed around Hunters Point. As one example, the Anderson Shipyard (today the Anderson-Christofani Shipyard), which is immediately to the north of the Hunters Point Shipyard, was contracted in 1911 to build a power schooner for Eastern Samoans, in U.S.-occupied territory (*The San Francisco Call* December 19, 1912). The commandant of the U.S. naval training station on Yerba Buena Island, a military base in the middle of the San Francisco Bay, had served as the governor of American Samoa, where he sought to encourage so-called “habits of thrift” in the indigenous population. These habits included paying the Hunters Point-based shipbuilding company to build a modern schooner that was, importantly, built to carry copra. Copra is the dried meat of coconuts, used to extract coconut oil. In the late nineteenth century, copra was one of the Bay Area’s leading imports (Schwartz 2008).

In the nineteenth century and twentieth centuries, copra circulated through San Francisco ports from U.S. colonies in the Philippines, Eastern Samoa, and Guam (Corbett 2011). After the Spanish-American War of 1898, the Philippines became the main supplier of copra to the U.S. The U.S. maintained colonies in Guam and American Samoa that were primarily used as naval bases, although these places also supplied copra to the

U.S. In the 1930s, copra was the primary export for these island economies, according to a 1938 article titled “Outposts of Empire in the Southern Pacific”, in the journal, *Far Eastern Survey*. In Eastern (U.S.-occupied) Samoa, the U.S. Navy purchased copra from Samoans at a contract price, and then sold the Samoan-produced output to a firm in San Francisco (Hall 1938). The Hunters Point-based Anderson Shipyard’s power schooner would have facilitated these trade relationships¹.

An analysis of the rise and decline of maritime San Francisco also challenges the dominant focus in U.S. studies scholarship on urban decline in the 1970s, as an effect of deindustrialization. The story of deindustrialization and its impact on cities centers on the relocation of manufacturing industries like steel and automobiles. The loss of the metals industry in San Francisco in the 1960s and 1970s included a significant loss of working class jobs, but so did the decline of maritime commerce, beginning in the 1950s, with revolutions in shipping technology. In the first empirical section of this chapter, I show how that these Pacific region and ocean-spanning routes and relations are important in understanding urban development and contemporary social inequalities in southeast San Francisco today.

The second section of the chapter examines the post-World War II racialization of the southeast and the production of a place called “Bayview-Hunters Point”. “It is part of San Francisco, yet it is not typical of San Francisco”, observes a city-planning report of Bayview-Hunters Point in 1987². The report also includes a lengthy discussion of “The Characteristics of the Black Population”, which include poverty, male unemployment, and “increasing numbers of female-headed households” (San Francisco Planning Department 1987). In this respect, the planning report participated in a gendered discourse on welfare policy of the 1980s (at times symbolized in popular media debates by the notion of the “welfare queen”) and which reinvigorated “culture of poverty” theories from the 1960s (O’Conner 2004). Steven Gregory (1998) cogently identifies this discourse as part of a post-civil rights era “trope of the black ghetto”, which he argues “depoliticized the problem of black poverty and related social inequalities by locating their origins in the moral economy of the isolated ‘ghetto’ household, rather than in the political economy of the greater society” (6). Similarly, Espanola Jackson had located Hunters Point within social relations at a national scale, rather than speaking about it as an isolated place within the city.

With Gregory, I understand the racialization of place as a historical and dialectical process, inspired by the ways Stuart Hall (1989) has written about cultural identities. Hall argues against the notion of identity as a form of “oneness”, essence, of shared culture and coherence, as in notions of “Caribbeanness” or “the black experience”. Rather, Hall develops a notion of identity as a process of becoming – a production of a sense of self rather than a pre-existing state of being – and the product of difference as much as of shared experience. This second notion of identity leads Hall to write that identities “are the names we give to the different ways we are positioned by, and position ourselves within, the narratives of the past” (394). Although Hall develops this argument as a way of understanding the formation of a specific Caribbean sense of self in the 1980s, and is therefore rooted in a particular place and time, notions of positioning and being positioned are instructive in thinking about the production of senses of self and place in Bayview-Hunters Point as well. In his ethnography of black political life in Corona-East Elmhurst, in New York City, Gregory does not describe the neighborhood as a black community

“because its residents share a common culture or a class position.” Rather, Corona-East Elmhurst:

...is a black community because, through much of its history, its residents have been subjected to practices of racial discrimination and subordination that inextricably tied their socioeconomic well-being and mobility to their racial identity *and* to the places where they lived and raised their children. And equally important, Corona is a black community because its residents fought back as a black community (10-11).

In San Francisco in the post-World War II decades, a large part of the southeast *became* “Bayview-Hunters Point”, and identified as a black community, in part through racialized housing policies and labor relations, which segregated – or positioned – black San Franciscans within the city’s industrial southeast. One reason the 1987 city planning report included a section on “Characteristics of the Black Population” in Bayview-Hunters Point was because, by 1980, according to the US Census, black residents constituted 73 percent of the area’s population. At the same time, black residents in the post-war years identified Hunters Point – and later, “Bayview-Hunters Point” – as a black neighborhood, and formed political and cultural organizations as such. As one example, a monthly calendar, co-published by the San Francisco Redevelopment Agency and the locally run Bayview-Hunters Point Development Corporation, spanning the years 1968 and 1970, details a timeline for redevelopment projects in Bayview-Hunters Point at the same time it tracks significant events in national black history. The calendar reflects the efforts of activists in the southeast struggling for better housing and infrastructure, at the same time it merges Bayview-Hunters Point with a specific notion of the black experience in the U.S., implicitly presenting the redevelopment of Bayview-Hunters Point as part of black history at a national scale. Here, the suturing of place and race is an effect of the history of racial segregation and urban neglect in San Francisco *and* the ways Bayview-Hunters Point activists organized against various forms of racism as a black community. My analysis in this second section of the chapters draws from city planning documents and news reports, and from interviews with long-time Bayview-Hunters Point residents.

The History of “Place” and Bayview-Hunters Point

As a second introductory note, in this section of the chapter I comment on the historical and political resonance of Doreen Massey’s concept of “place” to understanding post-World War II Bayview-Hunters Point. Both Steven Gregory and Jacqueline Nassy-Brown draw on Massey’s (1994) concept of place as a set of social relations that “stretch beyond” the place itself, challenging the notion that Corona East-Elmhurst or Liverpool can be defined by history and social relations within their physical borders. In this chapter I also endeavor to present Bayview-Hunters Point as a “meeting place” of broad geographical relations, in the sense developed by Massey. By way of introducing her concept of spatiality as a set of social relations in *Space, Place, and Gender* (1994), Massey notes that this idea took shape at a particular historical moment in the United Kingdom in the 1970s. The philosophical debates about space she and other scholars

participated in at the time were grounded in questions that were “fundamentally political”. These questions included the “inner-city problem” (which she puts in scare quotes), writing that:

“...the easy response of politicians was to look within the areas themselves for the cause of their malaise. A geographical version of the well-established strategy of blaming the victim for their own misfortune was widely adopted. It therefore became urgent to argue that events in the cities could not so be explained, and that the cities were in some sense victims but victims of wider circumstances; that the fortunes of individual places cannot be explained by looking only within them...” (19-20).

I mention this to point out that Massey’s well-known concept of space as a set of social relations at multiple scales was partly formulated as an intervention in a specifically urban debate that had begun to take place in the context of uneven urban development beginning in the 1970s, marked by deindustrialization and urban decline in many European and North American cities. Massey and others seeking to intervene in this debate challenged the dominant understanding of “the inner city”, which ignored the effects of an international political economy in explanations for urban decline. As Massey argues, “the loss of jobs in urban areas was due to the particular form being taken by a wider and even more fundamental problem: the lack of international competitiveness of much of British manufacturing industry.” At a moment when certain people (in her categories, “ethnic minorities, single-parent families, “the unemployable”, and local planners) were all blamed for urban decline in certain areas of the industrial cities, Massey sought to demonstrate how “the situation was exactly the contrary. It was not the cities (nor, indeed, the regions) which had failed industry, but British industry which had failed the cities” (20). By situating debates about urban decline within international political economy, rather than through racializing discourses at an urban scale, Massey sought to reframe the terms by which urban decline in British cities was understood. In other words, Massey’s concept of place therefore both analytically useful *and* also historically and politically resonate with the urban processes and politics of place in Bayview-Hunters Point that I examine in this chapter.

For example, the San Francisco Planning Department’s Bayview-Hunters Point “Area Plan” (2010), which guides its approach to development in different areas of the city, introduces the neighborhood in the following way:

“Historically it [Bayview-Hunters Point] has been the location of the City’s heaviest industries, some of its poorest residents, and its greatest concentration of public housing: *characteristics that frequently placed it outside the mainstream of San Francisco life*. But today the area is at a *critical junction as urban growth is proceeding in a southeast direction* towards the neighborhoods of Bayview Hunters Point, creating a situation whereby its *problems can be translated into major opportunities for community, citywide, and regional progress* [my italics].”

In this framing, the planning department explains urban decline in Bayview-Hunters Point through some of the neighborhood’s specific characteristics, similar to the

explanations for urban decline in England's industrial cities that Massey critiques. The urban growth, "spreading in a southeast direction" to which the planning department refers includes a "biotech cluster" at Mission Bay (with a new University of California, San Francisco medical campus and offices of some of the world's largest biotechnology firms), new condominiums, and high-end restaurants. These new development projects, extending south from the city's financial district, also run along the city's new light-rail line, built in the 2000s, which extends down Third Street in Bayview-Hunters Point. In short, the planning department identifies a market-led process of gentrification – concentrating along the new transportation route – as the solution to Bayview-Hunter's Point's development "problems". From a broader historical and geographical perspective, this understanding of the place misses the ways city agencies and political economic relations are implicated in the specific patterns of urban development in Bayview-Hunters Point in the first place.

In the following section, I examine these patterns of urban development in the second half of the nineteenth century. I then look at the development of Bayview-Hunters Point in the post-World War II decades as a black community.

Industry Builds Out the City

In 1889, the *San Francisco Chronicle* sent a journalist to the Hunters Point peninsula to report on life in one of the many Chinese fishing villages in the area. It would have been a long journey. At the time, the fastest way to reach Hunters Point from downtown San Francisco was by boat (Olmsted 1981). In his article, the journalist describes the difficulties of his trek to Hunters Point, including the unpaved roads, marshy tidelands, a long footbridge across Islais Creek basin, and the smells of Butchertown. San Francisco's butchers and related meat-product industries had relocated to Hunters Point in the late 1860s, away from the growing city (Walker 2004). The meat processing industry took advantage of the despised swamps near Islais Creek to dump their toxic waste products. Nearby were tanneries, wool processors, glue, soap, and fertilizer manufacturers, and other industries that used the butcher's by-products. As the *Chronicle's* journalist describes his travels near Butchertown, "from the drawbridge at Fourth and Townsend streets down to Hunters point [sic] itself, is a perpetual recurrence of boggy roads, clouds of dust, reeking malarious acres of black mud and stinks that baffled comparison or description" (Anonymous, "Chinese Shrimpers," quoted in Brahinsky 2012, 52).

By 1889, San Francisco was a booming metropolis. In the space of a few decades, it had transitioned from a small Mexican trading outpost, called Yerba Buena, into the financial and industrial center of the U.S. West. Importantly, it had also become the principal U.S. port on the West Coast (Scott 1985, Delgado 2007, Ferguson 2012). The U.S. had annexed Alta California through the Treaty of Guadalupe Hidalgo in 1848, which ended the 1846-1848 Mexican-American War, at the same moment that the Gold Rush brought a flood of migrants from eastern U.S. states, Chile, China, and Australia (Ferguson 2012). Capital accumulated through mining in the Sierra Nevada Mountains was reinvested into the city's growing urban landscape (Brechtin 2006). As I explore in the third chapter of this dissertation, this involved the environmental transformation of the

marshy tidelands running along the length of the eastern, bayside waterfront into city streets, which slowly extended San Francisco into the bay.



Image 2. San Francisco Waterfront, 1884. The footbridge described by the journalist is shown, crossing Islais Creek basin (Olmsted 1981).

The story of San Francisco usually begins with the Gold Rush in 1848, but recent historical scholarship has explored the city and region through pre-1848, ship-based economic and social relations. James Delgado (2007) examines San Francisco in the nineteenth century as a “maritime frontier”, and an entrepôt - a port city defined by shipping routes and ocean-crossing economic and social relations. Delgado shows how, even before the Gold Rush in 1848, the town was connected to global capitalism through ships and shipping, routes that led to Europe, the east coast of the U.S., and across the Pacific Ocean. David Iglar (2004) draws a similar conclusion in his study of commercial

and epidemiological exchanges that converged across the Pacific Ocean around 1800, linking port cities in Alta California, Peru, Mexico, Hawai'i and China. "The future American West," Iglar argues, "occupied a central position in this internationalized ocean basin prior to its annexation as the nation's western boundary" (694). With the California Gold Rush and the annexation of Pacific territories in 1848, as Iglar puts it, "much of the *eastern* Pacific was now the American *west*" (695). Most recently, Laura Ferguson's (2012) dissertation takes up the cultural and material making of San Francisco as a "gateway city". She focuses on the time period between 1846 and 1906, when San Francisco grew "from international hamlet to American town and then an imperial city". Ferguson writes, "[d]ebates over what type of city San Francisco should be often played out in and over the waterfront, as various groups sought access to and control over the entry and exit point of the city" (4).

As is clear from the U.S. Coastal and Geological Survey map from 1884 (see Image 2), urban development in San Francisco concentrated on the northeastern side of the city, around an area called Yerba Buena Cove. In the 1850s and 60s the cove was progressively filled out with wharves that became city streets, as San Francisco stretched out to reach the growing number of ships passing through the bay. In contrast to Yerba Buena Cove, both Potrero and Hunters Point, along the city's southern waterfront, were tall, rocky promontories that jutted into deep waters, making the southeast a logical place to locate shipyards (Dow 1973). In between these two outcroppings, the marshy shoreline curved around a body of water and marshland known as Islais Creek basin. The minimal development pressures in the area allowed for a thriving Chinese fishing industry around Hunters Point. Chinese fisheries had operated in San Francisco since 1854, when the invention of hydraulic mining pushed many workers out of the Sierra Nevada and into the cities or onto the railroads (Saxton 1971, McEvoy 1986). Beginning in the 1850s, Dutch labor recruiters traveled to China's Guangdong Province, recently ravaged by famine and the Opium Wars, and began transporting Chinese male laborers to sugar plantations in Hawai'i (Saxton 1971). In the 1860s, U.S. railroad companies began offering Chinese workers passage to California, increasing the population that was also at work in the mines, in exchange for a form of indentured labor (until the trip was paid off through years of work). By the 1870s, Chinese fisheries had become a highly visible and profitable enterprise in California, and constituted one-third of the fisheries in the state (McEvoy 1986).

Chinese fisheries constituted such a large presence in and around Hunters Point that city had periodically proposed re-locating Chinatown there, which was (and remains) located adjacent to the downtown financial district, to the north. This proposition gained its greatest traction after the San Francisco earthquake, and its subsequent fires, of 1906. As the city elites sought to rebuild the downtown area in the aftermath of natural disasters, racist arguments over the "best use" of San Francisco's Chinatown, situated next to the downtown district and on hilly land with good views of the water, circulated through the presses. According to an article in the *San Francisco Call* in 1905, the U.S. Investment and Improvement Company hoped to acquire (in its words, "reclaim") Chinatown, because of the "great value to the community of the present quarters in which the Chinese... reside" ("Suggests a New Chinatown"). The improvement company proposed relocating Chinese people to Hunters Point. These plans for Chinese relocation to Hunters

Point became so popular that in May 1906, a Chinese diplomat from Washington, DC traveled to San Francisco to intervene (*San Francisco Call* May 12, 1906).

Life in California for Chinese workers and their families was structured by racisms that grew with increasing financial downturns and economic insecurity after the initial Gold Rush boom (Saxton 1971, Takaki 1979, Almauger 1994). In 1880, the California state legislature attempted to prohibit “all aliens incapable of being electors of California [i.e. the Chinese] from fishing in the state’s public water” (quoted in McEvoy 1986, 113), an act which was ultimately declared unconstitutional in the state Supreme Court on the grounds that it violated the Fourteenth Amendment. Two years later, the U.S. Congress passed the Chinese Exclusion Act of 1882, which prohibited Chinese workers from immigrating to the country. In 1911, San Francisco prohibited the use of Chinese shrimp nets, part of a long campaign against Chinese fisheries, which Arthur McEvoy (1986) has called “one of California’s most consistent and energetic efforts in fisheries regulation before the turn of the century” (113). This sense of racial difference is clear from the journalist’s report on Hunters Point in 1889. In his article, Chinese villagers themselves are observed only from a distance – he writes of “dark-blue figures flitting among the hulls or on the docks” in the “queer Chinese shrimp colony at Hunters point” (quoted in Brahinsky 2012, 52). For *Chronicle’s* journalist, swamps, heavy industry, and the presence of Chinese people produced Hunters Point in his mind as “an out of the way corner – which seems to have nothing whatever to do with San Francisco”.

What the *Chronicle’s* journalist did not “see” in his trek across the dusty roads towards Hunters Point were its landholders – the companies and wealthy individuals who owned large tracts of the southeast. En route to Hunters Point, the *Chronicle’s* journalist would have passed by Potrero Point, where iron foundries, industrial shipyards, animal processing and chemical plants had located (Walker 2004). The Pacific Rolling Mills, built in 1868 on Potrero Point, supplied iron bars and rods for the city’s growing transportation network and to the Southern Pacific Railroad Company as it worked to complete the transcontinental route to the U.S. east coast. That same year, Union Iron Works, owned by Pittsburgh-based Charles Schwab’s Bethlehem Steel Company, located next to the Pacific Rolling Mills and began to manufacture machinery for the Comstock Lode, in the Sierra Nevada mountains, which was owned by future Hunters Point Shipyard financier, William Ralston. By the late nineteenth century, at the time the *Chronicle* journalist traveled to the Chinese shrimping camps in Hunters Point, many of the iron-working companies in area had turned to weapons production and ship-building, supporting U.S. imperial interests across the Pacific (Henderson 1998, Brechin 2006). Nearby, Claus Spreckels’ Sugar Refinery imported raw sugar cane from Hawai’i, where it had been cultivated by Chinese, Japanese, and Filipino labor (Takaki 1989, Walker 2004).

Farther south of Potrero Point, companies like the Bayview Homestead Association and the South San Francisco Homestead and Railroad Association had purchased large tracts of land from Jose Cornelius Bernal, a Californio who had owned the area as part of a Mexican-era land grant since 1840 (Dow 1973, Olmsted 1981). Prior to Bernal, the Spanish-built Mission Dolores had used the area around Islais Creek and Hunters Point for grazing cattle. During the 1850s and 1860s, most of these landowners hoped to subdivide their expansive properties into housing tracts and develop the southeast as a residential suburb of the city – an economic strategy motivated by rising real estate values of the time, part of the Gold Rush-era economic boom³ (Lewis 1966,

Shumsky 1966, Kelley and Verplanck 2010). This imagined suburban landscape never materialized, and instead the large tracts of land were bought up by the growing manufacturing industry in San Francisco, an example of “industry building out the city”, one way Richard Walker (2004) describes the ways industrialization, as a spatial process, produced the “sprawling form of the American metropolis”. As Walker puts it, describing industrialization in the San Francisco Bay region, “[a]long with the dispersal of industry came a steady expansion of working class residential districts, tied to manufacturing and warehousing districts by time, income and transit limitations on employees” (Walker 2004). Houses and urban infrastructure for factory workers in San Francisco’s southeast in the nineteenth century were built in walking distance from factories, and interspersed among them. In 1895, when the Spreckel’s California Sugar Refinery, in Potrero Point, expanded its factory with nine new boilers, it also built tenement houses and a schoolhouse for workers and their families (“The Southern Suburbs”). In 1912, the *San Francisco Call* reported a large number of homes built in the Bayview district. The Western Pacific Harbor Tract Company had announced plans to build houses, “where some of the thousands employed in the Union Iron Works, Risdon Iron Works, sugar refineries and other works may find homes, and this tract of land is in easy walking distance of these industries” (“Bayview is to Have More Homes”). When the city produced its first zoning map in 1921, it codified this tight patchwork of residence and toxic industry.

The Hunters Point Shipyard

In the early 1860s, the South San Francisco Homestead and Railroad Association purchased 2,455 acres of land at Hunters Point from the state of California (Dow 1973), and in 1864 sold 30 of these acres, including about 20 acres of tidelands, to the Pacific Dry Dock Company (“A Stone Dry Dock”). The building of the California Dry Dock – which became the Hunters Point Shipyard – was a joint venture of some of California’s most prosperous capitalists, including William Ralston, who owned the Comstock Lode, and Isaac Friedlander, who controlled much of the overseas wheat trade in the state (Dow 1973, Henderson 1998). In the late 1860s, wheat production in California expanded, in the context of the collapse of the state’s cattle economy and the instability of mining futures. By the 1870s, wheat drove California’s economy – in that decade, it twice led the country in terms of annual output (Henderson 1998). Although the transcontinental railroad had been finished in 1869, the wheat industry depended on ocean transportation routes, making a venture like a shipyard at Hunters Point valuable to Friedlander (Henderson 1998). Other owners of the California Dry Dock Company included Lloyd Tevis, the president of Wells Fargo, who made his fortune as a venture capitalist in Ralston’s Comstock Lode (Brechin 2006). In 1864, San Francisco’s press celebrated the proposed shipyard as a symbol of the city’s growing importance in the Pacific region. According to the *Daily Alta California*, reporting on the sale of land to the Pacific Dry Dock Company, “Thus step by step our capitalists are providing all that it wanting [sic] to secure to our people a full realization of their most sanguine hopes in behalf of the Empire City of this Coast” (“A Stone Dry Dock”).

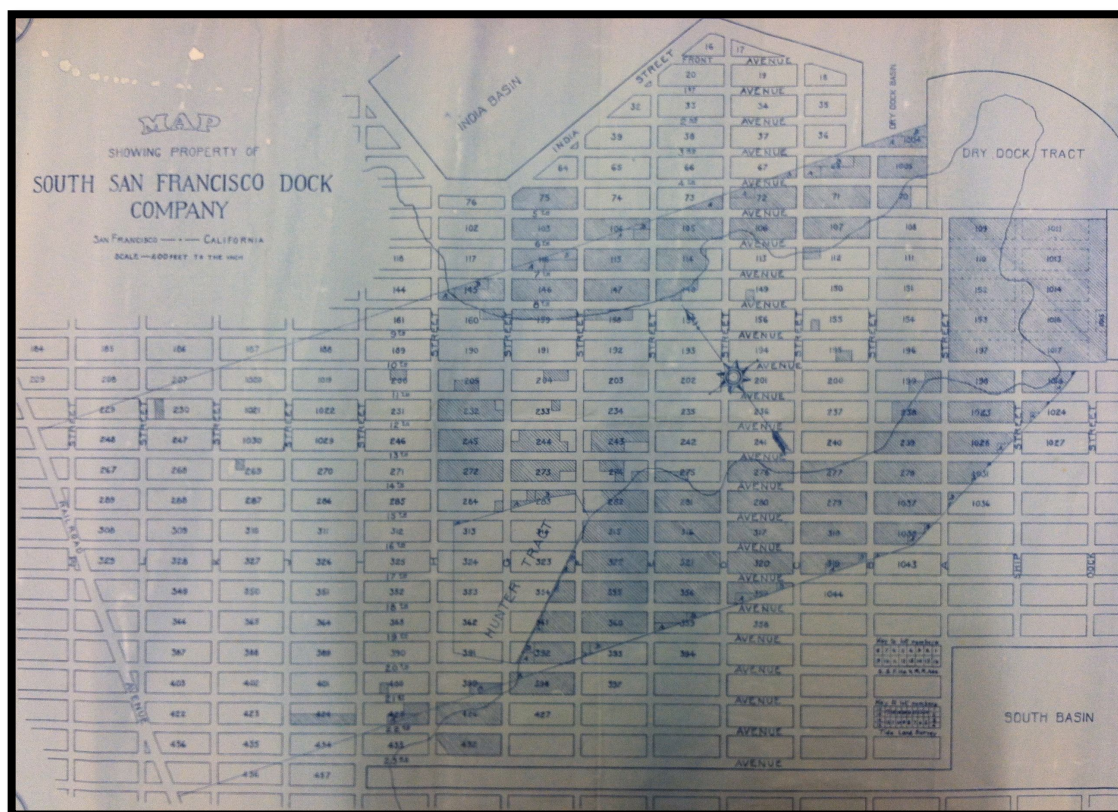


Image 3. South San Francisco Dock Company property map. The Hunters Point promontory, imagined as subdivided lots (UC Berkeley Earth Sciences Map Library).

The *Chronicle* journalist had travelled to Chinese fishing camps in Hunters Point in 1889, a little less than a decade before the end of the Spanish American War, in 1898, in which the U.S. annexed the Philippines from Spain as its colony. U.S. militarization in the Pacific Ocean was supported by iron foundries and shipyards that had developed around Potrero Point, north of Hunters Point, including Charles Schwab’s Bethlehem Steel Company (Brechin 2006). In 1905, Schwab purchased the shipyard at Hunters Point, and its shipbuilding and repair operations were subsidized by the U.S. Navy, which had recognized the strategic value of the shipyard as a site to repair its battleships (Dow 1973). The opening of the Panama Canal in 1914 also motivated Schwab to expand, with additional dry docks at the Hunters Point shipyard, in anticipation of business from the large ships that would soon reach San Francisco through the new canal.

In the early twentieth century, industrial development in the Bay Area had shifted away from the city of San Francisco to suburban areas in East and South Bay, where land was cheaper and the working class less organized (Walker 2004). At the same time, San Francisco business interests struggled against this industrial dispersal, seeking to develop the city’s manufacturing industry in the southeast, near Hunters Point. In 1912, the *San Francisco Call* reported on the need for more factories in San Francisco, and noted the ideal location for these factories was at India and Islais Creek basins – immediately to the north of the Hunters Point promontory (and today, considered part of the neighborhood of Bayview-Hunters Point). According to the *Call*, “the project for reclaiming land and

construction of extensive docks in the Islais Creek and India basins is certain to result in building up in a few years time a great factory and warehouse district in the southeastern part of the city... The business interests of San Francisco have long been anxious to keep manufacturing interests here and to induce plants to establish themselves either in the city proper or on the peninsula” (“Great Opportunities Offered to Manufacturers and Wholesalers”).

By the 1920s, San Francisco civic boosters, responding to growing labor radicalization in the city, had identified tourism and the military as future economic growth strategies (Cherny and Issel 1981). For San Francisco elites after World War I, defense-related industrialization in the southeast seemed essential to city’s continued economic growth. The Civic League of Improvement Clubs and Associations submitted a report to the US Congress in 1920, making a case for Hunters Point as the new operating base for the Pacific Fleet, arguing that “circumstances dictate that in the interest of the welfare of San Francisco and its future development the entire community must utilize all of its energy to secure the selection of HUNTER’S POINT [sic]”. Although the Commission was unsuccessful in the 1920s, the U.S. Navy ultimately purchased the Hunter Point dry docks from Schwab’s Bethlehem Shipbuilding Company in 1939, on the eve of World War II, and over the next few years it leveled out the rocky Hunters Point hillside to expand the shipyard (Dow 1973).

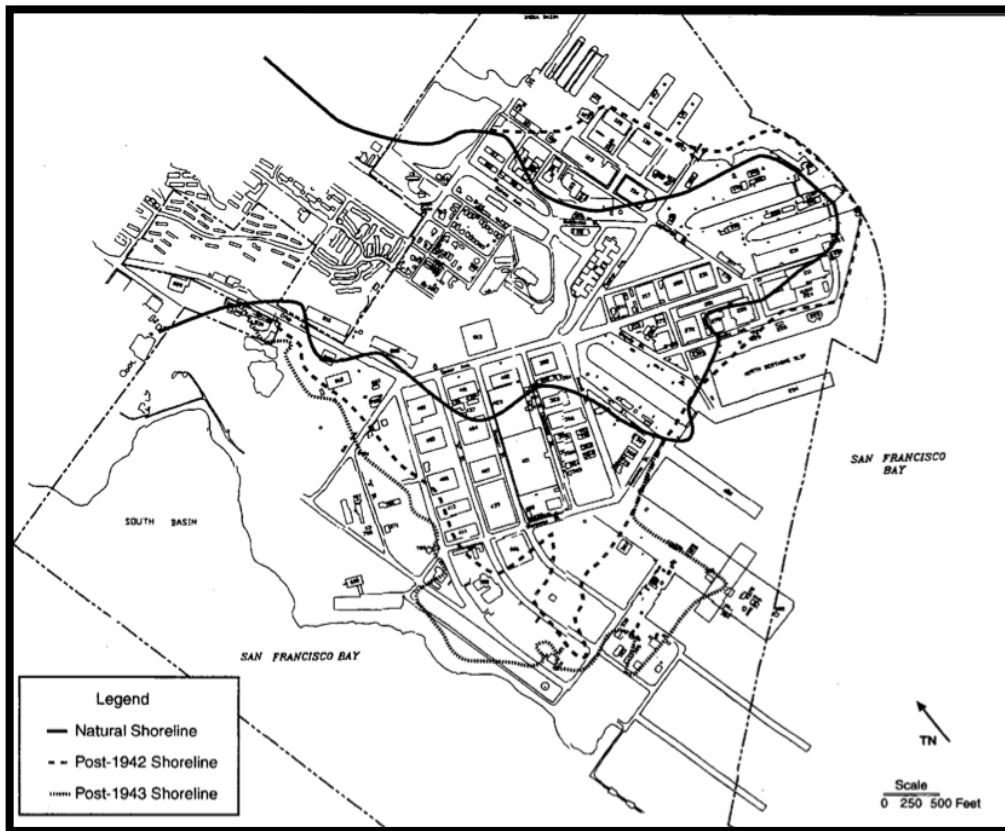


Image 4. World War II Shoreline Alterations at Hunters Point (Archeological Inventory and Assessment of Hunters Point Shipyard, 1998).

In this section I hope to have shown how the Hunters Point Shipyard and southeast San Francisco developed in relation to nineteenth century industrial capitalism in California and U.S. imperial interests across the Pacific Ocean, including their ship-based transportation networks. Through World War II and postwar nuclear testing in the Pacific Ocean, U.S. imperialism would expand across the Pacific Islands in new ways, connecting Hunters Point to the Marshall Islands, a process I examine in the fourth chapter of this dissertation. At the same time, in the second half of the 1950s, because of new shipping technologies San Francisco would lose much of its maritime industry to the Port of Oakland. In place of working piers, auto-wrecking operations and vacant lots illegally filled with industrial and municipal trash emerged along the Hunters Point waterfront.

In the following two sections of this chapter I examine the migration of African Americans from the U.S. south to San Francisco during World War II, and the cultural and material production of Bayview-Hunters Point in postwar San Francisco.

Black San Francisco: World War II

In February 2010 I interviewed Willie Ratcliff, the editor of the local paper, the *San Francisco Bayview*, at his home office on Third Street, which the main commercial corridor of southeast San Francisco. In the late nineteenth century, Third Street was a rickety road that ran across Islais Creek basin – most likely the route taken by the *Chronicle*'s journalist to visit the Chinese shrimping camps in 1889. Today Third Street marks the boundary between Hunters Point, on the east side of the street, and the Bayview district, to the west. The distinctions between these two neighborhoods remain meaningful to residents in the southeast.

Ratcliff was born in Shelby County, Texas, on the border of Louisiana, near Shreveport. He grew up on his family's farm, but went to high school in Houston, when his father went to work at the shipyards in Orange, Texas, during World War II. "Everyone worked at the shipyard!" he told me. "You either came to California, or you went to the shipyard in Texas". Ratcliff moved to San Francisco when he was seventeen, in 1950, following his brother, who had served in the war. "But I fell in love with it when I was about seven years old," he told me.

I read about it, and then would go down to the movies – back then we paid nine cents to go to the movies – and of course we had to sit way up in the back, and all the whites sitting down below. But they showed San Francisco, and the bridge, and I said, 'that's where I'm going'.

I was curious: at the age of seven, did he feel that San Francisco would be different for him than Texas? "Well", he thought for a moment, "I thought it was going to be a good opportunity for me." Ratcliff would have been around seven years old in 1939. Between 1939 and 1940, the artist Jacob Lawrence painted "The Migration of the Negro" from his studio in Harlem. Lawrence's sixty captioned panels depict the shift in black population from the rural south to the urban and industrial north. Collectively, they tell an ambiguous story of how, "[t]he Negro, who had been part of the soil for many years, was now going into and living a new life in the urban centers," according to the caption for

Panel 7 of the series (Capozzola 2006). Lawrence read novels, clipping files, and listened to oral histories of southern migrants at the 135th Street branch of the New York Public Library, in preparation for his paintings. Some of Lawrence’s paintings depict a sense of hope, of flight from the Jim Crow south, in the panels of people moving, with a sense of direction, across rural landscapes, or at train stations, their bags packed. Other panels challenge uncritical accounts of urban life for former black southerners, as in Panels 28 and 29, which show white labor agents recruiting black workers in the south, and then using them as scab labor in factories in the north (Capozzola 2006).

Black Population in San Francisco

Year	Number
1900	1,654
1910	1,642
1920	2,414
1930	3,803
1940	4,806
1950	43,460

(US Census data, from Broussard 1993)

During World War II, military industrialization in places like Hunters Point shifted the geography of the Great Migration. Prior to 1940, the black population in San Francisco was small, in comparison with other California cities like Oakland or Los Angeles. Both cities had larger manufacturing industries than San Francisco, and were also the terminus of major railroad lines (Broussard 1993, Wilkerson 2010). In San Francisco, at the turn of the twentieth century, anti-Chinese housing restrictions regulated where the Chinese could live, but similar restrictions did not exist for African Americans until the 1920s, at the point when blacks began to settle in the city in larger numbers, and mostly in the Western Addition/Fillmore district. The lack of housing restrictions until the 1920s was less reflective of anti-black racism than of the small size of the black population in the city at the time (Broussard 1993). According to historian Albert Broussard (1993), during World War II (or between 1940 and 1945) the black population in Oakland, where the Moore Dry Docks were located, grew by 340 percent (in absolute numbers, an increase of 37,327 people); in Richmond, north of Oakland, on San Francisco’s East Bay, and where the Kaiser shipyard was located: between 1940 and 1947, the black population grew by 5,003 percent (in absolute numbers, by about 14,000 people); and in San Francisco, between 1940 and 1945, by 665 percent, or almost 30,000 people – evidence of the tremendous impact of wartime military industrialization, and in particular of shipbuilding, in black migration. Most wartime black San Francisco migrants moved to the Western Addition/Fillmore district, which had housed the largest black population prior to World War II, and where there were new vacancies on as a result of forced Japanese internment (Broussard 1993).

Willie Ratcliff had first lived in the Western Addition/Fillmore district when he moved to San Francisco. “Most people did when they first came here”, he told me. By the

1950s, the Western Addition/Fillmore District housed a large and vibrant black community, which poet Maya Angelou recalls, in her memoir *I Know Why the Caged Bird Sings*, as “San Francisco’s Harlem”. The area was nationally known for its jazz clubs, and housed a politically active black community (Pepin 2006, Brahinsky 2012). For a few months Ratcliff worked at a rope factory north of Hunters Point, making the kind of ropes used to tie up big ships. Soon he found a job as rigger at the Hunters Point Shipyard, loading and unloading machine guns and other heavy objects from ships. “I was just old enough,” he told me, “I couldn’t get in there until I was eighteen”. I could imagine Ratcliff as an exuberant seventeen year old, waiting out the months before he could work at the shipyard, representing, as he said of San Francisco, a good opportunity.

After World War II, many of the Navy’s hastily and poorly constructed housing units in Hunters Point were transferred to the San Francisco Housing Authority. They became public housing developments inhabited primarily by blacks who had little choice of where else to live in the city. Crowded housing conditions developed in Hunters Point during the 1960s as the city’s Redevelopment Agency displaced thousands of black residents from the Western Addition/Fillmore district, as a result of urban renewal projects, and which some Bayview-Hunters Point residents still refer to as “Negro removal” (Hartman 2002, Brahinsky 2012). Beginning in the 1950s, the San Francisco Redevelopment Agency (newly formed at the time) evicted people and bulldozed entire city streets. Similar large-scale razings of run-down neighborhoods – especially near central business districts, as with the Western Addition/Fillmore – were taking place in cities across the country at the time (Berman 1982, Fogelson 2001). Urban renewal legislation relied on older, 1920s-era slum clearance policies and the Federal Housing Acts of 1949 and 1954, which provided federal funds for newly formed local redevelopment agencies to acquire “slums” (or what they designated as slums), tear down the existing buildings in the area, and replace them with “redevelopment” (Fogelson 2001). In practice, urban renewal programs across the country targeted growing black neighborhoods near central business districts – much like the Fillmore/Western Addition, and in general, most evicted slum dwellers were unable to return to their former neighborhoods (Massey and Denton 1993). In the Western Addition/Fillmore, four thousand households were moved out of the area by the San Francisco Redevelopment Agency, and most were unable to move back (Hartman 2002). Maya Angelou, writing about her experience living in the Fillmore, discovered, along with many other black San Franciscans at the time, that San Francisco’s liberal ideal rang hollow. As she recollects, “San Francisco would have sworn on the Golden Gate Bridge that racism was missing from the heart of their air-conditioned city. But they would have been sadly mistaken” (2003 [1969], 213).

For many black Bayview-Hunters Point long-time residents, redevelopment in the southeast today is considered a continuation of the racist urban renewal practices of the 1960s. Rachel Brahinsky has examined the legacy of the Fillmore in the minds of many black Bayview-Hunters Point residents as the “Fillmore ghosts”, in part symbolizing “racial and economic cleansing, and a warning about the ways that government turned against black people [in San Francisco]” (Brahinsky 2012, 102). In 2006, Willie Ratcliff had led a referendum campaign to reject the San Francisco Redevelopment Agency’s plan to take control of 1,500 acres of Bayview-Hunters Point. Ratcliff’s referendum had gathered more than the required number of signatures needed to pass, but was ruled

invalid by District Attorney Dennis Herrera because the signature gatherers had not shown the 60-page Redevelopment Agency plan to voters who signed the petition, as a reference (Jones 2006). When I interviewed Ratcliff at his home on Third Street in February 2011, he had taken me into his backyard to show me his raised beds of fruits and vegetables. Down below his second unit balcony I could see the big, cardboard black coffin he had used as a prop during the campaign, to symbolize what he and others felt would be the effects of the Redevelopment Agency in Hunters Point.

Becoming Bayview-Hunters Point: Postwar Urbanization

On a Saturday morning in October 2011, I sat with Patricia on her neighbor's porch steps on Quesada Street, a few blocks south of Willie Ratcliff's offices on Third Street. Patricia's neighbor, Thomas, runs the Quesada Gardens Initiative, which oversees five gardens in the Bayview, and Patricia sits on its board of directors. We watched the garden volunteers uproot weeds and cut back purple mallow trees on a broad median strip that runs up the length of Quesada Street, in front of her and Thomas's houses. Before Rosemary and Henry, two elderly black residents of the block of Quesada Street, began planting flowers and vegetables on the median strip in 2002, it was a neighborhood dump site, littered with broken bottles and trash bags, old furniture, leaking car batteries, and at times, entire cars. Sneakers hung from telephone wires crisscrossing the street, signaling the area as part of the drug trade in the southeast. The gardening organization on Quesada Street formed in the early 2000s as a group of neighbors began to collect water for Rosemary and Henry, and plant flowers themselves. Eventually, as Rosemary later described to me, they began planting sweet potatoes, collards, and peanuts on the median strip too – all southern crops. What motivated the neighbors to remain organized throughout the 2000s was also their hopes of riding the block of unwanted drug users and dealers. Patricia, for example, was especially concerned about her young son, who was in elementary school at the time. Today, Patricia is considering moving to Oklahoma, where her mother's side of the family is from. The houses are cheaper than in San Francisco, and she feels safer there⁴.

We had been talking about the hazardous remediation work at the shipyard, and whether the Navy could actually clean up the toxic waste there. Would she live at the shipyard? I asked. It was a question I had posed to other long-time Bayview-Hunters Point residents, curious about how they felt about the new development. "I don't know," she said, "It's a good question." She paused and reflected, "I used to live there – in the projects on Palou Street, right outside the shipyard. It used to be called Navy Road – they were old barracks". Patricia paused again, thinking. "They tore them down recently", she finally said. Lennar had demolished the older housing units to clear the ground for its new development project.

Born and raised on Navy Road, Patricia's life in Hunters Point and the Bayview tells a larger story of post-World War II urban American, and more specifically of military boom towns in California like Richmond, Oakland, Vallejo, and San Francisco. As with many of her contemporaries who grew up in Hunters Point, Patricia is one generation removed from the Jim Crow south. Her grandparents, on her father's side, had moved to San Francisco from Arkansas in the 1940s. After her father served in the Korean War, he

joined his parents in Hunters Point and took up a job in construction – not at the shipyard, but part of the overall boom in jobs at the time. In Hunters Point, he met Patricia mother, who had recently moved out from Oklahoma – she worked in domestic service.

In the 1950s and 60s, white San Franciscans in the southeast benefitted from racially-discriminatory federal mortgage loans, which allowed them to leave the city and purchase homes in the growing Bay Area suburbs. Nation-wide, these loans, informed by racialized bank-lending maps – which drew red lines around black neighborhoods to signify risky investments – drew people, jobs, commerce, and a tax base away from low-income urban areas, like southeast San Francisco (Massey and Denton 1993, Self 2003, Avila 2004). The racial suburbanization of the metropolitan U.S. produced what the U.S. Commission on Civil Rights called a “white noose” surrounding (or, more accurately, strangling) the black inner city (Self 2003).

Black Population of southeast San Francisco

Year	Number	Percentage of Population
1940	7	-
1950	12,207	21.6 percent
1960	17,553	46.6 percent
1970	20,464	71.6 percent
1980	15,769	73.6 percent

(U.S. Census data, reported in San Francisco Planning Department 1987)

This demographic shift is reflected in US Census data. U.S. Census schedules counted 7 black people living in Hunters Point in 1940, reflecting both the small number of blacks living in the city at the time and the fact the largest black population lived in the Western Addition/Fillmore. By 1950, this number had grown to 12,207 people – although this was still only 21.6 percent of the population in the southeast (San Francisco Planning Department 1987). Between 1950 to 1970, the total population of Bayview and Hunters Point declined by almost half: from 56,508 people in 1950 to 28,470 people in 1970, reflecting the decline of the metals and maritime industry, and the lure of homeownership to the suburbs. Measured by US Census racial categories, this period shows other significant demographic changes. The percentage of the whites in the southeast dropped from 75.5 to 13.3 percent, in that twenty-year period. At the same time, the percentage of blacks living in the southeast grew from 21.6 to 71.9 percent (San Francisco Planning Department 1987). These numbers reflect “white flight” and racial segregation in San Francisco.

In 1970, Patricia’s family moved from public housing units in Hunters Point to a house across Third Street, in the Bayview district. That afternoon, as we watched the gardeners on the Quesada Street median strip, Patricia pointed to a blue-shingled house across the street, and told me her family had moved there in the 1970s, as renters. “But when the landlord put it up for sale, we bought our place over here”, she, pointing to the white stucco home behind us, where she lives with her mother and son. “Then it was just called “‘the Bayview’, and it was mostly white”, she added. This particular block of

Quesada Street, where we sat, is on the west side of Third Street, away from the shipyard and the waterfront.

When I spoke to Espanola Jackson over the phone in 2011, she had also made this racialized distinction between Bayview and Hunters Point. I had asked Jackson whether she considered “the Bayview” a black community. At the time, I was unaware of the ways most long time residents distinguish between the two places, and I used a term I thought was shorthand for the whole area of Bayview-Hunters Point. Jackson corrected me. “The Bayview has never been a black community,” she said. “We were on the east side of Third Street – that’s where the black folks were. On the west side were the Italians and other groups.” In the context of a shifting housing market in the postwar years, with many vacancies in the Bayview, with its landscape of single-family housing, many black families like Patricia’s were able to leave the crowded housing conditions in Hunters Point and rent or buy homes in the flatlands. At the same time that black families moved into homes in the Bayview, and as white residents moved out of the southeast, the hyphenated terms Hunters Point-Bayview and Bayview-Hunters Point emerged. In the 1960s, these terms were used interchangeably. The local paper, *The Spokesman*, often referred to the area as Hunters Point-Bayview, and in the late 1960s, a black San Francisco physician helped establish the Hunters Point-Bayview Community Health Service, and ran a newsletter with the same title.

Patricia marks this new sense of place with the 1966 uprising on Third Street. In late September 1966, a black teenager named Matthew Johnson was shot in the back on Navy Road after running away from a white police officer⁵. According to police reports, the officer mistakenly thought Johnson had stolen a car (and the officer was later given the verdict of “excusable homicide”). Crowds formed at various sites in the neighborhood through the day – at the site of his killing, at the Economic Opportunity Center (EOC) office on Third Street, and at the Bayview Opera House, also on Third Street (what was then called the Bayview Community Center), where San Francisco Mayor John Shelley came to speak on the evening of the shooting. The three-day protest in southeast San Francisco was tamer than the major uprisings in cities like the Watts riots in Los Angeles, the year before, or in Detroit. Still, Mayor Shelley called in the National Guard and units of the Highway Patrol. The front page of *The Spokesman* in 1966 shows men marching down Third Street with bayonets in hand and protective helmets. Jackson remembered the Third Street demonstrations to me as the moment she became involved in local politics. “I saw all of these guards on the street, and one of my children was on Third Street, at the store”, she told me over the phone. “I was scared so I went to the EOC meeting, to hear what was happening in the community.” The demonstrations against Matthew Johnson’s murder and her fears for her children had pulled her into the EOC office and 1960s anti-poverty politics in the southeast.

Patricia mentioned other effects of the 1966 uprising, which she downplayed in our conversation – she felt they were insignificant compared to Watts. More significant to her was the aftermath of the event. Stores on Third Street closed, and it seemed like even more people started to move away. I asked her whether she felt that the new racial composition of the Bayview explains why the two places became linked with a hyphen, becoming “Bayview-Hunters Point.” She nodded and said, “after the riots people started seeing up as one area, and the news media linked us together”.

Both Patricia and Espanola Jackson use the term Bayview-Hunters Point casually to refer to the southeast neighborhood, although it was clear from my conversation with Jackson that she also maintains a firm distinction between the two places. Hunters Point Family, a youth and gardening nonprofit I examine in the last chapter of this dissertation, is clear about the distinction between the two neighborhoods on its website. “According to city districting (and most people outside the community), Bayview Hunters Point is considered one community”, the website explains in its “About” section. “However, Bayview and Hunters Point are two separate communities, each with significantly different demographics”. Hunters Point still has a significantly larger black population and higher percentage of families living in poverty. “Geographically”, as the website continues, “Bayview consists of privately owned homes on the flatlands, while Hunters Point consists of subsidized and public housing on the hill” (Hunters Point Family 2013). I suggest this unstable hyphen between “the Bayview” and “Hunters Point” is a product of racialized postwar metropolitan development, and “Bayview-Hunters Point” an example of “the ideological labors place is made to perform” (Nassy-Brown 2005, 31).

“The San Francisco America Pretends Does Not Exist”

In 1963, the writer James Baldwin visited Hunters Point. By then San Francisco’s southeastern neighborhood had been steadily losing its population – which tripled during the war – along with its manufacturing and maritime jobs. Near the Hunters Point Shipyard, a landscape of temporary wartime structures-turned-public housing units had deteriorated and many vacant lots had become junkyards. Baldwin interviewed the area’s growing number of African American residents about their experiences of racism in a city known for its liberal ideals, documenting the lives of people faced with limited job opportunities, a threatening police presence, substandard public infrastructure, and industrial pollution. Speaking to a crowd of reporters assembled before the well-known, worldly writer, he summarized a feeling articulated by many Hunters Point residents at the time, proclaiming “this is the San Francisco America pretends does not exist” (KQED 1964).

In going Hunters Point, Baldwin hoped to show “the real situation of Negroes in the city, as opposed to the image San Francisco would like to present” (KQED 1964). He was led through the neighborhood by Orville Luster, the black director of Youth For Service (a program of the American Friends Service Committee, funded by the Ford Foundation) which provided service-oriented work for young men in Hunters Point who were otherwise left out of San Francisco’s booming, postwar economy. In a short period of time, between 1958 and 1965, unemployment in the southeast had doubled, in absolute numbers, from 41,300 to 78,900 (Development Research Associates 1968). Between 1965 and 1970, unemployment in Bayview-Hunters Point continued to rise, and the shipyard itself closed in 1974). This sharp loss of jobs took place within an overall economic boom in San Francisco. Between 1965 and 1970, employment in the city overall grew by 12 percent, or increased by 60,000 jobs, most concentrated in the financial and services sectors (Arthur D. Little 1975). Born in Oklahoma City, Luster had served in the Army during World War II, and later worked at the Hunters Point Shipyard, before his career in youth service work. KQED, a public broadcasting station in northern California,

documented Baldwin's tour in a film titled "Take This Hammer". The classic labor song popularized by folk and blues musician Leadbelly and reinvented by Odetta had become a ballad of the Civil Rights movement – also captured by Baldwin's visit to Hunters Point.

In 1963, Baldwin published his book of essays, *The Fire Next Time*, and had recently finished *Blues for Mister Charlie*, a drama loosely based on the murder of Emmett Till⁶ (Mitchell 2012). The play was first staged in 1964, the same year he published his that KQED broadcasted "Take This Hammer". *Blues for Mister Charlie* depicts racial violence in the U.S. south, focusing on the region's deadly mixture of religion and the law. In the opening scene, a white shopkeeper, Lyle Britton, stands over the dead body of Richard Henry, a young black man he has just killed, and the play ends with Britton's acquittal in a racially segregated courtroom⁷. According to Baldwin's stage directions, during the courtroom scenes, "the audience should always be aware of the steeple of the church, and the cross" (Mitchell 2012).

As a writer and activist in the 1960s, Baldwin was involved in the Civil Rights movement then unfolding across former slave states, like Alabama. Yet in "Take This Hammer" he makes it clear that the violence of racism was not specific to that region of the country. "There is no moral distance [...] between the facts of life in San Francisco and the facts of life in Birmingham", Baldwin tells an interlocutor in the film, and this comparison between San Francisco and the South becomes one of the film's dominant themes. It would have been a powerful statement of recognition for Orville Luster and other black San Franciscans, most who had recently migrated from southern states.

A young black man interviewed by Baldwin in "Take This Hammer" is explicit on this point. In the scene, the man stands with his back against a white, concrete building. He speaks into Baldwin's microphone and also to a crowd of other men assembled before him – likely associated with Luster's Youth For Service. Baldwin asks the man why he can't find work, and the man explains that there are no jobs for him or other black men in San Francisco. For him, this political economic fact – dutifully recorded in numerical figures by US Census and San Francisco city planning surveys – represented a form of violence. "They talk about the south," the man says into Baldwin's microphone, "the south is not half as bad as San Francisco. You want me to tell you about San Francisco. I'll tell you about San Francisco. They white man, he's not, he's not taking advantage of you out in public like they doing down in Birmingham. But he's killing you with that pencil and paper, brother" (KQED 1964). The man's friends encourage him from the margins of the camera's frame. Though he remains nameless, a viewer can assume his parents had journeyed to San Francisco from the south at some point within the previous two decades. The legacies of slavery in the south would have remained fresh in their minds, and one ought to hear his words with an image of their journey across the country, seeking to escape a racist society in San Francisco but finding it again, in different forms.

A Right to the City

In 1964, a year after Baldwin visited Hunters Point, President Johnson declared the War on Poverty, the federal state's term for a set of legislation that included the creation of Social Security and the Office of Economic Opportunity, and was part of a broader policy agenda Johnson's administration called the "Great Society". Local Economic

Opportunities Offices were established in cities across the country to administer federal funds and anti-poverty programs like Head Start, Legal Services, and Job Corps. Robert Self (2003) shows how that the War on Poverty opened a new political landscape for black activists in Oakland, across the bay from Hunters Point, as they struggled to realize the promises of Johnson's Great Society. Black activists in Oakland identified the federal, war on poverty mandate of "maximum feasible participation" as a fertile site for challenging local power structures in the East Bay. Through this federal mandate, activists attempted to realize a basic tenet of the Great Society liberalism: the notion that if people had the right skills, education, and motivation, they could take advantage of postwar economic growth and opportunity. Oakland's established political structure resisted the federally imposed anti-poverty programs precisely because they challenged the distribution of power that supported their social and economic privileges. Self shows how the Black Panther Party emerged in Oakland in part due to the frustrations of black activists with the limits of liberalism underlying Johnson's agenda. As he shows, the high rates of black unemployment in Oakland was a structural effect of political economy and the racial distribution of jobs – a situation that could not be solved through early childhood education, skills training, or other individual-level transformation efforts emphasized by War on Poverty legislation.

Self also situates the Black Panther Party within the historical geography of Oakland and the East Bay, showing the relationship between social movements and the production of place. In part because it was the terminus of the Central Pacific line of the transcontinental railroad, completed in 1869, Oakland was home to an established, middle-class, and politically active black community before World War II – in contrast to the black population in San Francisco. In 1929, one-third of black wage earners in Oakland worked for railroad companies, and many worked as porters with the Pullman Palace Car Company, which had established service to the West Coast in 1870 and hired black workers to wait on first class passengers (Johnson 1996). In the 1920s Oakland's black porters were organized by A. Philip Randolph and the Brotherhood of Sleeping Car Porters. The union was headquartered in Chicago, but its second president, after Randolph, was Oakland porter C. L. Dellums (Johnson 1996, Self 2003). Many of the leaders of the Black Panther Party had grown up in this politically active milieu. In the postwar years in the East Bay, as Self shows, racialized metropolitan urban development, which allowed white middle- and working-class people to buy homes in the newly constructed East Bay suburbs, pulled jobs and a tax base out of areas like West Oakland, creating the impoverished landscape targeted by anti-poverty legislation.

In contrast to Oakland, in the 1960s, most black residents in Bayview and Hunters Point had only lived in San Francisco since World War II – for twenty years or less. As Rachel Brahinsky (2012) shows, the more active black political organizations in San Francisco had developed in the Western Addition/Fillmore neighborhood, which in the 1960s was being torn down by the city's Redevelopment Agency. Still, in the 1960s, Bayview and Hunters Point residents established organizations that took advantage of federal anti-poverty legislation, especially regarding the issues of housing and health.

Housing issues galvanized Hunters Point residents and the local press, and *The Spokesman* often reported on the topic, especially the conditions of the public housing units near the Hunters Point Shipyard. The paper wrote of "rats and big as coke bottles" in Alice Griffith public housing development ("City should do something for our

neighborhood”), and published pictures of apartments covered in black mold. During the campaign season for a city supervisor election in 1965 the paper observes, with irony, the unusual sightings of city politicians in the neighborhood, and directs their attention to some of the ways the area is forgotten by the city during the rest of the year. “There’s lots of trash out in the streets, waiting for the street cleaning crew. The street cleaning crews are so seldom seen in our neighborhood that one gets the impression that they clean our streets in their spare time” (*The Spokesman*, September 29, 1965).

In the 1960s and 1970s, Bayview and Hunters Point residents lived with many other forms of waste. By the 1960s, animal-related industrial had moved away, leaving vacant buildings and lots that became junkyards. South of Butchertown was the PG&E power plant, near Islais Creek. An economic development report from 1975 found that half of the land around Islais Creek and India Basin was used for open storage and salvage yards. One third of all land zoned for industrial use in Islais Creek was vacant, while in India Basin the vacancy rate was 66 percent, in both cases primarily because of a decline in metal products and wholesaling (Arthur D. Little 1975). From the logic of city elites, downtown, the neighborhood seemed ideal to build a new garbage-burning incinerator in 1975, next to the existing Hunters Point power plant. This incinerator never materialized, but in a similar proposition to build a second power plant, in the same spot, emerged thirty years later. In the intervening years, the waterfront remained filled with trash and dirty auto wrecking operation. The 1975 development report suggests what it might have been like to live in the housing units on the Hunters Point ridge, uphill from the shipyard, the power plant, and the auto-wrecking yards along the water. The report recommends to the city, “Efforts also need to be made to monitor and assure compliance with environmental standards by open-air uses and to minimize dirt and waste material generated on streets in the area from movement of materials to and from the salvage, storage, and auto-wrecking yards.” (Arthur D. Little 1975).

In 1965, the Bayview-Hunters Point Community Development Corporation formed in 1965 under the leadership of local activist Osceola Washington, and it struggled with the San Francisco Redevelopment Agency during the late 1960s to include Hunters Point tenants in decisions regarding the redevelopment of those housing projects. In March 1966, *The Spokesman* reported on a protest against the city’s Housing Authority. Sixty Hunters Point residents had packed a Housing Authority Commission meeting to protest the unfair eviction of a tenant and his two-year old daughter from the public housing units, because he could not pay rent that month. After the city’s housing commissioner refused to address the eviction at the meeting, Bayview-Hunters Point residents blocked him from leaving the room, while the chairman of the neighborhood’s Inter-Block Organization (a EOC organization), read from a list of demands, articulating the public housing tenants “right to the city” (*The Spokesman* March 19, 1966). Later that year, the Hunters Point Tenants Union led a successful citywide rent strike against the Housing Authority (*The Spokesman* June 1967). Frustrated with the Redevelopment Agency’s unfulfilled promises to build affordable homes in Hunters Point, in 1970 a group of fifteen residents traveled to Washington DC to lobby for funds from the Department of Housing and Urban Development (HUD). HUD ultimately approved \$40 million for redevelopment in Hunters Point, although the new housing on Hunters Point hill funded by HUD had the effect of evicting people who lived in the war barracks which were torn down – similar to what happened in the Fillmore, though on a smaller scale (Brahinsky 2012).

While *The Spokesman* remained critical of city agencies and politicians, it often reported favorably on anti-poverty work in Hunters Point. During the late 1960s, the article ran a recurring article titled “Know Your Welfare Rights”, which sought to inform Bayview-Hunters Point residents of the new political landscape opened up through anti-poverty legislation and organizations. In Hunters Point this included Inter-Block Council, which coordinated nine block organizations in Hunters Point, and the Area Planning Board, which approved all federal-funded anti-poverty programs in the area. The Bay Area Neighborhood Development Foundation in Hunters Point, also set up with federal funds, was a consumer protection service, and it supported older organizations like the Neighborhood Co-op Supermarket, which was established in 1960 after Bayview residents targeted neighborhood retailers for discriminatory hiring practices and low-quality merchandise.

The pages of *The Spokesman* also show how Bayview and Hunters Point residents had come to regard the southeast as a black neighborhood. In January 1968, in the context of propositions to tear down the old Butchertown district and build a light industrial park near India Basin, the paper reported on the idea of developing African-oriented entertainment and commercial areas of Hunters Point, to attract local tourism and stimulate neighborhood businesses. These plans would include architectural designs with an African motif and African Trade Center with imported products for sale.

The relationship between place and race was also articulated in the pages of the *Hunters Point-Bayview Community Health Service News*. The neighborhood’s Community Health Service was established in 1967, and received federal funding from the U.S. Public Health Service and other anti-poverty programs in San Francisco. The Community Health Service drew connections between health problems and social and economic conditions of people living in the southeast, and it engaged many of the black activists involved in redevelopment politics and anti-poverty programs in Hunters Point at the time (Coleman 1969). Within the discourse of community health, the primary target was the “life style of the poor, with regard to their attitude and behavior toward health care”, although the paper also connected these attitudes and behaviors to “social, cultural, and economic obstacles beyond their control”. Its newsletter included articles titled “Can Cancer Be Prevented” alongside reports on “New Programs for Training Jobless”. As part of community health in Hunters Point-Bayview, the paper also wove in articles on black history and contemporary figures like Martin Luther King, Jr. In several issues, the *Health Service News* advertised the Black Scholar Book Club, which met in Sausalito, and had Amiri Baraka on its Board of Directors.

Racialization and Redevelopment

In 2006, the San Francisco Redevelopment Agency declared 1,500 acres of Bayview-Hunters Point “blighted”, gaining jurisdiction over this area, to which it could subject to particular practices of government. Current redevelopment projects are funded through a financial tool called tax increment financing, or TIF, through which property taxes increases are collected in specified “blighted” neighborhoods to fund redevelopment projects (Weber 2010). In contrast (and in part, because of) to the city’s urban renewal project in the Western Addition/Fillmore in the 1960s, the Redevelopment Agency in the

2000s did not use eminent domain to evict people and tear down large areas. Rather, TIF-financed projects work in a more piecemeal process (Tom Evans, pers. comm. 2011). Still, many black Bayview-Hunters Point residents do not want to be governed by the Redevelopment Agency, which they associate with the Fillmore/Western Addition and racialized urban displacement.

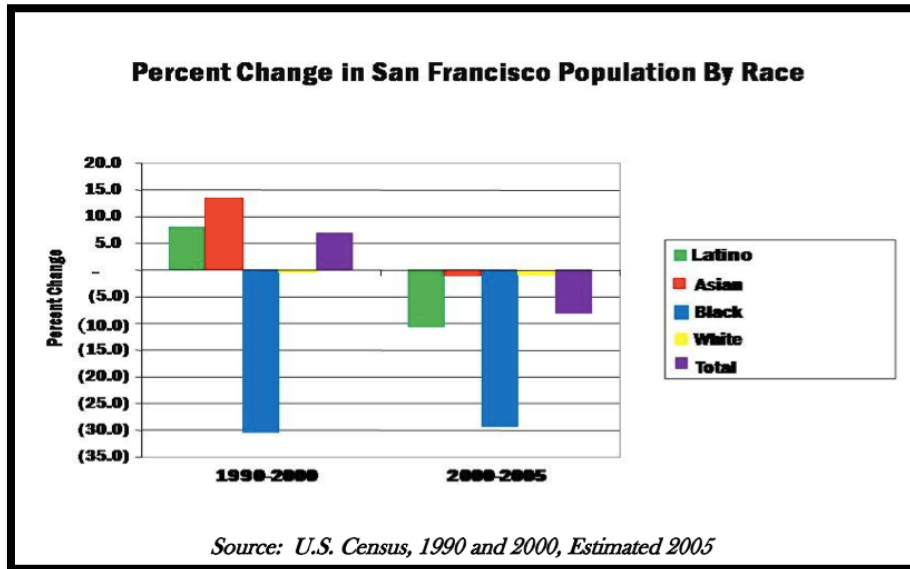


Image 5. *Percent Change in San Francisco Population by Race (African-American Outmigration Report, 2009). The city's black population experienced the most dramatic population loss between 1990 and 2000, and between 2000 and 2005.*

In January 2011, I attended a PAC meeting, months before Governor Brown disbanded the Redevelopment Agency. The meeting was held at the Whitney Young Child Development Center on Hunters Point hill. Inside the school's multipurpose room, plastic chairs were arranged in front of a stage, with coffee and cookies to the side. I sat in one of the chairs facing a line of foldout tables, where the PAC board members sat in front of microphones, facing back at the audience. Fred Blackwell, the African American director of the city's Redevelopment Agency at the time, also sat in front of one of the microphones. That evening, most of the plastic chairs were full, and during the course of the evening's discussion, I gathered that most people in the audience were Bayview-Hunters Point residents.

Governor Brown had recently announced the de-funding of municipal redevelopment agencies, part of his attempt address California's budget crisis in 2011. A large part of the discussion that evening focused on how this would affect redevelopment projects in Bayview-Hunters Point. One of the first topics on the agenda, however, was an older proposal by local businessman and PAC board member, Lionel, to incorporate "Afro-Centric design elements" in new construction in Bayview-Hunters Point. For Jackson, these design elements represented an opportunity to encourage tourism and black-owned businesses, and to recognize Bayview-Hunters Point as a black neighborhood. "It's about joining the rest of San Francisco's ethnic communities, so we can thrive like the rest of San Francisco", he explained to the audience and the rest of the

PAC board. Lionel had advocated for this proposal before, and that night he voiced his frustration that the Redevelopment Agency was not fully supporting the concept. He interpreted this lack of support in the context of black population decline in the city. “If you are afraid to do something Afro-Centric, then don’t expect me to be here,” he said, directing his comment to Fred Blackwell and other members of the Redevelopment Agency.

I had recently read about Lennar’s design plans for an “International African Marketplace” at the Hunters Point Shipyard, and had a cynical reaction to the concept, as I read it in the pages of the development company’s report. I saw Lennar’s development, more broadly, as part of a process of displacing of former shipyard workers who had migrated to California from former slave states, and the “African” marketplace – geared to cultural consumption – seemed to obscure this process (c.f. Davila 2004). In listening to Lionel, I realized that my response was too hasty, and that the shipyard’s African Marketplace would represent an important political achievement for him. As buildings firmly placed on the ground, the Afro-Centric design elements could not move away as easily as people. At one register they can be thought to represent a “right to the city”, in the form of redevelopment, which Bayview-Hunters Point residents have campaigned for over many decades. Indeed, the 1960s *The Spokesman* had reported on a similar proposal for an African Trade Center, and an economic strategy emphasizing tourism in Bayview-Hunter Point as a tourist destination. The way Lionel talked about Afro-Centric design also reminded me of Stuart Hall’s observation that “cultural identity... belongs to the future as much as to the past” (1989, 394).

That evening, the topic of what redevelopment in Bayview-Hunters Point would look like without the state-funded Redevelopment Agency dominated PAC agenda. Most people in the audience who spoke that night felt that this was another example of the city’s historical neglect of Bayview-Hunters Point. One PAC board member and black Bayview-Hunters Point resident, who sat behind one of the microphones on stage, said to Fred Blackwell, “It seems like everyone got development, and then it comes to Hunters Point. It’s always Hunters Point, and then everyone else. It’s not a grand conspiracy, but it tends to happen to us anyway.” He added that,

In Hunters Point, we always fought for what we got. We just had the Martin Luther King March, with thousands of people. There was no publicity. When it comes to Hunter Point, it seems everything is frozen. There’s high unemployment here. People are killing each other, they’re dying. We’re not going to be alive to see redevelopment.

Fred Blackwell had responded to him, “Don’t take this personally, it’s statewide”, referring to the fact that hundreds of redevelopment agencies across the state were dissolving, not just in San Francisco, and that Governor Brown’s proposal did not target Bayview-Hunters Point. Espanola Jackson responded to Blackwell’s comment from the back of the room. She stood up and spoke to him and the other representatives from the Redevelopment Agency present at the PAC meeting that evening. “You should be ashamed of yourselves”, she said. “Think back to 1968 and redevelopment then. We’re always the last on the totem pole. The only time we’re first is on the picket lines – that’s how we get things done.” Jackson spoke from many years of struggling to “bring city

services” to the neighborhood, and a lived experience of feeling neglected by many city agencies. As few months later, I interviewed Jackson over the phone, she told me about “Hunters Point, USA”, a sense of place produced in part through the ways that “the city didn’t care about what was happening in Bayview-Hunters Point”, as well as the ways residents organized together, “on the picket lines”.

As I sat down to finish this dissertation in February 2014, Lennar – today, the developer of the shipyard – made a controversial announcement. Following the recommendations of The Mark Company, a San Francisco-based real estate marketing and sales firm it hired to work on branding, Lennar changed the name of its development project to “The San Francisco Shipyard”. According to the president of The Mark Company, “part of the branding has been doing away with the ‘Hunters Point’ part of the name, a place that many Bay Area residents associate with the poorly built public housing that is being rebuilt as part of the shipyard redevelopment” (Dineen 2014, Ross 2014).

My first reaction to this announcement was a sinking feeling that the development project’s new name would have the effect of obscuring the shipyard’s history, but when I visited Lennar’s new website I saw how the branding campaign was actually strategic in its uses of the past. “The San Francisco Shipyard: Established 1870” read the banner across the webpage, referring to the year that the first dry dock, designed by German engineer Alfred Schmidt for the California Dry Dock Company, was completed on the Hunters Point promontory. In smaller print, under the heading, Lennar elaborated this historical connection. “Located near the water with panoramic views of the bay and downtown skyline, the San Francisco Shipyard introduces a collection of new homes crafted from the culture of a historic San Francisco neighborhood.” Using words like “craft”, “culture”, and “historic” conjured a romanticized notion of the area’s late nineteenth century, Anglo-European boat builders – of plucky, pre-industrial craftsman, rather than the military’s toxic industrial shipyard, or of a corporate development company. With this chapter I hope to telescope other histories and social relations into the present, as a way of thinking about the processes of racialization and urban development in the U.S. today, including the powerful and inspirational stories of Bayview-Hunters Point residents struggling against city agencies to make the neighborhood a better place to live.

This chapter has endeavored to show the making of “Bayview-Hunters Point”, but I wonder whether Lennar’s shipyard project might suggest its historical un-making, or at least its contemporary re-making⁸. As Lennar, city planners and long-time Bayview-Hunters Point residents all struggle to remake the southeast, they also struggle with the material and discursive legacy of racialized urban development in San Francisco – one which I hope to have mapped in some detail in this chapter. The following chapters draw on this material and social landscape, examine more closely the relationship between industrial pollution, redevelopment and racialization.

¹ Copra continued to support economic activities in Hunters Point through the 1970s. Between 1947 and 1974 (the same year the Hunters Point Shipyard shut down) the U.S. agriculture firm, Cargill Inc., imported copra to San Francisco's Pier 84, which became known as the Islais Creek Copra Terminal, and was north of the old Anderson Shipyard, in Hunters Point (Schwartz 2008). In the research and writing that emerges from this dissertation, I hope to develop an understanding of Bayview-Hunters Point through these ocean-spanning relationships, tracing the routes of ships that brought people, things, and ideas to San Francisco and contributing to building up this area of the city.

² The report calls the southeast "South Bayshore", which was the planning department's name for the planning area until recently. In the introduction to the planning department's 2010 Area Plan (for Bayview-Hunters Point), it notes that residents desire the name change. All this to say that "South Bayshore", in historical planning documents demarcates the same geographical region as "Bayview-Hunters Point."

³ According to Neil Shumsky, in his doctoral dissertation on industrial San Francisco in the 1870s, "The city by the Golden Gate had been populated by men who sought gold and then continued to believe that anyone could make a fortune overnight. Speculation in real estate, in mining shares, even in water ditches, provided the means by which paupers could supposedly be transformed into millionaires" (29).

⁴ The most recent US Census showed that some of the metropolitan areas with the largest growth in black population are in the US south, what the popular news outlets and blogs have called the "reverse migration".

⁵ This account is pieced together from *The Spokesman*, an account by the anthropologist Arther Hippler, who published an ethnographic account of Hunters Point in 1974, and Rachel Brahinsky's dissertation (2012) on Bayview-Hunters Point.

⁶ The black, fourteen-year old boy, visiting family in Mississippi from his home in Chicago, who was violently killed for reportedly flirting with a white woman.

⁷ In between, the play moves between moments in past and present, sometimes layered over the same set, or physical space.

⁸ Rachel Brahinsky's (2012) recent dissertation on Bayview-Hunters Point is titled, "The Making and Unmaking of Southeast San Francisco". My point is different than hers in that I am emphasizing the discursive production, or the idea of "Bayview-Hunters Point" and, as Jacqueline Nassy-Brown writes about the meanings of place to Liverpool-born blacks, "the ideological labors that place is meant to perform".

Chapter 2 – Residual Matters: Brownfield Redevelopment and the Social Relations of Waste at the Hunters Point Shipyard

“As much as sinks may initially appear to be the final resting place for the fallout of industrial processes, their waste material drifts across environmental zones. Sinks leak. Wastes migrate through environments, changing the contours of those systems along the way. The stowing away of wastes never proves to be a permanent solution.”

-Jennifer Gabrys (2011, p. 671).

“...as the capitalist mode of production extends, so also does the utilization of the refuse left behind by production and consumption.”

-Henry Marx, Capital: Volume III (1981, p. 195)

The problem of waste displacement from the Hunters Point Naval Shipyard hazardous remediation project became apparent to me in its absence. At one of the Navy’s Community Informational meetings on the shipyard in December 2011, held at the Bayview YMCA on Third Street, a naval engineer named Sharon flipped through power point slides emphasizing the large amount of polluted earth that had been dug up and removed from the shipyard that year. The enumeration of truckloads and cubic yards of removed toxic soil is a ritual I observed at all of the Navy’s monthly remediation meetings I that attended between 2010 and 2012 in Bayview-Hunters Point. Usually measured in tens of thousands of cubic yards and displayed as charts on power point slides, the ritual seemed to serve two key functions. First, it communicated a sense of controlled progress toward base “cleanup”. From a layperson’s perspective, the volumes of soil removed are impressive – the numbers have many zeros and commas. The steadily accumulating numbers also suggest that the total volume of toxic waste at the shipyard can be measured and separated out from its “clean” ground, and that complete removal is possible.

Secondly, the soil removal enumeration ritual speaks directly to long-time Bayview-Hunters Point residents, for whom the polluted shipyard represents part of their historical experience of racism in the city. That evening, as with most meetings I attended, Bayview-Hunters Point residents in the audience pressed Sharon on the specifics of soil removal. “Exactly how much remains?” asked one man, sitting towards the back of the room. A woman near the front repeated a question often asked at these meetings, “Why don’t you dig it all out?” As I show in this chapter, the risk-based approach to toxic waste remediation taken by the Navy permits a certain amount of pollution to remain on the site, even as the shipyard is redeveloped for future use¹. Many Bayview-Hunters Point residents feel that leaving toxic waste on the shipyard represents substandard remediation, and connect it substandard city services, infrastructure, and other forms of neglect that are part of their daily lives.

To speed up the process of base transfer, the shipyard is segmented into discrete parcels of property. Each parcel has its own waste management plan and universe of surveys, contracts, risk assessments, timelines for cleanup, and plans for future use². I first “saw” the shipyard online, through a map that segmented the 500-acre military base into lettered property parcels, and I came to know my research subject largely through this map. Throughout my years of research, I became familiar with the histories and specific pollutants (including the amounts of pollution removed, each year) at Parcel B, as opposed to Parcel C, for example, although they are adjacent to each other. Each discrete site became meaningful in different ways.

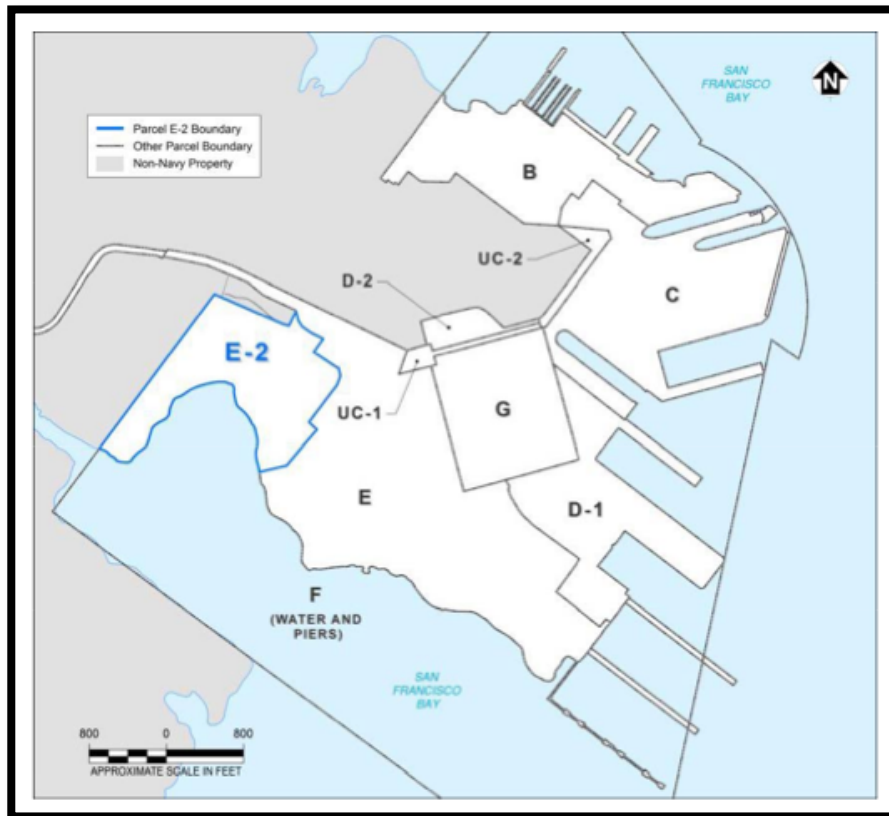


Image 6: Hunters Point Shipyard Remediation Parcels, as of 2012 (US Navy 2012). The middle section of the shipyard is the “former Parcel A”, and had by that time been transferred to Lennar, the development company. Note that Parcel G is a neat rectangle – it was previously designated the site of a new football stadium until the 49ers announced their move to Santa Clara. Current maps no longer show a Parcel G.

Dividing the entire shipyard into parcels of real estate helps speed the base transfer process, because the Navy can declare discrete areas of the shipyard “clean” and transfer the 500-acre military base in a piecemeal process. This is beneficial from an economic and urban development perspective, as Lennar – the developer of the shipyard – can begin building on parcels that are considered “clean”, even as adjacent parcels are still undergoing remediation. Lennar has already begun grading and building street lamps and

structures on Parcel A (today known as “former Parcel A”), even as this section of the base is surrounded by Parcels B, C, D, and E, which are still considered polluted. Later in this chapter, I describe my embodied experience of a naval-led tour of the shipyard, which raised questions for me about this process of piecemeal transfer from an ecological perspective. From the inside of the Navy’s tour bus, I experienced the shipyard as one landscape and could not tell one parcel from another. I wondered what happens when pollution from a parcel still undergoing toxic remediation spills across property boundaries and into a “clean” parcel. I examine how environmental scientists think about this question through interviews I conducted with staff members from several environmental agencies working on the shipyard project.

At its monthly shipyard restoration meetings, the Navy communicates progress at the shipyard through this map of parcels, setting the discursive terrain through which people in the audience engage with pollution at the shipyard too. At the Community Informational Meeting in December 2011, Sharon listed amounts of removed toxic soil by parcel. She told us that from Parcel B, an area on the north end of the old base where, in the late 1940s, some of the radioactive warships from nuclear testing in the Marshall Islands were docked, 8,000 cubic yards of radiologically-impacted soil had been removed by environmental engineering companies, hired by the Navy, that year. From Parcel F, which is a 440-acre area underwater site, 28,000 cubic feet of asbestos lined-piping had been dug up and trucked off site. From Parcel E-2, the site of the shipyard’s landfills, Sharon proudly reported the extraction of 38,000 cubic yards of soil – containing PCBs, petroleum, lead, and radiological waste – an amount she translated to us as “over ten football fields.”

And then the soil disappeared, in her narrative at least. As she moved on to other topics (such as bioremediation with oysters – “they are unhappy clams”, she said, with a friendly frown – and seeding Parcel B with native wildflowers, munched on by “local” goats), I wondered, where did those “football fields” of (clearly very contaminated) earth go? I posed this question to Keith Forman, the BRAC environmental coordinator for the Navy, after the meeting. He paused. “Utah – Clive, I think – and Idaho, or some place like that,” he answered. These sites, too, were blank spaces in his imagination. I asked Forman how I might find this information – did public records exist? “Probably,” he wavered in his answer, “you might find those at Treasure Island.” Treasure Island is another former naval base, in the middle of the San Francisco Bay, which is also undergoing environmental remediation in anticipation of a large urban redevelopment project³. Forman added, “good luck,” as if these transport manifests were buried somewhere, much like hazardous waste throughout the shipyard.

I found the toxic waste from Hunters Point by other means. At home that evening I typed in “Clive, Utah,” into my Google “maps” search engine and located it in Tooele County, a rural, desert area eighty miles east of Salt Lake City. Further internet searches brought me half a dozen articles on environmental injustice in Tooele County, where the Skull Valley Goshute tribe lives in close proximity with the Dugway Proving Grounds (the U.S. Chemical Warfare Service’s “remote” site for testing biological and chemical weapons), the Tooele County Army Depot (the site of one of the world’s largest nerve gas incinerators), MagCorp (a magnesium production plant which emits chlorine gas), and Energy Solutions (formerly Envirocare), a low-level nuclear waste landfill and the destination of some of the radiologically-impacted ground from Hunters Point (Hoffman

2001, Ishiyama 2003, Jeffries 2007, Larsen 2012). Three weeks later, I found Clive again, on Market Street in San Francisco. I had a meeting with Bradley Angel, the director of Greenaction for Environmental and Health Justice, about a report I was helping update on the waste conversion (in industry terms: “Waste-to-Energy”) technologies. Bradley is a long-time environmental activist who has worked extensively with Native American tribes in the Western desert lands. “Tooele County!” he exclaimed, when I asked if he knew of the place, and gave me a brief history of how the Office of Nuclear Waste Negotiator (ONWN) in the 1980s had targeted tribes, like the Skull Valley Goshute, to allow nuclear waste landfills on their reservations – the government’s solution to its nuclear waste crisis. The nuclear waste industry not only brought jobs and tax revenue to the struggling tribes, but the tribe’s quasi-sovereign status exempted them from EPA regulations. The Nuclear Waste Policy Act of 1982 (which had created the ONWN) specified that tribes would be treated as sovereign states in deciding whether to store waste on their land, also placing the decision outside the Utah legislature (Jeffries 2007). Months later, Bradley sent me an email. He and his wife had driven to Utah for a vacation, and he described rolling up his car windows but still not being able to keep out the fous smells as they drove through Clive, where Energy Solutions and the contaminated football fields from Hunters Point are located.

Waste as Value

This chapter examines the cultural politics of polluted urban land at the Hunters Point Shipyard, and some of the discursive and material processes through which it becomes the grounds for new development. In *California and the Fiction of Capital* (1998), George Henderson examines how financial capital in late nineteenth century California turned natural processes into economic opportunities. In large part his book takes up the question of whether and how California agriculture is a capitalist system, in spite of the persistence of non-wage forms of rural labor, such as family farming. Henderson relies on Marx’s theory of capital circulation in *Volume II of Capital*, analyzing the connections between agricultural development in the San Joaquin Valley in the 1880s and financial capital concentrated in urban areas (in particular, the rise of branch banking at the time), alongside the ways this rural capitalism was narrated and represented in literary fiction. Importantly, Henderson argues that the temporalities of natural processes (such as plant growing time) and the spatialities of nature (both as distance and terrain) simultaneously presented barriers and opportunities to capital circulation. Capitalist agriculture developed in California as urban financial interests identified economic opportunities in the very obstacles to capital circulation presented by the physical environment.

Leigh Johnson (2010) develops a similar argument in her study of the ways financial capital currently seeks to capitalize on the effects of climate change – specifically the loss of sea ice in the Arctic Ocean – a process she calls “accumulation through degradation”. In contrast to the “natural processes” Henderson examines in the case of California’s rural landscape (and the ways Henderson understands “nature” as the non-human world), the process of melting Arctic sea ice today is an effect of industrial capitalism. Still, much as environmental changes in the San Joaquin Valley presented

economic opportunities for financial capital in late nineteenth century California, anthropogenic climate change in the Arctic represents a market for global financial capital today.

In this chapter, I argue that industrial pollution in the ground – both as property and physical material – has similarly become a landscape of opportunity for different social actors, in ways that articulate powerfully in the contemporary moment. Similar to melting sea ice today, these urban natures are the products of industrialization. Once the twentieth century’s wastelands, I show how by 1990s these sites had become economically valuable, and politically and culturally meaningful. In another section of this chapter, I describe a naval-led bus tour of the shipyard in 2011, during which I sat next to a representative from Lennar. At the time, Lennar’s only building on the base was a crisp steel, glass, and wood structure, built on the former Parcel A. I asked Lennar’s representative about the uses of this attractive-looking building, sitting assuredly by itself in the middle of an empty, weedy field. He told me it would be a “community building”, eventually, but at the moment it was where Lennar took its potential investors. From the windows of the new building, the employees of potential investment companies could “see” the financial opportunities presented by the shipyard today. In 2011, at the time of this tour, they would have seen decaying military buildings, empty dry docks, and hundreds of Hazmat signs, stamped on buildings and fluttering in the wind. Mostly likely they also would have seen financial reports and power point presentations, contributing to the ways they related to the shipyard’s landscape of environmental degradation, outside the glass and steel walls of the building, as a potential business opportunity.

The shifting geography of industrialization and militarism during the twentieth century has left a expansive landscape of polluted land. In North American and European cities in the 1990s, these sites became known as *brownfields*, defined, in regulatory and real estate terms, as formerly industrial property in which contamination complicates or deters future development⁴ (Gorman 2003, EPA 2013). In the U.S., since the creation of Superfund legislation in the 1980s, the EPA has sought to survey and remediate contaminated industrial land. In its early years these efforts were primarily motivated by concerns about environmental and human health. In 1990s, real estate and development interests began to identify polluted land as economic opportunities, shifting the discourse and cultural meanings of these sites. In this chapter I examine the ways these polluted spaces have become “places of opportunity”, as EPA Administrator Carol Brower referred to brownfields in 1998. These opportunities were also produced through supportive federal and state legislation, encouraging and making profitable the private investment and remediation of brownfield sites.

U.S. cities have benefitted from the new exchange value of polluted land in their efforts to redevelop older industrialized zones as residential and commercial spaces, reflecting a broader sectoral shift within many North American and European cities away from manufacturing-based economies and toward service sector, financial, and technology sectors. Design plans for the Hunters Point Shipyard, for example, include 12,000 market-rate housing units, office buildings, commercial spaces, and waterfront parks. In 2007 the city had even hoped to build a “climate change think tank center”, to encourage “greentech” industry in the southeast, representing an extension of its historical political economic shift toward the real estate, finance and insurance sectors after World War II (Fainstein 1984). More recently, the city has worked to encourage the development of a

cluster of biotechnology research and development companies at Mission Bay, an area between downtown San Francisco and Bayview-Hunters Point.

At roughly the same moment, in 1989 the Department of Defense established the Base Realignment and Closure (BRAC) commission, to manage the process of closing and disposing of military bases. Since the end of the Vietnam War, the U.S. military has sought to reduce its far-flung geography of bases, and this process accelerated with the end of the Cold War (Sorenson 1998). In Hunters Point, although the Navy had closed the shipyard in 1974, it remained property owners, leasing parts of the shipyard to private ship repair and heavy metals companies, and to a community of artists. In 1990, the BRAC commission designated the shipyard “excess” military property, beginning the process of transferring the site to the city of San Francisco. While the word “excess” symbolized how the shipyard had become a form of waste to the Navy, it simultaneously became of value to development companies looking for new real estate markets. Lennar Inc., the developer of the Hunters Point Shipyard, also holds contracts to develop the toxic Naval Station Treasure Island, the Alameda Naval Air Station, and, prior to the depression of 2008, was contracted to develop Vallejo’s Mare Island Naval Station, on the northern side of the San Francisco Bay. In other words, the development company, which is one of the largest homebuilders in the U.S., has identified these “excess” contaminated military bases as valuable property.



Image 7. “Opportunity” at Lennar’s Hunters Point Shipyard (San Francisco Bay Area Regional Center).

Part of the BRAC process at the Hunters Point Shipyard, as with all military bases, obligates the Navy to address hazardous waste on the site, and “restore” the property for future use, through what is called its Installation Restoration program. The Navy does not do the actual work of risk-based toxic remediation (I use the term “risk-based remediation” rather than “cleanup” because pollutants remain in the ground even as the site is legally designated “clean”) itself – this is contracted out to private companies which, like Lennar, profits from pollution at the shipyard. The work of toxic remediation is only possible because of the development of an environmental services industry and remediation technologies. Stuart, one of the EPA’s contacts on the Hunters Point Shipyard

project, told me on the bus tour that the environmental engineering industry had “exploded” in the 1980s, after Superfund legislation made hazardous remediation a profitable business venture. I use the term “environmental services” to refer to firms that specialize all or part of their business in the waste management commodity chain. These include trucking companies and privately owned hazardous waste landfills. They also include larger firms that describe themselves as “life cycle services” companies, and are also involved in resource extraction – like mining – construction and engineering activities. For example, one of the Navy’s major contractors at the Hunters Point Shipyard and other military sites around the country is Tetra Tech Inc. Tetra Tech’s website describes the company as,

...a leading provider of consulting, engineering, program management, construction management, and technical services. The Company supports government and commercial clients by providing innovative solutions focused on water, environment, energy, infrastructure, and natural resources. With more than 14,000 employees worldwide, Tetra Tech's capabilities span the entire project life cycle.

As with other large environmental services firms involved in brownfield markets, Tetra Tech is also a mining company. In addition to toxic waste remediation at Hunters Point, the firm is also, for example, involved in iron extraction in Brazil, feasibility studies for a Canadian-based company’s gold mine in Guyana, and resource estimate reports for (another Canadian-based) company, called Gunpoint Exploration (it’s slogan, “more ounces in sight”) extracting minerals in Nevada⁵. On the Hunters Point Shipyard, Tetra Tech has conducted health risk assessments, bored holes in the ground to collect soil samples, and removed truckloads of polluted earth⁶. Tetra Tech also worked on a health risk assessment report for Pier 98 in Hunters Point, just north of the shipyard, when the San Francisco Port Authority redeveloped the industrial pier as a wetland habitat and park in the 1990s. Similar to the ways Lennar has specialized in developing old military bases, Tetra Tech and other environmental services firms identify hazardous waste sites, or brownfields, as emerging markets (Tetra Tech 2014). It should be noted that for Lennar, brownfields are specifically polluted “property”, while Tetra Tech identifies the physical waste, or land itself, as a commodity.

In other words, the intersection of financial, urban, and military interests in hazardous waste remediation in the 1990s, and the development of new technologies and supportive state regulation, represents a conjunctural moment in U.S. urban history. This conjuncture also includes the meanings of pollution and environmental degradation for long-time Bayview-Hunters Point residents. Today the shipyard’s polluted state also represents an economic opportunity for unemployed residents of the southeast, who have found jobs as hazardous remediation workers, clearing out the industrial pollution at the site. The availability of these relatively well-paying jobs, supported in part by the U.S. EPA’s Superfund Job Training Initiative, is partly the product of years of Bayview-Hunters Point residents pressuring the Navy for job opportunities during Restoration Advisory Board meetings – a tense subject that I explore in the introductory chapter of this dissertation. In the second chapter of this dissertation, I discuss how black Hunters Point residents migrated to San Francisco during the 1940s and 1950s from the U.S. south to

work at the shipyard. Today Hunters Point residents find other jobs at the shipyard, cleaning up the waste of war.

In an interview, Willie Ratcliff, the editor of the *San Francisco Bayview* paper, had remembered to me his excitement to work at the shipyard as a young seventeen year old from Texas, in the early 1950s. Yet his understanding the shipyard today is indicative of the complex and sometimes ambiguous relationship between long-time Bayview-Hunters Point residents and the shipyard, including the ways industrial waste is also a lived, bodily experience for many residents. At the end of this chapter, I examine how many Bayview-Hunters Point residents also relate to the shipyard as a source of fear and racial violence, and draw connections between shipyard workers in the past, and the cancers that likely developed from hazardous occupation exposure, and those cleaning up the military base today. My conversation with Ratcliff, for example, had meandered through his early years working as a rigger on the shipyard to the topic of environmental health in Bayview-Hunters Point, and the question of whether the Navy would, or could, clean up the site. I had asked him, partly in jest, whether he would live there, in one of Lennar's new homes. He responded to me as if I had suggested something completely ludicrous, saying, "they couldn't give me a house out there! If I want to murder my family, I'll do it myself". To this he added, in a more serious tone, "People who live out there now [referring to residents of public housing units, and former military barracks, near the shipyard] they die twenty-five years early". I take Ratcliff and other black Bayview-Hunters Point resident's comments about the shipyard as a violent and dangerous place seriously, as the lived experience of pollution in the city. I also show how waste and pollution has become meaningful as a way of talking about racism in San Francisco today.

Survey of the Chapter

This chapter is guided by the following questions: How does hazardous waste become meaningful for different social actors invested in and affected by the shipyard redevelopment project? Who profits from brownfield redevelopment projects, and benefits from different ideas about toxic waste or practices of waste management? What new geographies of waste are produced through brownfield redevelopment, and in particular, in what ways are such projects productive of new articulations (or proximities) of race and waste?

Methodologically, I have tried to answer these questions through textual records, interviews, and ethnographic fieldwork. I analyzed policy and real estate reports, Congressional hearings, and engineering studies on the topic of brownfields. I also interviewed scientists and engineers from the State Water Resources Board and the EPA (two regulatory agencies involved in the Hunters Point Shipyard remediation project) and from several engineering companies involved in different brownfield remediation projects in Hunters Point. The scientists and engineers I interviewed patiently explained to me different aspects of the hazardous waste remediation process, leaving me with an appreciation for their particular form of expertise. I was also impressed with their confidence in their ability to clean up polluted sites and the ways they were unconcerned

about any residual human health risk, if the concentrations of hazardous waste were below established risk levels.

I compare this confidence in science and technology with the views of many Bayview-Hunters Point residents in the last two sections of this chapter. Interviews and attendance at monthly shipyard remediation meetings between 2010 and 2012 provided me with an understanding of the multiple relationships between Bayview-Hunters Point residents and industrial pollution. As part of my fieldwork, I also attended two Navy-led bus tours of the shipyard, in September of 2011 and again in September 2012. The tours provided me with an embodied experience of the site, dissolving the neat parcel boundaries through which I had come to know it on maps viewed on my computer screen and on paper printouts.

In what follows I show how formerly industrial land became an “object of development” in the 1990s. As one engineer told me in an interview, in the 1990s, “brownfields became a buzzword”. In this section, I show how the problem of industrial pollution in the ground (as opposed to air pollution, for example), previously regulated by the state as an environmental and health threat, emerged in the 1990s as an economic and development opportunity (this point is made by Yount [2003], although she does not explore risk-based remediation practices). Motivated by these economic interests, environmental engineers in the 1990s developed a risk-based approach to toxic remediation, called risk-based corrective action (or RBCA), which allows for speedier transfer of polluted property to development companies. I explore some of the implications of risk-based cleanup at the Hunters Point Shipyard, focusing on the degree to which it allows for hazardous waste to remain on site. I then take the reader on a bus tour of the shipyard, and explore how the Navy and environmental engineers had guided us through the polluted site, interpreting the landscape outside the bus windows. In the final sections of this chapter I examine the complex relationship between Bayview-Hunters Point residents and pollution at the shipyard, through interviews and a public meeting on Parcel E-2, the site of the shipyard’s industrial landfills. The Navy has no plans to excavate and remove these landfills, which contain nuclear waste. The remedial plan for E-2 includes covering the landfills with a plastic, industrial-grade landfill liner, leaving much of the waste on site, even as the space is redeveloped as a park and wetlands habitat. I show how many Bayview-Hunters Point residents interpret within a historical experience of racism in the city. In this section, I also show how the lived experience of many Bayview-Hunters Point residents is discounted within the technical discourses of hazardous waste remediation.

Waste Perspectives

As cities like San Francisco seek to reuse formerly industrial lands, it is important to have a critical framework on the ways these transformations rework older, socio-ecological relations. As I explore through this chapter, brownfield redevelopment projects are not simply toxic cleanups, they also produce new geographies and temporalities of waste. At present, few critical social scientists have approached this topic. For the most part, the significance and stakes of brownfield redevelopment projects remain defined largely by policy and real estate interests. In this literature, brownfield redevelopment

projects are discussed as a form of urban regeneration, promising economically and ecologically restored landscapes. Technoscientific approaches to brownfield redevelopment complement this narrative of progress. At the Navy's shipyard restoration meeting in December 2011, for example, the naval engineer had depicted ground contamination in defined, measurable units, as cubic feet and metric tons. She communicated this through her image of football fields, with their clear, bright lines and tick marks measuring distinct, predictable lengths. It was as if all the toxic waste could be neatly excavated and whisked away, preparing the shipyard's grounds for a (re)newed urban future.

Scholarship and social justice-oriented policy research on brownfields have examined how contaminated spaces might be redeveloped sustainably (de Sousa 2008, Herbele and Wernstadt 2006), how cleanup projects can economically benefit low-income communities near brownfield sites (Garzon 2007, Center for Creative Land Use 2013), and how risk-based cleanup compromises human health (Applegate 2008). One of the few geographers who has written about brownfields, Mark Bjelland (2004), examines the history of industrialization and deindustrialization in Minneapolis-St. Paul. Bjelland cogently argues that brownfields are the product of capital investment and divestment, linking the decayed urban landscape in the Twin Cities with political economic changes. Still, Bjelland does not take up the process of capital *re*-investment in brownfield sites, or the social and environmental implications of redeveloping and reusing polluted land.

Waste and the Urban Process

One of the arguments of this chapter is that waste – as a physical material and as an analytical approach – offers an important lens onto the urban process. Waste challenges the dominant approach to cities taken by scholars in the field of urban geography, and particularly existing scholarship on urban redevelopment. Most geographers studying contemporary European and North American cities have focused on the ways that capitalism (re)makes urban space, including such topics as the privatization of public infrastructure (Swyngedouw 2004), the militarization of urban space (Davis 2006, Smith 1996), the dominance of public-private partnerships and bond-rating agencies in urban development (Hackworth 2007), the commodification of “ethnic” neighborhoods (Davila 2004), the prioritization of a “good business climate” in urban policy over inequality and social welfare (MacLeod 2002, Harvey 2008, Leitner, Peck and Sheppard 2007).

In large part this scholarship has developed from David Harvey's (1989) theory of entrepreneurial urbanism, the concept he develops to describe the transition from a Fordist or Keynesian political economy and related mode of urban development to a post-Keynesian (his early term for neoliberalism) mode of urban development, dominated by the prioritization of exchange value over goals of social welfare. Jason Hackworth (2007) builds from Harvey's framework to develop the concept of a “neoliberal spatial fix” through which he theorizes how cities have attempted to address the economic crises of 1970s through particular forms urban development, in particular through corporate mega-development projects and public private partnerships – both which are characteristics of the Hunters Point Shipyard development project today.

Focusing on the waste of redevelopment projects is one way of revealing how this body of scholarship, although guided by Marx's historical materialism, does not actually

engage with the materialities of urbanization. Hackworth (2007), in describing neoliberal urbanism as a form of creative destruction, writes that the “urban form was stretched, torn, and reshaped to accommodate larger-scale economic restructuring” (80), describing what sounds like a violent physical process, yet his analysis does not actually recognize this material process of disassembly. The physical matter of disassembled buildings and re-located industrial waste (the excavated truckloads of PCB-impacted soil from the Hunters Point shipyard, for example) are not within this analytical focus. His concept of neoliberal urbanism therefore misses new socio-ecological relations produced through brownfield redevelopment. Perhaps one way of understanding urban development in southeast San Francisco today is in fact the view from Tooele County, Utah and the lived experience of the Skull Valley Goshute Tribe and others who live in the area. From an analytical perspective that focuses on waste, one might also ask, if the urban is torn, what happens to the pieces? Where does the debris go, what is its (often toxic) material composition, and who, ultimately, must live with it? In this chapter, I argue that taking the materialities of waste seriously provides an analytical space to think through the stakes of this historically new urban process.

Waste and the Built Environment

Industrial pollution in the ground also challenges how geographers and others have conceptualized the built environment. In *Limits to Capital* (1982), David Harvey develops Marx’s theory of value through what he calls the third-cut theory of crisis formation. In *Capital*, Marx identifies the barriers to capital accumulation presented by obsolete technology, as a form of fixed capital. Harvey (2006 [1982]) expands this concept of fixed capital to the scale of urban infrastructure, or the built environment. He writes,

The circulation of capital is increasingly imprisoned within immobile physical and social infrastructures which are crafted to support certain kinds of production... The growth of productive forces, in short, acts as a barrier to rapid geographical re-structuring in exactly the same way as it hinders the dynamic of future accumulation by the imposition of the dead weight of past investments (Harvey 2006 [1982]): 428).

What Harvey describes in the passage is the process of uneven development, as it works through the “material qualities of social space,” or the built environment. According to Harvey’s expansion of Marx’s theory of value, the constant search for surplus value unfolds spatially through the locational shifts of factories and jobs. Uneven development at this scale includes the building of new urban environments and the abandonment of others, including the factories, homes, roads and other “material qualities of social space”. Neil Smith (1996) has developed this theory of uneven geographical development through his writings on gentrification, which he uses to understand the social conflicts produced by the reinvestment of capital into once-neglected urban areas – which also describes the market-led process of redevelopment in Bayview-Hunters Point today. Scholarship on gentrification, drawing largely on Smith’s work, has tended to focus on the redevelopment of run-down and often racialized commercial and residential areas near

central business districts. Few scholars have explored the social and ecological problems produced by redevelopment of industrial and polluted urban spaces.

Industrialized land is one terrain on which this way of thinking about the built environment (and also perhaps of “infrastructure”) breaks down, where it loses its analytical purchase. The “built” or human-made world can no longer be separated – analytically or literally – from the physical or natural worlds. As the regional brownfields coordinator for the California State Water Board told me in an interview, it is impossible to completely separate out industrial chemicals from soil or groundwater, which is why a risk-based approach is the only logic by which brownfield remediation can be thought of as “cleanup”, in the sense that residual toxic waste imaginatively disappears below statistical risk levels. That is, the built environment of twentieth century industrialization must be understood to include not simply human-made warehouses, railroad yards, industrial ports, factories, and sewer systems – infrastructure that might be torn up and removed – but the earth itself, land often seeped in synthetic chemicals and other industrial waste products. This intensive mixing of chemical and soil – of nature and culture – cannot be so easily un-mixed, or these hazardous waste products cannot be so easily contained and separated from social life, which is in fact the task promised by the brownfield redevelopment industry, including the Navy’s contractors trucking contaminated soil off the Hunters Point Shipyard today. Moreover, as I explore later in this chapter, the “dead weight” of past investments (according to Marx, fixed capital) is also a lively ecosystem: persistent, bioaccumulative, and radioactive substances have temporalities that will likely outlast the shipyard development project itself – rather than the inanimate matter implied the term.

“Places of Opportunity”

In this section, I show the historical emergence of “brownfields” as an object and a terrain of urban development, and provide a brief overview of the current policy and regulatory landscape governing brownfield redevelopment practices, at the federal level. I am less concerned with the question of what brownfields *are* than the cultural practices and meanings that shape how people think about, relate to, and take actions in regard to polluted urban land. I show how brownfield redevelopment emerged within broader political economic changes in U.S cities during the 1990s, surpassing an earlier concern with industrialized land as a problem of environmental and human health. Today, the concept of a “brownfield” frames or produces industrialized land as a threat to the health of the economy, as a barrier to future urban and economic development –not replacing concerns for human health, but dominating its discourses, policies, and practices.

From Health Threat to Economic Opportunity

In 1978, chemicals bubbled upwards from rotting underground waste storage drums into the basements of houses and a schoolyard in Love Canal, NY. Until the late 1970s, most industries simply disposed of waste by digging holes on their own properties, putting in sludges or drums of chemicals into the holes, and covering them with clay (Tarr 1996). Hazardous waste regulation had also remained at the municipal level until the

federal Office of Solid Waste Disposal was created in 1965, and later with the Resource Conservation and Recovery Act (RCRA) of 1976. RCRA regulated “end of pipe” or disposal practices, rather than regulating waste produced within the production process itself (Tarr 1996). Love Canal was one of a number of industrial-related toxic events of the time that motivated the 1980 passage of the Comprehensive Environmental Response and Liabilities Act (CERCLA) in 1980, also known as Superfund legislation. The policy created a fund for hazardous remediation that was financed primarily by a tax on crude oil and on certain chemicals, and which gave the federal government regulatory authority over polluted land when liable parties could not be found (Gorman 2003, De Sousa, 2008). In 1986, the Superfund Amendments and Reauthorization Act broadened the scope of federal authority to include research and remediation activities. The 1980s, in other words, represented a period in which legislation that targeted polluted land focused on the health and environmental threats posed by industrial waste, and in which Superfund legislation was the primary regulatory framework.

According to Kristin Yount (2003), the word “brownfields” first surfaced, in print at least, in the context of technological changes in the steel industry in the 1970s. Within industry documents at the time, “brownfields” referred to outdated infrastructure in need of modernization, but the meaning of the word did not yet encompass pollution. Subsequently the term was adopted by the real estate industry to refer to already-developed sites, in contrast to the definition of a “greenfield,” or undeveloped piece of land. Of note here is that the term brownfield emerged in the context of industrial and real estate development, and signified a barrier to continued development.

By the 1990s, as one engineer with the State Water Resources Board told me, the term “brownfields” had become a buzzword in the environmental regulatory community. As Yount (2003) also argues, in this moment the discourse and practices of toxic remediation land shifted away from concerns about human health, which had motivated CERCLA legislation, and was redefined primarily in economic terms. My own search for policy documents on brownfields also reveals a burst of reports in the mid- to late 1990s. In this period, polluted urban land became an object of development in a similar way agriculture in rural California became an opportunity for nineteenth century financial capitalists in the state (Henderson 1998), in the sense that it represented both a barrier to capital circulation and an economic and development opportunity. The economic potential, or potential exchange value, of contaminated ground was recognized by the Urban Land Institute (known as a politically conservative, pro-development organization) in their 1998 report, “Turning Brownfields into Greenbacks” (Simons 1998). At a 2005 Congressional hearing titled “Brownfields: Lands of Lost Opportunities,” a real estate spokesman testified that “brownfield properties present as much as an opportunity as a problem”, adding that “[p]roperly conceived, brownfield redevelopments are investments”. At the same hearing, a senator from the “rustbelt” state of Ohio framed the problem of brownfields as “abandoned parcels of property marring the faces of our cities and towns...robbing the communities which they exists of new jobs and other economic opportunities” (2005). Within the policy discourse on brownfields, the wasted or degraded nature of polluted land became a form of economic waste (or lost exchange value) as in a report put out by the US Conference of Mayors in 1998, titled “Recycling America’s Land”, which opens with the warning that “[a] failure to address brownfields will result in

a wasted opportunity for America to recycle its land, create jobs, increase local tax bases and revitalize neighborhoods”.

Since the mid-1990s, federal, state, and local legislation targeting brownfields has emerged, providing grants, tax subsidies, relief of environmental liability regulations, and other incentives and support for private redevelopment of brownfield sites. In 1993, the EPA passed the Brownfields Economic Redevelopment Initiative, followed in 1995 by the Brownfields Action Agenda, creating a regulatory environment on industrialized land that was separate from CERCLA and its the strict liability clauses (Herberle and Wernstedt 2006). The 1995 act also included funding for pilot brownfield redevelopment projects and a clarification of liability and cleanup responsibilities (Browner 1998), further incentivizing private investment into polluted sites. Carol Browner, the EPA administrator at the time, wrote an article titled “Brownfields Are Becoming Places of Opportunity” in an environmental law journal, described the 1995 Brownfields Action Agenda as “a road map for returning abandoned properties to productive use.” Between 1997 and 1998, the EPA budget for brownfields increased from \$37.1 million to \$87 million (Browner 1998). Today, legislation such as the EPA Brownfields Revolving Loan Fund Grants, Brownfields Job Training Grants, the Small Business Liability Relief and Brownfields Act, and the EPA document, “Anatomy of a Brownfield Redevelopment” aimed at clarifying the process “from a real estate perspective,” are all attempts to stimulate investment and redevelopment into these formerly industrial lands.



Brownfields Technology Primer:
Requesting and Evaluating Proposals That Encourage
Innovative Technologies for Investigation and Cleanup



Image 8. “Brownfields Technology Primer”. The image on the cover of a report on new brownfield remediation technologies prepared for the EPA by Tetra Tech illustrates the economic threat of brownfields as a problem of exchange value (National Service Center for Environmental Publications)

In the context of renewed policy debates about CERCLA legislation and increased interest in the development of formerly industrial land, in the 1990s the environmental engineering community developed an approach called “risk-based cleanup”, or what is usually referred to in the technical literature as “risk-based corrective action” (RBCA, or “Rebecca”) (Applegate 1998, Rocco and Wilson, 1998). Two years after the first Brownfield Action Agenda, in 1995, the American Society for Testing and Materials developed Standard E-1739, or the “Guide to Risk-Based Corrective Action for Petroleum Release Sites”. RBCA standards were developed through a public-private partnership that included the EPA, six major oil companies, and several state agencies (Rocco and Wilson 1998).

“Clean,” in the context of RBCAs, refers to a situation in which the calculated risk of exposure to the hazardous waste still present in soil and groundwater is below a particular number, or risk level. At the Hunters Point Shipyard, these risk levels correspond to the city’s Shipyard Redevelopment Plan (San Francisco Planning Department 2010). The degree of remediation for a residential site, for example, is regulated by stricter risk levels than the degree of remediation for a park. These risk levels are in part calculated through estimations of the average amount of time a person (defined by particular parameters like age and gender) is expected to spend on the site. Banks, environmental companies, and city governments favor RBCAs because they allow for quicker, less expensive remediation projects. According to Washburn and Edelman (1998), writing about the historical development of RBCAs in a special publication on the topic by the American Society of Civil Engineers in 1998, “Risk assessment has emerged as an important tool in determining the level of remediation necessary to return such sites to productive use, without requiring cleanups that make the property unattractive to investors” (30).

In October 2011, I met Bruce, the San Francisco Bay Region brownfields coordinator for the Regional Water Quality Control Board (RWQCB, hereafter, the “Water Board”), in a conference room in his downtown Oakland office. The Water Board is one of the many state and federal environmental agencies with regulatory oversight of the Hunters Point Shipyard remediation project. The Water Board, along with the EPA, the San Francisco public health department, the Department for Toxic Substances Control, and the Bay Area Air Quality Management Board review and comments on technical reports, monitor the Navy’s compliance with state and federal regulation, and help with public outreach about the remediation project. Bruce’s career trajectory reflects the historical evolution of polluted land as a object of regulation, and new fields of professional expertise that emerged first with federal level Superfund Act of 1980, and the later emergence of brownfield legislation in the 1990s. Trained as a water engineer, Bruce began working at the Water Board in the early 1980s, as part of their newly established toxic cleanup and groundwater division. In 2005, Bruce became the Regional Brownfield Coordinator for the Water Board, a position that had been established only two years before, reflecting the recent emergence of brownfields as an object of state regulation.

Bruce recounted to me how a wave of fear had passed through the environmental science and engineering community in the 1980s, with an increasing awareness of the extent of industrial land and groundwater contamination across the country. He told me,

We were scared in the '80s about not being able to return the contaminated land to its pristine state, and over time I think we have realized, that was not possible, to clean up everything to background, it costs so much money, it takes so much time, its just not very do-able, so over the years we have started to take this approach called risk based clean up.

Initial Superfund legislation had required brownfield remediation to analytical detection limits, or close to those limits (Rocco and Wilson 1998). Yet these standards for toxic remediation were cost prohibitive. As Bruce told me,

In the beginning, there was fear in everyone's mind that polluters might pay, and that it was our intention to have people do this, that we wanted to make sure whoever polluted the soil and groundwater would clean it to background. That may be one of the reasons that created brownfields.

The idea that the environmental regulation community would have "created brownfields" was humorous to Bruce, but the 2005 Congressional hearing on brownfields ("Lands of Lost Opportunity") and the urban policy literature in fact show how in the 1990s, a consensus had emerged among many policy makers, city agencies, developers and banks that Superfund requirements encouraged the abandonment of industrial land and prohibited toxic cleanup.

In Bruce's experience, RBCAs were necessary because polluted sites could never be truly "clean" in the first place, and the only way they could be redeveloped and used again was with a certain amount of risk. He told me that, in the 1980s,

We found out, it's very difficult to remediate soil and groundwater, especially the groundwater. When the contaminant is absorbed, it doesn't come out easily. It's like a sponge: once you use it, you can't rinse it back to clean. [...] Once the contaminant has leaked into soil and groundwater, it's very difficult to get it out.

Bruce also explained to me how innovations in brownfield remediation technologies since the 1980s have allowed for faster cleanup of polluted properties. In dealing with groundwater contamination, the most common method in the 1980s was known as "pump and treat" through which engineers attempted to extract nearly all contaminated groundwater (pumping it out of the ground), and then sent the water to a treatment facility. This process was time-consuming, and it discouraged investment and redevelopment of contaminated properties. Since then, *in situ*, or on site, technologies have allowed for faster cleanup and transfer of contaminated sites to developers. Common *in situ* treatments today, like chemical oxidation, involve injecting particular chemicals into soil and groundwater in an attempt to neutralize toxic chemicals of concern. *In situ* injections cannot neutralize all of the underground contamination – a certain amount, calculated through RBCAs, remains. I asked Bruce whether he was concerned about the health implications of this residual waste, and he told me that "a RBCA says, ok, there is some risk but it is low enough."

Through these kinds of technical approaches to brownfield remediation, industrial contamination becomes a defined problem that can be solved rather than a source of indeterminacy, uncertainty, fear, and memory, as is the case for many Bayview-Hunters Point residents, which I explore in at the end of this chapter.

The Work of Brownfields

Federal brownfields programs also provide funds for job training, focusing on manual labor in the work of toxic waste remediation. In February 2013, I interviewed Anika, the director of the grassroots youth development non-profit, Hunters Point Family, at her offices in the Alice Griffith public housing development, which is adjacent to the shipyard. Hunters Point Family focuses on children and young adults from public housing developments near the shipyard, where unemployment rates, for particular age brackets, are in some cases as high as 50 percent (US Census 2010). Alice Griffith is, like Hunters View, former military housing, slated for a redevelopment project that will tear down the old housing units and develop a mixture of public and market rate housing. Before attending graduate school, I volunteered at one of Hunters Point Family's gardens in Alice Griffith on Saturday mornings. When I visited Anika that day, I hadn't been to Alice Griffith in almost eight years. Still, it looked much the same to me, except for a bright orange building next to the garden called the Alice Griffith Opportunity Center, which I assumed was related to the redevelopment project. Although it was a weekday, the Opportunity Center seemed empty and quiet.

I had written to Anika about her work on Hunters Point Family's gardening programs, and she asked me if I could help her put together a few power point slides, for her upcoming presentation to San Francisco City College's board of directors. Anika was preparing to present on her vision for a "Green College" program for the Southeast City College campus, in Bayview-Hunters Point. Funding for Green College would come largely from a community benefits agreement with the city's Public Utilities Commission (PUC) at part of its current modernization of the Southeast Sewage Treatment Plant in Bayview-Hunters Point. Anika envisioned four academic and skills training tracks for Green College, focusing on entrepreneurial and manual labor jobs within an emerging "green" economy, which included brownfield remediation work. Green College's tracks would include "Clean Water" (PUC had promised to provide internships and jobs to residents of the southeast through the sewage treatment plant expansion), "Urban Agriculture" (as explored in the fifth chapter of this dissertation), "Clean Energy" (which included training in solar, wind, and alternative vehicles) and "Restoration and Renewal", or Hazmat and bioremediation certification, with potential employment on the shipyard and at the PG&E power plant, which is also a brownfield site. The notion of Hazmat labor as a "green job" is also supported by the EPA, which provided Hunters Point Family with a \$200,000 Environmental Workforce and Job Training Grant in February 2012. The EPA has also partnered with the Hazardous Materials Training & Research Institute, at the Eastern Iowa Community Colleges, to develop a "Brownfields Jobs Development and Training Toolkit," which can be downloaded from its website. The EPA links these environmentally wasted sites with socially wasted surplus labor, or as it puts it in a recent report, *Improving Land and Lives: 10 Years of Investment in EPA's Brownfields Job Training Program*, the "EPA is literally putting both people and property back to work."

That day in her office at Alice Griffith, I asked Anika about the Hazmat training program that Green College would facilitate, remembering other Bayview-Hunters Point residents who had voiced fears that today's workers were exposed to harmful pollution, and who connected this hazardous work with shipyard labor in the past. Instead, I was surprised by how positively Anika felt about the program. "There is a lot of money in this," Anika, told me referring to the high wages most Hazmat workers take in, relative to other blue-collar jobs, and added, "we can employ all our kids." For Anika, the shipyard's polluted landscapes also represented an economic opportunity, but in the sense of desperately needed wages to support livelihoods and life chances.

Hazmat workers represent one end of the brownfield commodity chain. At the other end are populations in cities and towns that house hazardous waste landfills, like Tooele County, in Utah. A few blocks north of shipyard, the Hunters Point power plant is also in the process of hazardous remediation. Truckloads of toxic soil leave the power plant en route to a private hazardous waste landfill, run by Waste Management, near the farmer worker town of Kettleman City, CA. Trucks also transport toxic dirt from the Hunters Point power plant to the ECDC Environmental's hazardous waste landfill, in East Carbon County, on the eastern side of Utah⁷. Formerly a coal-mining town, exporting that extracted resource across the country in the early twentieth century, today East Carbon County is one of the largest importers of hazardous waste in the U.S. West. Municipal loans to renovate roads, water, and sewage lines in the town are based on the landfill's tippage fees, as the area has few other potential sources of revenue. This political economic situation complicates the efforts of residents of East Carbon, who are concerned about the health impacts of hazardous waste, in challenging the expanding waste business in the area (Shaw 2002, McManus 2012). For ECDC Environmental, the accumulation of hazardous waste in East Carbon translates to the accumulation of capital. For concerned residents in East Carbon, it represents the potential accumulation of toxic chemicals in their bodies. Tracing this geography of waste displacement from the Hunters Point PG&E power plant remediation project challenges the notion of the brownfield redevelopment as a story of environmental and economic progress. In other words, brownfield redevelopment is dependent on the wasting of other places – a waste displacement, rather than a cleanup.

Toxic Tour

When I signed up for the Navy's public bus tour of the shipyard, I was prepared for the experience of danger but not of beauty. Our tour group had met at the Southeast City College campus in Bayview-Hunters Point at 8am on a grey Saturday morning in September 2011. Matt Robinson, a public relations coordinator for the Navy, greeted shipyard tourists at the bus door with a clipboard, which showed list of names of those who had responded to the email announcement about the tour. He also handed out a map of our bus route and a sheet explaining the four main tour stops, at Parcels B, C, D, and E-2. As with the Navy's public meetings, the guided bus tour invited us to know pollution at the shipyard through these discrete spaces. Gregg, one of the environmental coordinators for the Navy's BRAC process and our tour guide for the day, sat in the front seat of the bus, chatting idly with the driver. As I climbed on board and looked for an open seat, I

recognized staff members from the EPA and Water Board who often attend the Navy's monthly meetings. "They're here to keep me honest", Forman later joked, when he introduced the environmental regulators to the rest of the tour group. I had also recognized a representative from Lennar, and I took a seat in front of him.

As the bus veered out of the parking lot and headed south toward the shipyard, Forman turned on the speaker system and welcomed us to the tour. "How about we go around the bus and introduce ourselves, and say where we're all from", he suggested. Along with the staff members from the environmental agencies and Lennar, the other members of the group included several artists who had studios in old military buildings on the shipyard, and a few residents from Bayview-Hunters Point. Gregg continued with his introduction. This was the third bus tour of the weekend, he said, part of the Navy's efforts to communicate the progress of base cleanup to the community. Our tour would last about an hour and a half. We would have a chance to see parts of the base that are closed off to the public, and to hear about the shipyard's history along with the various testing and cleanup activities on the site.

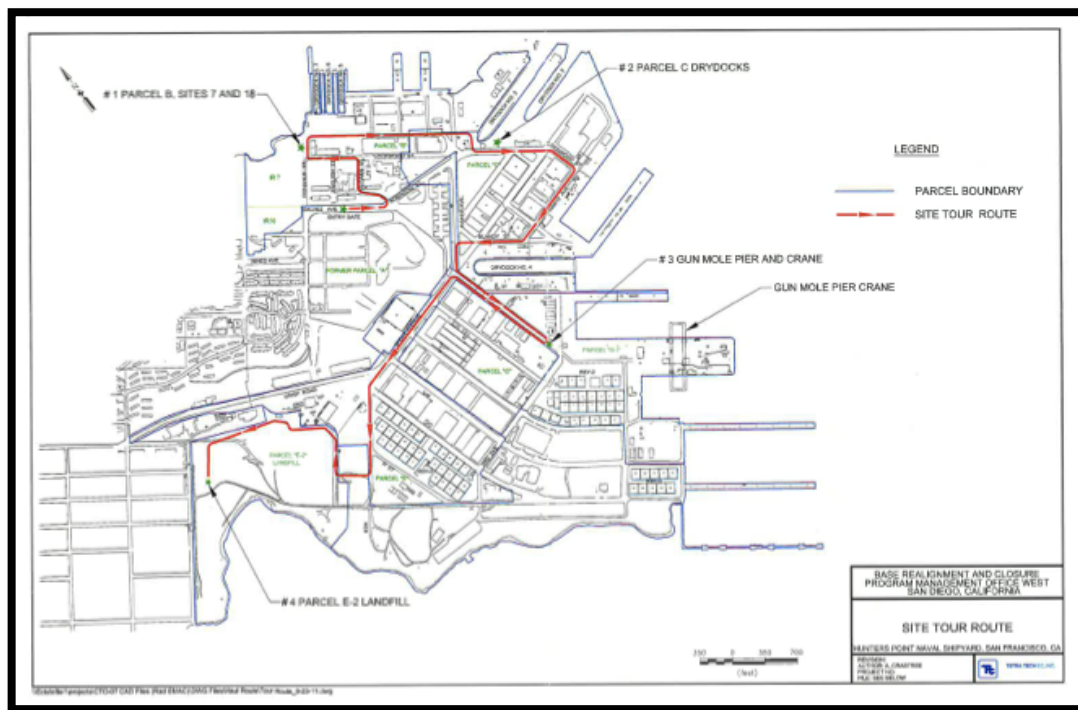


Image 9. U.S. Navy Hunters Point Shipyard Bus Tour Handout, September 2011.

A few minutes into his introductory remarks, Gregg's cell phone began to buzz, and he clicked off the microphone. As he spoke to the person on the other line, he moved toward one of the bus windows and looked intently at a car driving alongside the bus. "Pull over up there," he told the bus driver, and the car outside that Gregg had stared at parked behind us. Three black women, clearly upset at Gregg for leaving the City College parking lot without them, entered and sat together on one side of the bus. They were residents of Bayview-Hunters Point, and one woman introduced herself as member of the Hunters Point Shipyard Citizen's Advisory Committee (CAC). The CAC is run by the San

Francisco Mayor's Office, and consists of Bayview-Hunters Point residents and local business owners. The CAC had been established in 1993, along with the Navy's former Restoration Advisory Board, to advise on the shipyard redevelopment project and serve as a liaison to the broader community. That morning, it seemed that the CAC member did not have the same status, in Gregg's mind, "to keep him honest" as did the scientists from the state environmental agencies.

The bus continued toward the shipyard, and we entered from the gates at the end of Innes Avenue. We descended into the flatlands of the former Parcel A, an area that had recently been designated "clean" and transferred over to Lennar. Lennar's new property sits more or less in the middle of the shipyard, and is surrounded by Parcels B, C, D and E, areas still undergoing toxic remediation. As the bus drove down into a wooded area of the base, I was struck by the strong scent of pine. The bus drove slowly over a gravelly road, past 1950s-era, tan-colored, two-story buildings, partly shaded by thick clumps of pine needles. These were some of the artist studios, Gregg explained, adding that the shipyard housed one of the largest artist communities in the country. Outside several of the buildings were large, reclining Adirondack chairs, their squat legs hidden by tall brown grasses. The chairs called to me and I could imagine lazy afternoon naps in this quiet, wooded place. I was surprised by how pleasant and inviting it seemed, despite what I knew from my research about the history of pollution on the site.

As the bus wound through the buildings and toward the northern side of the base, I could see, through the front windows of the bus and across the choppy bay waters, the downtown skyline. The 500-acre shipyard juts out dramatically into the bay, and its view onto downtown San Francisco from the south is spectacular – it is not the iconic San Francisco skyline known through postcards. It is also an unusual perspective of the city – not seen today by many people (although this will change if Lennar's 12,000 condominiums are built). The sun had cut through the morning fog and shone down brightly – an attractive quality of southeastern San Francisco. In 1970, an Economic Reuse Report on the Hunters Point Shipyard noted that southeast San Francisco was sunny approximately 66 percent of the time – an odd thing to measure and one that makes sense perhaps only in San Francisco, a city known for its fog.

As we drove around the base, I was exposed to a spectacular view of a different sort – the one I had anticipated. The skull and cross bones of Hazmat signs stared at me from the sides of buildings and were staked as tiny flags on patches of ground our tour bus drove past. During the tour, as Gregg described the contamination on site, he also assured us that the pollutants were underground and posed no health risk to us, sitting inside the bus. At the same time, large signs in English, Spanish, and Cantonese warned of the danger past certain chain link fences.

Our bus emerged from the wooded area with the pleasant Adirondack chairs into a wide, grassy field, which ended abruptly at the bay waters. Gregg explained that we had entered Parcel B. Having studied the Navy's maps of the shipyard online, I knew the shipyard from this particular bird's eye view as a segmented space, chopped up into parcels and separated by thick black lines of the property/remediation map. On the shipyard that day, there were no borders neatly separating Lennar's "clean" Parcel A from the still-contaminated Parcel B. The border I did see was a chain link fence that ran along the edge of the shipyard's property, beyond which I could see a big wooden house, with several cars parked in the driveway.

The bus continued along a bumpy road, parallel to the bay on the north end of the shipyard. Stacks of concrete keel blocks lined either side of the bus, disrupting our view of the water. The keel of a ship is a structural beam near its base, the foundation for the ship's hull. When building or repairing a ship in a dry dock (a narrow space that can be flooded to allow a ship to enter, and then drained of water) the keel blocks are piled around the ship's hull, keeping it upright. I could see that each keel block had a number spray-painted on its side. They were all screened for radioactivity, Gregg informed us. Some of the keel blocks would have been in contact with radioactive ships from nuclear testing in the Marshall Islands. Radioactive sources were also commonly used in general industrial shipbuilding work between the 1930s and 1970s (U.S. Navy 2004).

Beyond the stacks of keel blocks, the bus idled near a row of two-story buildings, each stamped with Hazmat signs, their ominous the skull and crossbones staring back at us. "These are also artist studios", Gregg told us, adding quickly "all the contamination is underground". He pointed to one of the buildings, with faded green paint peeling from its sides. Gregg explained that the groundwater underneath the building had contained degreasers and solvents, like chlorobenzenes, and formed an underground plume that had been difficult to map – its shape had varied between 8 and 43 feet underground. My geographer ears perked, I raised my hand, asking Keith to explain a "plume". Appreciating this opportunity to discuss technical details, especially related to cleanup activities, Gregg explained that a plume referred to the shape or contour of chemicals underground, usually in reference to groundwater. The flat maps on the Navy power point slides at its monthly meetings do not convey this subterranean, three-dimensional spatiality of hazardous waste. A few months later I interviewed Allan, a scientist with the Water Board who often attends the Navy's public meetings, and asked about plumes. Allan explained that a plume refers to the concentration of certain chemicals, and their "edges" are better describes as areas of decreasing concentration. Allan and I had sat a café near his offices in downtown Oakland, drinking coffee. To demonstrate his point, he had picked up his paper cup filled with coffee. "Say we have a pool of water and we pour in this coffee – we would see a plume. Slowly the edges would get lighter and lighter. The plume is strongest in the center, at the leak, and it gets more diffuse as you move out". His explanation told me that the borders between hazardous chemical and "clean" ground, unlike the lines separating the shipyard's parcels on the map I held in front of me, are indefinite, blurry at the edges. I had asked Allan what happened when a plume migrates between parcels, and he responded that yes, this could happen, but that engineers monitored these kinds of things. To emphasize his point, he told me,

I was about to make a joke the other day: how many engineers does it take to figure out where to place a monitor? We had, like, fifteen people standing around these maps on a board, and I thought, this is just ridiculous. And then we all got our turn, 'Allan, are you ok with this?' 'Yes...'

Likely the consensus among the water engineers required in deciding where to place air monitors helped maintain the sense of objectivity of the process. Allan's response to the consensus process, which he seemed to feel was unnecessary, spoke to the ways he was not concerned the amount of pollution that might migrate across parcel boundaries. While not denying the presence of pollution, the volume or concentration

would, in his mind, likely be amounts he perceived as harmless. Yet the image of engineers standing around a map, with their birds-eye view of the shipyard with its neat lines and flat spatiality, contrasted with my experience of the windy, sprawling military base on the tour bus that day.

Gregg continued describing the chemical plume on Parcel B, explaining that the Navy had used cutting edge technologies to extract “the bad stuff”. They had worked for over a year and a half extracting 237 pounds of chemicals, “like a vacuum”, he said, using as a metaphor the household machine with which we might all be familiar. He reiterated that there was no risk to people walking around the shipyard if the contamination stayed underground. With a groundwater plume, the issue is whether the water flows out into the bay, “but if you can contain it”, he said, “its not a problem”. Bruce, with the Water Board, had displayed a similar confidence in technical expertise, what struck me as a part of a broader discourse of containment and environmental control.

Gregg motioned to the bus driver, and we continued along the perimeter of the shipyard, and turned sharply south, away from downtown, and along a maze of streets lined with large industrial buildings. “This is Parcel C,” Gregg explained, the “industrial heart” of the shipyard. He point to a large, six-story building, lined with broken glass like a toothy smile. Building 231 was a former machine shop, Gregg explained, where long assembly lines of workers used to repair parts of ships. Today the Navy was surveying the building for radionuclides, including radium-226, cesium-227, and strontium-90. Our bus continued slowly, past Building 253, also lined with cracked glass and empty window frames. Parts of it had been used for electronic and optical work, and as a radium paint shop. During the “old times”, Gregg said, the Navy used radium to make things “glow in the dark”. Later, I learned from the Navy’s *Historical Radiological Assessment* on the Hunters Point Shipyard that radium-226 was used widely by the Navy from 1930s to the 1970s, to illuminate surfaces without using electricity. The ionizing radiation in the paint would “scintillate”, or as Gregg put it, “glow in the dark”. Beginning in the 1950s, other radionuclides were used for illumination. The Navy’s *Historical Radiological Assessment* (2004) notes that “[d]isposal of radioluminescent devices was not controlled by specific procedures until the late 1960s”. These devices would have been dumped into open-air landfills like at Parcel E-2, or piles of debris at salvage yards. Liquid waste containing radium was also commonly disposed of in building drain systems.

In 1989, EPA designated the Hunter Point Shipyard a Superfund site, and placed it on the National Priorities List – the EPA’s category for the most contaminated sites in the country. Along with radiation from general shipyard activities and the Naval Radiological Defense Laboratory, the shipyard is polluted with a stew of persistent and bioaccumulative metals and chemicals used in industrial shipyard building and repair in the twentieth century. Some of shipyard’s pollutants (like asbestos and PCBs) and its historical waste disposal practices (like the unlined hazardous landfills at Parcel E-2) would today be considered illegal. Most of the industrial production at the shipyard happened before the creation of the EPA, and before environmental policies like the Clean Air or Clean Water Acts. Lined landfills were not widely used for waste management until at least the 1960s. Although landfill liners were available at the time, they were considered expensive, and not required by the state (Colten and Skinner 1996).

Most of the Hunters Point Shipyard’s industrial landfills are in a 46-acre area of the shipyard’s southwestern waterfront, today known as Parcel E-2, our tour’s last stop.

Between 1958 and 1974⁸, the area was used as an open-air landfill, where shipyard workers dumped liquid chemical waste, asbestos, sandblast grit, paint sludge, solvent wastes, and low-level radioactive waste (ATSDR 2001, Tetra Tech 2007). The known soil and groundwater contaminants include heavy metals, volatile and semi-volatile organic compounds, pesticides, polychlorinated biphenyls (PCBs), petroleum hydrocarbons, chlorine gas (Arc Ecology 2003). Potential radionuclides included radium-226, strontium-90, cobalt-60, and cesium-137 (Tetra Tech Inc. 2007). According to Arc Ecology, since the landfills are unlined, this waste has likely seeped into groundwater and flowed out into the bay. When the Navy closed down the shipyard in 1974, its protective cover for these unlined industrial landfills include only several feet of earth (Arc Ecology 2003).

Between 1976 and 1986, the Navy leased parts of the shipyard to a commercial ship repair company called Triple A Machine Shop, which operated in the area of the shipyard today known as Parcel B. In the 1980s and 1990s, Triple A continued to use the former shipyard's landfills, disposing of industrial debris, sandblast waste, oily industrial sand, and asphalt on that site. San Francisco's District Attorney sued Triple A for illegal dumping of hazardous waste at the shipyard, mostly around Parcel E-2. The company had received a fine of \$9.2 million dollars, which at the time represented one of the largest fines under hazardous waste law in the state's history (Finnie 1996).

As Gregg explained different clean up activities on the shipyard, the staff members from the EPA and the State Water Resources Board supplemented his account of cleanup at the shipyard. As our bus drove towards Parcel E-2, we passed tall mounds of strikingly bright green dirt. Several shipyard-tourists began taking pictures, which prompted an Stuart, and EPA coordinator for the Hunters Point Shipyard, to intervene, clearly worried about our possible interpretations of this unusual sight. These were piles of clean, imported soil, he told us, simply kept in place by a green spray, called "rhino-snot."⁹ Rhinosnot was "just like green food coloring", he explained, drawing a comparison with a familiar household product. "Rhino-snotting the dirt," was a way of managing the clean soil, keeping it from blowing away. I thought that the comparison with green food coloring was clever, since it made the oddly green piles seem familiar, normalizing the odd sight. Later, I looked up rhinosnot on the Internet. I downloaded the "Material Safety Data Sheet for Environtac II (the technical name for "rhinosnot"), which cautions, "inhalation of vapor or mist can cause headache, nausea, irritation of the nose, throat and lungs, and may cause eye/skin irritation" (Environtac II MSDS 2010). Stuart would have preferred us to have seen rhinosnot as inconsequential matter, yet for the construction workers who must wear goggles and gloves, rhinosnot is indeed active and consequential.

Parcel E-2 was the last tour stop of the trip, before the bus headed back along the route and towards the City College parking lot, and the one I was most anxious about. In August and September 2000, an underground fire burned at Parcel E-2, the site of the industrial landfills, at times sending multicolored smoke into the air. The California Public Health Department's risk assessment later concluded that residents living near the shipyard might have experienced "short-term" illnesses from the fire, but were statistically unlikely to suffer long-term consequences, such as decreased lung function or cancer. Many residents dismiss the health assessment's finding as, along with the fire, another example of how Bayview-Hunters Point has been historically marginalized, and exposed to toxic waste. I explore in more detail how residents feel about E-2 at the end of the chapter.

The Navy's remedial plan for Parcel E-2 involves installing an eight-inch thick layer of Visqueen™, a proprietary industrial-grade plastic, around today's unlined landfills, "capping" them, and building an L-shaped wetlands habitat around the toxic, newly "capped" site. I remembered a Navy meeting in March 2012, when one of the Navy's representatives had brought a piece of the Visqueen, to show residents its thickness, offered as evidence of its sturdiness in containing toxic waste. At that meeting, I spoke in the back of the audience with Larry, Arc Ecology's staff scientist. Arc Ecology supports the wetlands design, but only if entire landfill site is removed. As Larry told me that night, "a full excavation of Parcel E-2 would be best. It's like raisin bread, and the Navy doesn't want to get into it. There is a lot of uncertainty and unknowns with this parcel."

That day in the bus, we idled near Parcel E-2, looking out on the edge of the water, and Yosemite Slough beyond. Gregg pointed to the squat air monitors located around the site, letting us know that the Navy was concerned about the health of the workers. "All the air monitors are governed by rules for air quality management", he informed us, as if the government standards, like the environmental agency scientists on the bus that day, kept the Navy "honest". Gregg explained that the panhandle on the west side of E-2 would be a wetlands habitat, and after its cleanup "you will have a beautiful, healthy ecosystem", despite the presence of landfills underground. In July 2012, I spoke with Jack, the Hunters Point Shipyard contact from the Department of Toxic Substances and Control. He echoed Gregg, when I asked about the remedial plan for Parcel E-2. "I am so excited about the work at the shipyard," Jack told me,

...because at the end of the day we're going to get the property to a point where people can use and enjoy it, even wildlife and the critters that want to use this property. Some of the remedies, like for E-2 – we will have a really high quality habitat for critters!

For Jack, as for Gregg, the toxic waste in E-2's landfills would effectively disappear behind the Visqueen cap. What both described to me was an idea of nature that evacuated the potentially hazardous waste underground. With this logic of risk based environmental remediation, in other words, the residual waste seems to have disappeared.

A month after my interview with Bruce, I met with his colleague Allan – a geohydrologist with the State Water Board who works on the Hunters Point Shipyard project – at a café down the street from their Oakland office building. I brought a several maps of Parcel E-2, downloaded from the Navy's website, interested in how engineers like himself think about building a wetland habitat on a Superfund site. In my interview with Allan, I also brought up the question of health hazards associated with new chemicals introduced in the brownfield remediation process, like rhinosnot and the proprietary chemical, Ferox. Ferox is a proprietary zero-valent iron powder that is injected into the groundwater and helps break down chlorinated solvents and heavy metals (Liskowitz et al, US Patent, 1999). It was used to break down some of the chemical plumes Gregg had described on the bus tour.

I asked Allan about Ferox and he responded that the health concerns were factored into the risk assessment for the work plan. We were drinking coffee at the time, which he

had used to explain plumes and toxic leaks in groundwater to me. “It’s pretty well established what the issues are,” he said, referring to zero-valent iron, or Ferox, and then added, “I mean, if you drank it, it would probably be poisonous.” Allan meant this as an exaggeration, but these proximities and physical relationships between bodies and chemicals matters to Bayview-Hunters Point residents, which I examine in the remainder of this chapter.

“I would never live out there, they couldn’t give me a home”

For long-time residents, this relationship with pollution at shipyard is part of a lived experience of racism in the city. I began to understand this relationship during a surprise phone call in December 2010. A week before, I had emailed William, a Bayview-Hunters Point resident and an active member of the Navy’s former Restoration Advisory Board (RAB). The federal RAB program is jointly administered by the EPA and the Department of Defense, with the primary goal of communicating the status of environmental remediation to the communities living near federal properties undergoing hazardous remediation. RAB meetings are co-led by a community member (who is elected by other community members who attend these meetings) and a (selected, not elected) Navy representative. In 2008, the Navy shut down the Hunters Point Shipyard RAB for becoming “too political” and focusing on topics outside of the technical realm of its environmental remediation project, like jobs and Lennar’s redevelopment work. Today it holds “Community Informational Meetings”, which are power point driven presentations, with time for public comments at the end. I knew about William from reading through transcripts of the RAB’s meetings between 1993 and 2007 at the government documents desk at the San Francisco Public Library.

In contrast to the Community Informational Meetings today, in the 1990s and early 2000s, the Hunters Point Shipyard RAB meetings were often well-attended events, and could last for several hours. The RAB transcripts I read through at the San Francisco Public Library reveal a sustained, focused inquiry by a cohort of long-time Bayview-Hunters Point residents, many with family connections to the shipyard, into the Navy’s remediation practices and the shipyard’s toxic history. Residents pressed the Navy on topics like the history of radiation at the shipyard, and the connection between pollution and cancer rates. I had jotted down names of active Bayview-Hunters Point residents in the RAB process that I hoped to get in touch with, and got ahold of William’s email through other contacts in the neighborhood. After he called me in December 2010, we spoke over the phone several times over the next few years.

William’s mother was from Louisiana, and his dad was from Arkansas. They came to San Francisco during World War II, and settled in the Fillmore district. His parents worked at two different shipyards at the time. Clarence moved to Hunters Point when the city’s Redevelopment Agency started its Western Addition/Fillmore urban renewal project. As he remembered to me, “When I lived in the Fillmore, they just tore up everything, to move the so-called Negro out”. As with many other long-time Bayview-Hunters Point residents, Clarence compares redevelopment in the southeast today with the Fillmore in the 1960s, emphasizing it as a racially discriminatory process. “Redevelopment is always in low-income communities of color”, he added, after drawing

this comparison. Based on his experience of living in San Francisco, the meaning of “redevelopment” for Clarence is not progress but social marginality and displacement.

In the 1990s, Clarence started working with Communities for a Better Environment, a California-wide environmental justice organization, educating people about the location of brownfield sites, and worked on a report that mapped over one hundred brownfield sites in Bayview-Hunters Point. In the context of this environmental justice-mapping project, the polluted brownfields sites were offered as evidence of the disproportionate siting of hazardous waste in Bayview-Hunters Point, and of environmental racism. In our multiple conversations about the history of radiation and environmental health at the shipyard, Clarence often linked Hunters Point with Port Chicago, suggesting the ways he saw the shipyard as part of a broader pattern of military racial violence. As discussed in the introduction, in July 1944, two warships being loaded with ammunition exploded at the Port Chicago military base, killing 320 men. Of the people killed, 202 were black sailors, as they had been working in segregated munitions loading crew. Fifty of those men were convicted of mutiny charges by an all-white military tribunal (Arbona 2013).

Over the phone that afternoon in December 2010, I had asked Clarence about his take on the toxic dusts generated by Lennar’s construction work at the shipyard between 2006 and 2007, to which people living near the shipyard had been exposed for over a year. The dust contained asbestos, making people vulnerable to mesothelioma – an especially difficult form of lung cancer. Many Bayview-Hunters Point residents are familiar with mesothelioma because of family members or friends who developed the cancer after working for years with asbestos on the industrial shipyard.

In 2007, the Bay Area Air Quality Management District had fined Lennar for negligence in monitoring asbestos during its construction work at the shipyard, on the former Parcel A. Its asbestos air monitors, which were designed for indoor monitoring, had malfunctioned for over a year during 2006 and 2007. On the dates that the monitors did work, records show that the concentration of asbestos particulate matter from the grading work consistently exceeded established “safe” standards (California Department of Public Health 2007). Many residents of the public housing developments uphill from the construction work had reported health problems during this time. The risk assessment eventually conducted – after a year of reported health problems – acknowledged that residents had suffered their reported illness, but because the grading company had used the wrong kind of air monitor, the state’s health department “not able to interpret whether dust exposures in the community occurred that would explain some of the community health complaints such as headaches, bloody noses, adult onset asthma, respiratory systems, nausea and vomiting” (California Department of Public Health 2007). The asbestos in Lennar’s construction dust was mainly from the serpentine in the bedrock dug up through their grading work, and the fact it was considered “naturally-occurring” asbestos, rather than industrially produced, and used in shipyard operations, was repeated often by the development company and the city’s health department. This had the discursive effect of de-politicizing the toxic dust¹⁰.

Many Bayview-Hunters Point residents saw the dust exposures as a form of racism, linking it with a historical experience of racialized occupational exposure at the shipyard. I saw this connection made at several of the Navy’s remediation meetings in 2010 and 2011. During those years, the issue of the asbestos-dust had resurfaced, in part

because of a lawsuit filed by Greenaction for Environmental and Health Justice and People Organized to Win Employment Rights (POWER) against Lennar, challenging the company's environmental impact report for inadequately assessing the potential health impacts from redeveloping the brownfield site. The groups had argued (ultimately, unsuccessfully in the courts) that Lennar's EIR violated California Environmental Quality Act protocols because it contained too much uncertainty, and requested more details about potential health threats from the cleanup activities. Additionally, in 2011 a Freedom of Information Act request released email correspondence between Lennar and various environmental regulatory agencies showing how the state agencies worked with Lennar to produce and police "facts" supportive of Lennar's development projects. "It seems to me that the available facts are on our side," said an internal email in the Department of Public Health, "so we should stay away from trying to create more data." The author of this email was referring to data collected by the public health department on workplace exposure to asbestos at Lennar's construction site. "More data might not help us", the email's author concluded (Upton 2011). More data might have created more uncertainty about the events, and thrown the health consequences of Lennar's construction work into question.

At one shipyard remediation meeting in January 2011, I listened to the Navy list the amounts of toxic soil removal activities it anticipated for 2011, and hear about upcoming bus tours and the year's meeting schedule. Keith Forman, who led the meeting, did not address the topic of Lennar's construction dust. Since the Navy had no legal responsibility for the former Parcel A, after it was transferred to Lennar, it did not see a reason to put the issue on its agenda. For Bayview-Hunters Point residents, these lines of property ownership were not relevant, and the issue of the toxic dust was often raised in the public comments period at the end of the Navy's monthly meetings that year. That particular evening, a woman stood up at the back of the room. "I've seen workers come off the shipyard without any protective gear", she said, "like the previous generation, which died off". Here she drew a connection between Hazmat workers cleaning up the shipyard today and the Navy's shipyard workers in the past, when asbestos was a normal part of shipyard operations. Janette Sherman, who I interview in the fourth chapter of this dissertation, worked in a lab on the shipyard during the 1950s, and remembered seeing piles of asbestos outside her lab window. She later testified to this in Hunters Point Shipyard workplace compensation lawsuits.

At the Navy's meeting that night, the woman in the back of the room continued. "How does an average citizen find out about the daily exceedences from the shipyard construction?" she asked, referring to the concentrations of asbestos that had exceeded risk levels during Lennar's construction work. She ended by saying "it's still killing people. These are crimes against humanity." Although new, "fence-line" monitors had been installed, and the local group, Arc Ecology, contracted to install independent asbestos monitors alongside the development company's monitors, the construction work continued to churn up dust.

To the city health department and Lennar, the dust exposures during 2006 and 2007 were the consequence of accidental bad practices, of not having enough, or the right kind, of monitors in place at the construction site. For the woman at the Navy's meeting that night, and for William, from the RAB, these dust exposures were also an effect of historically violent social relations. "The mesothelioma is the second round of deaths", Williams told me over the phone, referring potential effects of asbestos and situating them

within historically hazardous labor at the shipyard. Like the woman at the naval remediation meeting, he connected the construction dust, generated by redevelopment work, with the shipyard's toxic past, explaining, "the cancers from the NRDL [the Naval Radiological Defense Laboratory, which operated at the Hunters Point Shipyard], was the first round of deaths". I asked Williams if he could elaborate on this, and he told me "the workers didn't have protection, and the health department, they just don't tell them." When I asked William if he thought the Navy would clean up the shipyard he told "they should move all that dirt out", referring to the fact that the Navy will leave a certain amount of toxic waste, in concentrations below established risk levels, or behind protective barriers like the landfill cap on Parcel E-2. He had added, "I would never live out there, they couldn't give me a home".

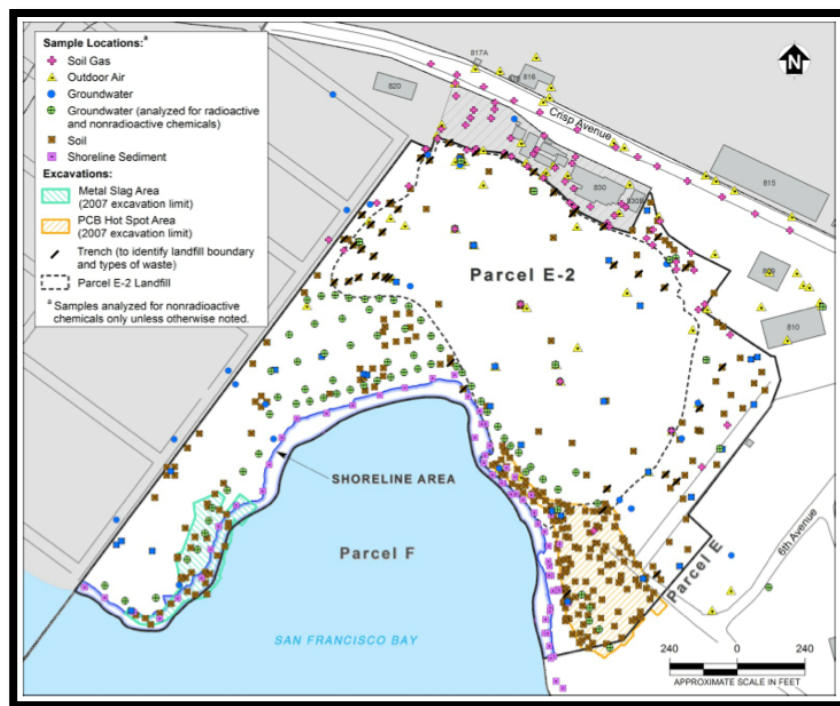


Image 10. Soil Sampling on Parcel E-2. Note that the landfill area itself has much fewer core samples (U.S. Navy Community Informational Meeting, power point presentation, September 2011)

The connections Clarence drew between Port Chicago and Hunters Point, and his reaction to the thought of living on the shipyard, were repeated by to me Malcolm, an scientist who works with Black Health Equity Council, who I met at the Navy environmental meeting at the Asian Pacific Community Center, in August 2011, and where I began this dissertation. I interviewed Malcolm several times over the phone, and later joined him on a bus-led toxic tour of Bayview-Hunters Point. I had met Malcolm at meeting in which the Navy presented on their proposed remediation plan for Parcel E-2, including the plastic landfill liners. Malcolm was opposed to this plan. At the meeting, Keith Forman had displayed slides of Parcel E-2 showing pin points where Tetra Tech had bored holes into the ground, to remove cores of soil and send to a lab for analytical testing. Forman's slides showed large clusters of pinpoint around the landfill sites, outside its

borders, but very few core samples had been taken at the landfill itself. I had asked Forman about this during his presentation, and his answer revealed to the audience that the composition of the landfill was considered too dangerous and unpredictable to thoroughly sample. Malcolm had approached me at the end of the meeting and thanked me for my questions, and we exchanged business cards.

In one of my interviews with Malcolm over the phone, I asked him what he thought about the landfill cover at Parcel E-2, and he dismissed the risk-based technical solution. “With the cap, shit fails” he said to me. Malcolm continued his thought in saying that “At the NRDL, with the black laborers, it’s the same as Port Chicago, all racism. They [the workers] lived next to the city dump, worked at the shipyard.” Here he referred to the multiple and different forms of waste people in Bayview-Hunters Point have lived with over the years. While Port Chicago was an instantaneous event – an explosion – the violence at the shipyard, whether asbestos or radiation, works more slowly, often not manifesting for decades (c.f. Nixon 2011).

My conversation with Malcolm was lively, and I joked with him, remembering Clarence’s comment. “So you wouldn’t live at the shipyard?” I asked. “Definitely not,” he said, laughing at my suggestion, and added, “I’d be dead before the symptoms showed up.” In the following section, I examine the meanings Parcel E-2 to many black residents, who link it with a historical experience of racism in the city.

“We don’t need people to continue killing people out here”

In July 2012, I attended a packed meeting at the Bayview Opera House on the contentious issue of the proposed landfill cap for E-2. This was not an event hosted by the Navy, rather it was convened by a local environmental organization, Arc Ecology, which has monitored the shipyard since the 1980s. Arc received a Technical Assistance Grant grant from the EPA, which provides funds for “brownfield communities” to navigate the technological complexities of remediation and redevelopment. Arc had hired three independent scientists – not associated with the Navy or any of its contracted companies – to evaluate the scientific evidence supporting the Navy’s decision to cover the landfill at E-2 with an industrial-grade landfill liner, rather than remove the hazardous waste. All three scientists were white men, and they sat uncomfortably behind a foldout table at the front of the room, facing a largely black audience. To my eyes, the men did not appear much different from the Navy’s representatives, its contractors, or the staff from state environmental agencies who attend the Navy’s monthly remediation meetings. These professional groups also tend to consist of white men, and they usually sit among themselves, apart from Hunters Point residents (who are usually black) who show up at the meetings. This event had the largest turnout I saw in two and a half years of attending meetings on the shipyard’s toxic environment, representing the significance of Parcel E-2 in Bayview-Hunters Point.

Each scientist introduced himself and provided a verbal resume attesting to his expertise and objectivity on the matter at hand. Afterwards, a long line of Bayview-Hunters Point residents stood behind a microphone that was placed in the middle of the stage, to give public comment.

Karen Pierce, a lawyer, public health advocate, and long-time resident of Hunters Point was the first to take the microphone. “This is an environment justice community,” she spoke directly to the three scientists, “and the EPA is required to take this fact into consideration, to apply higher standards in their risk assessments. Even though we are no longer the majority, we are still the African American neighborhood in San Francisco. If you look at the public health research for the past thirty years, it shows that disparities in health for African Americans has gotten worse, and not better.” Like many who spoke that day, Pierce asked the scientists to take into account the specific socio-ecological history of the southeast as scientifically relevant in evaluating the landfill cap. Linda Richardson, one of the founders of the Southeast Alliance for Environmental Justice, spoke next, echoing Pierce’s comments. “Look at the ‘Toxics and Health Profile’ for Bayview-Hunters Point,” she said, referring to a community health survey she had coordinated in 1999, with the city’s Department of Public Health, and pointing to the fact that residents of the southeast are exposed to a wide range of pollution¹¹. Part of survey involved a questionnaire sent to 522 randomly selected households (of which 399 of those participated). In the “Rating of City Services” section of the questionnaire, “environmental cleanup” had received the poorest rating from Bayview-Hunters Point households – a worse rating even than public housing or welfare (Bayview Hunters Point Health & Environmental Assessment Task Force 1999). Richardson argued that environmental hazards of E-2 should not be considered in isolation or in the abstract, but as part of a cumulative burden which residents of the southeast carry in their own bodies and experience with daily.

Richardson and Pierce’s comments had received applause, and more residents joined the line in front of the microphone, which stretched down an aisle between two sections of fold out chairs. The evening meeting seemed nowhere near an end. In contrast to monthly naval remediation meetings, where environmental agency and naval representatives often outnumber Bayview-Hunters Point residents, and where public comments that invoke racism or environmental injustice fall on ambivalent ears, the large crowd at the Bayview Opera House that evening responded with encouragement, wanting to hear their truth spoken to power. This worried the director of Arc Ecology, who interrupted the line of speakers for a moment, taking his chance to remind the audience that these particular scientists were not from the Navy or the state, and that they did not have any power over whether the landfill cap was constructed or not – they were simply tasked with offering an independent assessment. Still, to many who sat in the Opera House that evening, this assessment offered the promise of validating long-standing fears and a lived experience of toxic vulnerability.

A young woman approached the microphone after Arc Ecology’s director was ushered off stage. “I’ve lived here, across from this Superfund site, for forty years,” she told the scientists, adding that her father had been in the military. The woman faced the professional experts assembled behind the foldout table with her family’s long connection with the shipyard –including her own knowledge that came from growing up in its shadow – and let them know she spoke from a position of expertise as well. “We don’t care what you want to build over there, people’s health should come first.” Like others who spoke that night, she referred to the underground fire at Parcel E-2 and the unpredictability of its contents, making the case that the landfill cap could only be a temporary and inadequate solution. “Concrete cracks,” she offered as an analogy to the landfill cap. “You walk

outside of here, you can see concrete cracking all over the place.” Her comment drew from her own experience of public infrastructure in the southeast, where city agencies and services do not work the same as in other communities, and where urban neglect manifests visibly and tangibly in the urban environment. “If your pocket book comes up short,” she added,” well, our pocket book has been coming up short for years.” Her dismissal of any economic cost-benefit analysis was echoed by many others who spoke that night. “You can’t put a price on our lives,” said one older man. “How can you balance \$300 million dollars (the difference in cost between capping and excavating E-2) against future generations?” said Willie Ratcliff, editor of the *San Francisco Bayview* and former shipyard rigger. “No way in hell we should let them keep E-2, he added, “I don’t care what it costs.” After Racliff said this, a man from the audience spoke up, “When I hear Superfund,” said another man, “I think someone’s getting a whoooole lot of money.”

Espanola Jackson, a long-time neighborhood activist, stood up at the microphone and said, “I don’t have confidence in anyone anymore. In 2001, the government started sending \$10 billion a year to fight wars overseas. I asked our representatives, could we have a one time \$10 billion to clean up the shipyard?” Before living in Hunters Point, Jackson lived in the Fillmore and before that, in Texas. In an interview with Jackson, I had asked if she had worked on the shipyard, and she told me with pride that her husband had been part of the “Navy brass”. Jackson spoke about his national service with a sense of pride that communicated an older, positive association with the Navy and the shipyard. I imagined her as a young woman, filled with a sense of patriotism and belonging, her childhood memories from Texas still fresh in her mind. Today Jackson is a regular attendee at the naval remediation meetings. She often sits in the back of the room, peppering Navy spokespeople with questions about the cleanup process, and they address her with a well-earned respect. To the scientists assembled at the Opera House that day, Jackson told them, “We don’t need people to continue killing people out here.” Her comments brought together a current war in Afghanistan with the remains of one in Hunters Point, suggesting that the military might take more responsibility for the social and environmental costs of war.

A long-time activist, Jackson exercises a powerful presence in community meetings, and her comments brought a large applause. An older man spoke after her, shifting the focus from an image of a militarized globe to his family in Hunters Point. “I have nine grandkids,” he told the scientists. “We’ve lived with this stuff for too long, I’ve lived in Hunters Point, near the shipyard, my whole life. Whatever has to be done, whatever money needs to be spent, it’s worth it – it’s worth the lives you’ll be saving.” The man’s concern for future generations was echoed by Marie Harrison, a long-time organizer with Greenaction for Environmental and Health Justice. Harrison told the panel of experts that she “wants the shipyard to be safe for her daughter, her grand-daughter, her great-grandson.” Harrison’s concerns about future generations and social reproduction suggested that the life span of many radioactive and persistent chemicals on site might outlast the Navy’s proposed landfill cap – the idea that someone, at some point in time, might be confronted with the toxic waste.

Sinks and Spills

A few months after the Parcel E-2 meeting, I interviewed Marie Harrison in her office at Greenaction for Environment and Health Justice, on Market Street in downtown San Francisco. Harrison grew up in the Fillmore – her dad came to San Francisco from Kansas City, Missouri, and he worked at the shipyard. Like Willie Ratcliff, Harrison started working at the shipyard when she turned eighteen years old, and she remembered her job as a file clerk specialist through a big smile and a sense of pride. She met her husband then, a Louisiana-born medic who served in the Army. They moved to the Bayview-Hunters Point a few years later, when she had her second child.

Harrison has been involved in the Hunters Point RAB and in monitoring the shipyard remediation process for many years. That day in her office on Market Street, I asked for her perspective on the Navy's work in remediating the shipyard. Did she think they were going to clean it up? By way of an answer, she recounted her experiences with the naval officers in the BRAC process, including the ways they have dismissed her own knowledge of the shipyard, gained through personal experience.

My first encounter with the Navy, over the contamination that was left, as a civilian at the shipyard, I asked the commanding officer, how many military families that lived there contracted some type of cancer, like mesothelioma? And he said to me, well I can't give you that, no one knows that kind of information. And I said, oh I beg to differ. I used to work for the Navy, did I tell you that? Did I also tell you I was a file clerk specialist?

Harrison, like many other residents, was concerned about the health effects on workers in the past. She also asserted her own expertise on the shipyard's history, as someone who worked on the military base.

He looked at me and he said, what does that mean? And I said, it means that I couldn't order a box of pencils, without it being signed off like three times. In my office, my commanding officer had to sign off for me to get an aspirin, because I had a headache. But in order to get that aspirin, I had to have the commanding officer sign off, then the doctor sign off, and then the pharmacist sign off. So that was three different signatures, on a form that was tripled, and they kept a copy, and the pharmacists kept a copy, and I brought a copy back to my commanding officer, that I had to file!

In describing her expertise with the Navy's bureaucratic procedures – most likely counting the number of aspirin pills she took that day, Harrison called into question why something so important as worker's occupational health and their illness were not similarly monitored and counted.

Harrison also told me how she had challenged the lead BRAC officer's expertise on the question of groundwater contamination. She was concerned that groundwater from the shipyard was leaching into the ocean. People used the bay to fish, she said, and caught crabs and shrimp, which she noted were bottom feeders and likely to be contaminated.

The officer answered Harrison's question by first mapping the area of the Navy's responsibility. The Navy owned one hundreds yards into the ocean, he told her, and the toxic sediments in groundwater contamination would most likely fall within its ocean "property". Today Navy is responsible for remediating 440 acres of ocean space that wraps around the shipyard, known as Parcel F. The officer mapped the legal boundaries of the Navy's responsibility onto flowing ocean water, as if it could be contained.

Harrison challenged him and the ways his scientific explanation neatly mapped on to the Navy's legal responsibilities, as she recollected to me:

I need to say something – I'm not a scientist, I'm not an oceanologist, I'm not sure I can even pronounce it correctly, what I am is a mother and a resident of this community. So that's what I am, and now let me tell you what I know. I know when the tide rolls out, and it comes back in, it doesn't just pass over everything that just leached off the land, into the water, I know that when the fish swim into your, quote, hundred yards of water that you own, they don't get up to this invisible line and say, that's the Navy's land! That water belongs to the Navy, and you know, I can't swim there because it's contaminated. ...Now, are the crabs and shrimp as smart as the fish who get up to that invisible line and go, oops, can't go there!

Her humor was lost on him, and he reminded her that she wasn't an engineer and couldn't understand the complexity of the clean up – she didn't have the technical training and therefore her own knowledge bore little relevance to the question at hand. This irritated Harrison, and she took her coffee and poured it into his half full glass of water. (She told me, with a little embarrassment, "it's comical, but he never forgave me for it"). "Oh damn," she said, "would you mind telling my coffee to get back in my cup, because I own it and you own the water and by the way I want my coffee warm as it was when I poured it in there (to which he replied, as she remembered to me, "Must you always?").

Purposely spilling her coffee into the Navy officer's cup of water visibly demonstrated the problem Harrison saw with pollution at the shipyard – that there were no neat borders between the contaminating coffee and the "clean" water, and that a property map could not separate the two. In a sense, Harrison used "waste" – here figured as her coffee (just as Allan, the geohydrologist at the Water Board, had used his coffee as a toxic leak) as a political tool, using waste, figuratively, to "speak back", as Tim Edensor puts it (2005a), to the annoyed BRAC officer.

Likewise, this chapter has focused on waste on the shipyard, exploring its cultural uses and meanings, as a way of critiquing the Navy's discourse of controlled environmental cleanup, and more broadly, the idea that redevelopment at the Hunters Point Shipyard today is a form of environmental and economic progress. Thinking about waste as physical material and social process, as Ann Laura Stoler (2008) does with her analytic of ruins and ruination, also binds together what Bayview-Hunters Point residents already experience together as a part of their daily lives: a sense of social marginality, lived together with the material, toxic residue of urban and industrial systems.

In the following chapter I examine a different form of brownfield redevelopment, what Christopher de Sousa (2008) has called "the greening of brownfields", or the conversion of industrial and urban waste sites into ecologically valued wetlands.

¹ In this sense, the problem of waste – depending on the life span of chemicals, metals, and other health hazards in the ground – is also displaced onto future generations.

² The remediation plan for each parcel is guided by a specific Record of Decision (ROD), as mandated by CERCLA, or Superfund legislation. According to the EPA’s website, “A ROD contains site history, site description, site characteristics, community participation, enforcement activities, past and present activities, contaminated media, the contaminants present, scope and role of response action and the remedy selected for cleanup.” (see <<http://www.epa.gov/superfund/cleanup/rod.htm>>). RODs for each Superfund sites can be found on the EPA’s website. More extensive documentation about pollution at the Hunters Point Shipyard can be found on the Navy’s Base Realignment and Closure website, and in hardcopy form at the Navy’s Public Information Repository at the San Francisco Public Library. The Arc Ecology website is also an excellent source of information.

³ Naval Station Treasure Island had also housed the administrative offices of the 12th Naval District, likely is why Keith guessed that transport manifests from Hunters Point would have been stored there.

⁴ “Property” and “land” are not the same thing. Lennar identifies the Hunters Point Shipyard as polluted property, and seeks to realize exchange value through the space as real estate. Yet environmental services firms like Tetra Tech also identify the shipyard as a commodity, only they identify the physical land itself, or the pollution mixed up in the ground, as their commodity.

⁵ See “Gunpoint Announces Filing of Talapoosa Updated Estimate Technical Report, *Wall Street Journal*, April 15, 2013; “Centaurus Metals Strides Toward Development Brazil Iron Ore Project with Engineering Contract”, *Proactiveinvestors Australia*, March 11, 2013.

⁶ Donald Moore suggests this as a late twentieth century form of mining, and polluted earth as a “post-natural resource”.

⁷ Transport manifests for the PG&E cleanup can be found at the Department of Toxic Substances Control website, accessed at http://www.envirostor.dtsc.ca.gov/public/final_documents2.asp?global_id=38490002&doc_id=6016741

⁸ These are the official dates, in the Navy’s *Historical Radiological Assessment* (2004). I would be surprised if the area was not used as a landfill prior to the dates, but there is no evidence of that, as of yet.

⁹ According to the Envirotac website, “Envirotac II, affectionately called Rhinosnot, is a water soluble, vinyl acetate-acrylic copolymer”. It is a soil stabilizer and dust abatement product, “a proprietary blend of polymers that use proven long-chain nano-technology to form complex bonds at the microscopic level between aggregates.”

¹⁰ For different perspectives on this event, see ‘Naturally Occurring Asbestos in Bayview-Hunters Point’ EPA Fact Sheet, February 2010, <http://www.docstoc.com/docs/104207661/Hunters-Point-Asbestos-Factsheet-02-23-10pdf>; “U.S. EPA Review of Dust/Naturally Occurring Asbestos Control Measures and Air Monitoring at the Former Hunters Point Naval Shipyard (June 9, 2010), <http://www.sfdph.org/dph/files/EHSdocs/ehsHuntersPointdoc/EPAReviewDust.pdf>, “US EPA, SF Health Department and Lennar accused of asbestos collusion”, *San Francisco Bay Guardian*, March 21, 2011; “Email Reveal Alleged Cover-Up of Environmental Risks at Hunters Point” *The Bay Citizen*, March 21, 2011.

¹¹ Bayview Hunters Point Health & Environmental Assessment Task Force, “Community Survey” (1999). See http://rds.epi-ucsf.org/ticr/syllabus/courses/69/2012/05/31/Lecture/readings/com_survey_bayview_hunterspoint.pdf

Chapter 3 – From Urban Cesspool to Nature’s Kidney’s: Making Nature on the Industrial Waterfront

“You’re probably better off anyway strolling out the main path toward the tip of Heron’s Head unencumbered. When you get to the end, you feel like you’ve walked right out of the city and into the heart of the bay. Yes, there are factories to the left of you, the awakening ghost town of the Hunters Point Shipyard to the south, a bridge or two, cold hot glistening windows in the sprawling East Bay in the late afternoon, but the presence of these things is far away – muffled, half-asleep – and insignificant compared to the immediate pleasures of a crisp bay breeze, alternating whiffs of fennel and decaying seaweed, a crunchy path and a dazzling theater of flying creatures....”

-From “A Field Guide to 100 Birds of Heron’s Head”

“Until around the middle of the 20th century, wetlands were often perceived as unhealthy, dismal places that were impediments to economic development.”

-Boyer and Polansky (2004)

On a foggy morning in September 2012, I drove to Heron’s Head Park, just north of the Hunters Point Shipyard on San Francisco’s southern waterfront. The park is easy to access from the interstate freeway that runs along the length of Bayview-Hunters Point, and soon I was heading east toward the water, down a broad street called Cargo Way. I drove slowly, down-shifting behind several diesel trucks, which were also headed toward the bay. Heron’s Head Park is tucked among a few working piers, a scattering of weedy, vacant lots, and the skeletal remains of the former Pacific Gas & Electric (PG&E) power plant, all located immediately north of the Hunters Point Shipyard. It is a quiet area of the city, especially on the weekends. That morning I could hear the squawks of gulls and low horns of distant container ships, making their way to the Port of Oakland.

At Heron’s Head Park, I met Sonia, the last remaining staff member at Literacy for Environmental Justice (LEJ). LEJ had formed in the 1990s, out of the organizing efforts of the Southeast Alliance for Environmental Justice, or SAEJ. In the 1990s, SAEJ represented a coalition of Bayview-Hunters Point residents who had organized to oppose the siting of a second power plant in the neighborhood, which would have been located between the existing PG&E power plant and the Hunters Point Shipyard, along the cove called India Basin. The coalition was successful, and SAEJ continued campaigning against PG&E to shut down the original Hunters Point power plant, which had operated since 1928. A thirteen million dollar settlement between the city of San Francisco and PG&E that resulted from SAEJ’s campaign had established an environmental justice (EJ) grant-making program in the San Francisco’s Department of the Environment (Anne Eng, pers. comm. 2011). The city’s new EJ program and the San Francisco Port Authority supported

LEJ financially during the 2000s, which included a contract with the Port Authority to maintain the Eco-Center at Heron's Head Park. LEJ ran a number of programs that involved Heron's Head Park in the 2000s, including toxic tours of Bayview-Hunters Point, educational programs for schoolchildren (using the park's wetland as field sites for lessons in environmental science), and environmental justice internships for Bayview-Hunters Point teenagers, that included habitat restoration at the park. My first introduction to LEJ was on one of their toxic tours, in 2004, and it had culminated in a bag lunch at the park. Built in 1999, Heron's Head still felt new, and I recall that afternoon as sunny but the park as empty with the exception of LEJ's tour group. Financial support from the city and the Port Authority had dwindled over the years, and a few months after I met Sonia, the Port terminated its contract with LEJ to run the Eco-Center. Today LEJ operates programs at Candlestick Point State Park, which is adjacent to the Hunters Point Shipyard, on its southwestern side.

Sonia and I first sat at a foldout table inside the Eco-Center – an “off-the-grid” building on the uplands portion of Heron's Head Park, powered by solar panels and a wind turbine, a “green living roof” for heating and cooling, and wastewater treatment system on site. In 2010, the Eco-Center received one of the EPA's National Achievements in Environmental Justice Awards, “for creating an environmental justice center for use by the residents of San Francisco's Bayview Hunters Point and other communities with environmental justice concerns”. Inside the building, a wall of windows looked out on the park's flat marshland, its coastal plants a muted color under the morning's grey clouds. I asked Sonia how she became involved with LEJ, and she explained that she had majored in biology at Humboldt State University, hoping to work as an ecologist. “But as a POC, people always seemed to think I worked in environmental justice,” she told me, using the term POC an acronym for “person-of-color”. After graduating from college, Sonia taught at a high school for continuation students, and first came to Heron's Head Park with her science class, attending one of LEJ's programs. “I was surprised to see POCs leading environmental education”, she remembered to me. LEJ's curriculum focused on environment science, using the park's wetlands as a field site for experiments. Sonia had stayed in touch with LEJ – inspired by the social and physical space it had created to for POCs like herself to teach about environment science, rather than only talk about urban problems like toxic exposure – and eventually was hired as a staff ecologist.

Sonia suggested we take a walk along the park's trails. We took two pairs of binoculars and *A Field Guide to 100 Birds of Heron's Head* – a birding guide prepared by students at San Francisco City College, in collaboration with the Golden Gate Audubon Society – and headed down the park's long trail, which curves out into the bay. As we walked down the trail, to our right the park sloped down into the intertidal zone of the wetland habitat, which wraps along one edge of the heron's “head”. A rope and a few scattered signs kindly asked visitors to stay away from the ecologically sensitive area. Beyond the marshes, south of the park, I could see the Hunters Point Shipyard, separated from where we stood by a small body of water known as India Basin. The proposed PG&E power plant in the 1990s, which SAEJ had campaigned against, would have been constructed at India Basin. Today India Basin Shoreline Park runs along the water instead, an indication of the changing significance of the southern waterfront, from industrial to recreational space. To our left, a rocky embankment helped maintained the park's structure. Heron's Head Park is composed entirely of landfill, and is vulnerable to erosion.

As we walked, Sonia pointed to the salt marshes and explained that they were disappearing. A city parks bond that passed in 2008 would soon be invested into reconstructing the wetlands at Heron's Head, fighting against the erosive effect of the tides.

We stopped along the way to identify birds with the *Field Guide*, aided by the sun, which had broken through the morning clouds. At the tip of the park, where the trail ends, we saw a lone fisherman, his thin pole patiently pointed out into the bay. The San Francisco Bay has high levels of PCBs, mercury, and other metals and chemicals used in mining, manufacturing, and industrial agriculture (Goals Report 1999). California's Office of Environmental Health Hazards Assessment publishes an online guide to eating fish in the San Francisco Bay. The guide is published in eight different languages – mostly languages from the islands in the Pacific Ocean – including Tagalog, Samoan, and Vietnamese. It advises weekly limits for eating certain fish from the bay, and which parts of the fish to avoid completely. The fat and skin of fish can store PCBs, for example, and the guide advises a person to only eat the skinless fillet. The skin of a white croaker – a fish which often swims in shallow areas and is easily caught by anglers – is particularly dangerous, and should be removed and thrown away before. I saw a plastic cooler next to the man with the fishing pole that day, at the tip of Heron's Head Park. A year before, in September 2011, I had attended a different, bus-led toxic tour of Bayview-Hunters Point, with the San Francisco African American Community Health Equity Council. One of the last stops on the tour was India Basin Shoreline Park, another popular spot for pier fishing. Rather than a political achievement – the creation of green space from an industrial waterfront – the new park was a site on our toxic tour of environmental injustice in Bayview-Hunters Point. Our tour guide had pointed to a sign that warned people about fishing in the bay, which was in Chinese and English. He had explained that many ethnic communities in the southeast rely on fish as part of their diet, for both cultural and economic reasons, and so they are at greater risk of exposure to the bay's pollution. I wondered whether the man at Heron's Head that day knew about the state's fish consumption advisory.

Sonia and I turned around and headed back toward the Eco-Center, where we sat again at the foldout table and flipped through a picture album from LEJ's early years. Heron's Head Park was first Pier 98, built in the 1970s as an attempt by the San Francisco Port Authority's attempt to revive its maritime industry by building out the southern waterfront, near Hunters Point. The Port's efforts had failed, and the pier was abandoned. In the 1990s, birders from the Golden Gate Audubon Society noticed that marshes had formed along the edge of the industrial site. At the time, the Port Authority was engaged in a legal battle with the Bay Conservation and Development Corporation (BCDC) about the legality of landfill at Pier 98, and agreed to help fund the Audubon Society's proposed wetlands restoration project (Carol Bach, pers. comm. 2012). Today, Heron's Head Park is an elongated stretch of trails and salt marshes that curl out into the bay in the shape of its eponymously titled bird. Yet the park's shape also serves as reminder of its historical relationship to the surrounding industrial landscape. In the 1970s, the narrow landmass was built as a bridge onramp, intended as a second bridge to Oakland. In LEJ's photo album, a paper copy of a black and white photograph shows Pier 98 in the 1970s. In the distance is the Port of Oakland, but the picture focuses on a long, continuous pile of debris – blocks of concrete, wooden slabs, and rusty pipes – stretching out into the bay. The

enormity of the waste is dramatized by four tiny human shapes standing on top of one of the piles, surveying the scene. Later photographs from the 1990s, in color, show the main body of the pier as dumpsite, with old tires half-submerged in pools of water or resting on the brown and gray-green grasses of the shoreline. More recent photographs show volunteers clearing out the tires and school kids playing in the water. An aerial photograph towards the end of the album shows the newly constructed Heron's Head Park, with tidal zones curving along the top of the bird's head.

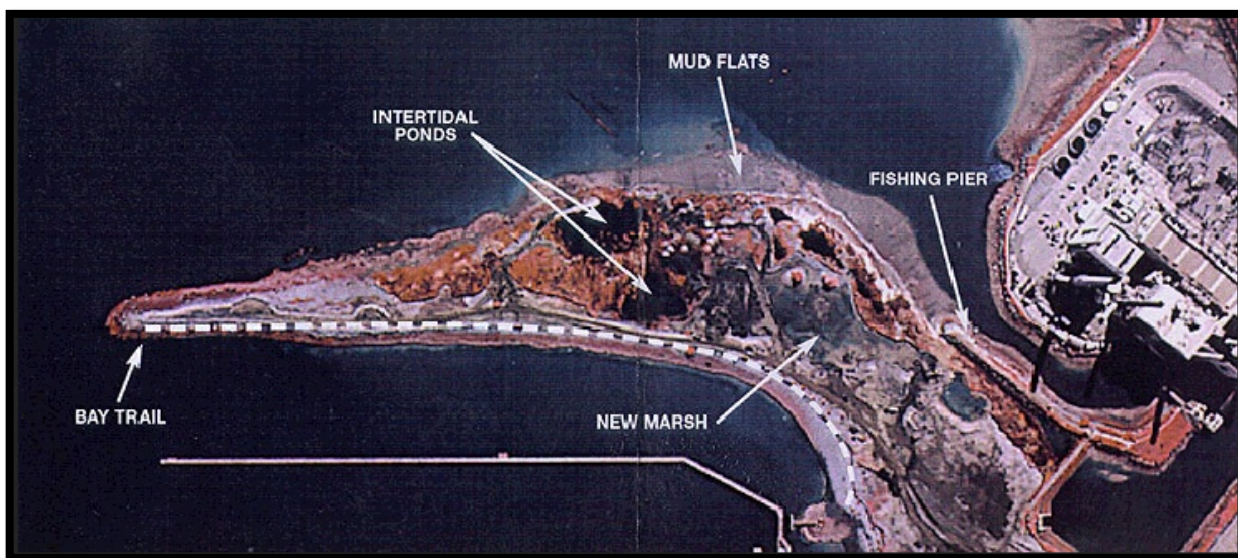


Image 11. Aerial of Heron's Head Park. The former Hunters Point power plant is to the right of the fishing pier. "North" is at the bottom of the image (photo courtesy, "Foundsf.org").

"People and Nature Reshape San Francisco Bay"

This chapter examines the history and cultural politics of three recently constructed wetland habitats along the industrialized waterfront of Hunters Point, focusing on Heron's Head Park. The other two constructed wetlands I discuss are Pier 94, immediately to north of Heron's Head/Pier 98, and Yosemite Slough, which is bordered by the Hunters Point Shipyard and Candlestick Point State Park. All three wetland construction projects were also hazardous remediation projects, and required health risk assessments and the removal of toxic soils. In contrast to the Hunters Point Shipyard, where a private development company hopes to profit from the construction of condominiums, offices and retail space, at these small wetland sites, the development project is "nature". In this chapter, I argue that today's "nature" is only possible in late twentieth century San Francisco, as an effect of political economy and racial difference in the city, as well as new hazardous remediation technologies and an emerging environmental services industry. As with the previous chapter on brownfields, here I am concerned with the ways urban wastelands are revalued and reused, including their cultural meanings and the stories people tell about them.

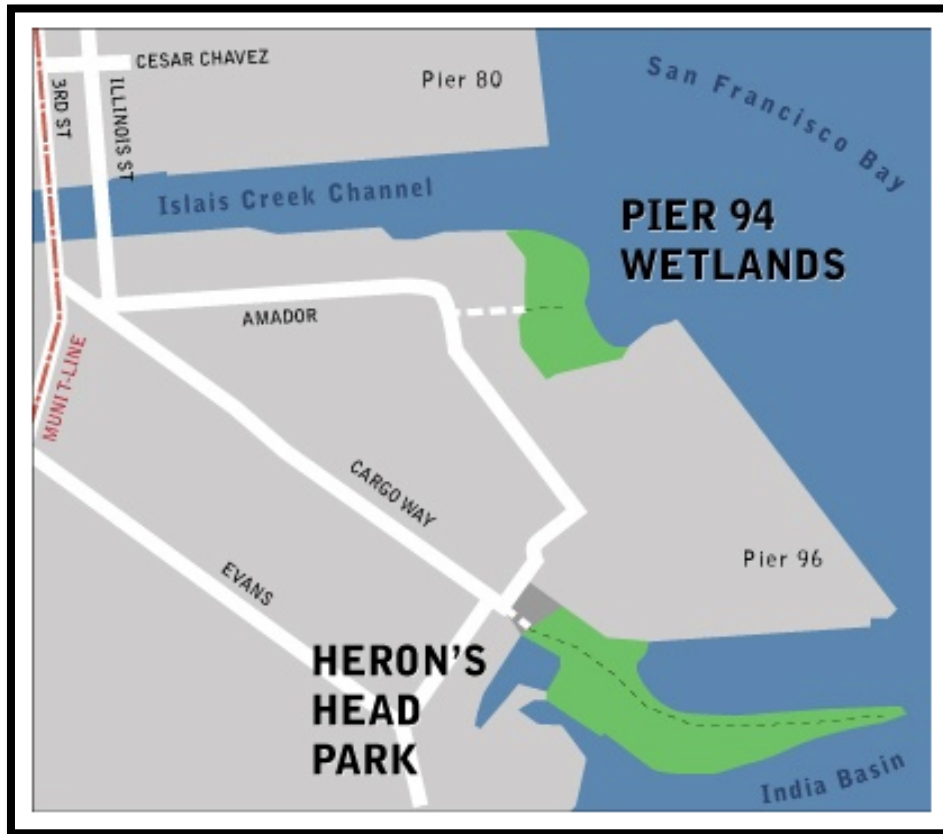


Image 12. Pier 94 Wetlands and Heron's Head Park (San Francisco Port Authority).

Both Pier 94 and Heron's Head/Pier 98 were built for maritime industry in the 1970s, and by the 1990s had become dumpsites for construction, commercial, and household waste. In the 1990s, the San Francisco Port Authority worked with the Golden Gate Audubon Society and several environmental engineering firms to construct wetland habitats at both sites, which today remains Port Authority property. The California State Parks department funded the wetland restoration project at Yosemite Slough, which was completed by Northgate Environmental Management in 2013. Yosemite Slough is also an EPA Superfund site, in part because it borders Parcel E-2 on the Hunters Point Shipyard, where the shipyard's industrial landfills are located. According to the EPA, construction debris, waste materials, and crushed bedrock from nearby hillsides were placed in Yosemite Slough's original tidelands between 1940 and 1970, narrowing the slough's channel, which was then used as a sewage and storm water outlet.

Emily Yeh (2009) develops a "genealogy" of the Lhalu wetland in Tibet as a way of critiquing the Chinese state's discourse of biodiversity conservation at its current wetland restoration project. Yeh traces a history of state water projects at Lhalu, including draining the wetland for grain production during the 1960s and the construction of a canal as a wastewater outlet in the 1990s. She also describes the ways Tibetan local residents have understood and transformed the Lhalu wetland over time. Today the Chinese state essentializes Tibetans as "in harmony with nature", and Yeh argues this discourse erases the agency of Tibetans and the ways they have produced the landscape in Lhalu. Yeh shows how nature and nation have articulated through previous state-led environmental

transformations at Lhalu, arguing that these historical water projects produced the grounds for the Chinese state's conservation project today.

Drawing from Yeh's analytical approach, in what follows I examine the conditions of possibility for the three constructed wetland sites in Hunters Point today. I show how today's "nature" spaces are products of changes in industrial and maritime geographies, racial segregation in the city, and a new urban strategy emphasizing the redevelopment of industrial land, or brownfields. I am less critical of the wetland restoration projects in Hunters Point than Yeh is of the Chinese state project in Lhalu, as the relations of power producing the nature projects in Hunters Point are more ambiguous, not easily mapped onto other lines of power. In this chapter I pay attention to the various ways Heron's Head Park is understood by Bayview-Hunters Point residents and environmental justice advocates. In the course of my fieldwork, I noticed that some residents talk about the park as environmental justice achievement, while others see it as a toxic site, or a compromise made between the city and PG&E, with little input from local residents. I also show the complex relationship between these nature projects and the current, market-led process of redevelopment in the Bayview-Hunters Point neighborhood today.

I begin by situating the transformation of San Francisco's southern waterfront within the broader history of wetland conversions in the U.S. In the nineteenth century, land surveys, industrial development, and public health concerns produced the area's tidelands – then referred to as swamps – as economic and environmental wastelands, necessitating their "reclamation", or conversion to solid land. Often this involved filling the tidelands with construction debris and other waste materials. In the 1970s, with the closure of the Hunters Point Shipyard and the general relocation of maritime commerce and industrial factories away from the city, the southern waterfront emerged as a historically new kind of urban wasteland, contaminated with the toxic by-products of twentieth century industry and visible piles of trash. Today's wetland restoration projects transform these industrial wastelands into ecologically valued wetlands, seeming to reversing the historical temporality of nineteenth century swampland conversions.

In the last section of this chapter, I examine the production of nature at the three wetlands in Hunters Point, arguing that they represent historically new urban ecologies. Rather than a return or reclamation of nature, I argue that these wetland habitats are technologically complex, industrialized urban spaces – admixtures of old industrial debris and newly introduced synthetic materials, along with their marshy grasses and the daily inundation of the tides. According to one of the interpretative placards that lines the trail at Herons' Head Park, its wetlands are an example of how "people and nature reshape the bay". The LEJ album I flipped through with Sonia showed pictures of volunteers picking up trash and planting native plants to co-produce the park's wetland ecology. I show how co-producing this urban ecology, along with weekend volunteers, were also environmental engineers, hazardous remediation workers, and hazardous waste trucking companies. Focusing on these other forms of labor raises the question of who shapes what kind of nature.

Throughout the chapter, I also explore the relationship between Bayview-Hunters Point residents and these constructed wetlands, and the question of whether these sites represent a form of environmental justice. Through interviews and various "toxic tours" during 2011 and 2012, I saw divergent opinions of Heron's Head, Pier 94, and Yosemite Slough. The wetlands were not universally celebrated or stigmatized by Bayview-Hunters

Point residents, but remain sites charged with different feelings and memories from having lived near the industrialized, toxic waterfront before it was valued by city agencies and the Golden Gate Audubon Society as “nature”. To my mind, these diverging opinions of the wetlands also reveal the complex relationship between the nature projects and the market-driven redevelopment process in Bayview-Hunters Point, which many residents experience as a form of displacement, and connect with a longer history of racism in San Francisco.

Methodologically, this chapter is informed by archival research, interviews, and ethnographic fieldwork conducted mostly between 2011 and 2012. Over the course of those years, I interviewed long-time residents of Bayview-Hunters Point, wetland biologists, staff from the San Francisco Port Authority, the Golden Gate Audubon Society, the San Francisco Department of the Environment, and Literacy for Environmental Justice. I also attended several native plant restoration volunteer days at both Herons Head Park and Pier 94, helping to co-produce their urban ecologies. At a broader theoretical level, this chapter is also concerned with the question of an adequate approach to environmental politics and urban ecologies in a chemically altered planet.

Connecting People with Water

In September 2012, I interviewed Kathleen, with the San Francisco Neighborhood Parks Council (today, renamed the San Francisco Parks Alliance, but I will continue to refer to it as the “Parks Council”). I had written to Kathleen with an interest in hearing more about her work on the Blue-Greenway – a proposed thirteen-mile network of parks and open spaces, connected by a bike lane, and extending from China Basin, near the AT&T ballpark, just south of the city’s financial district, down, to Candlestick State Park, on the southwestern side of the Hunters Point Shipyard. Some of the parks, like Heron’s Head, already exist, while the Parks Council has also proposed adding more green spaces, plus signposts along the thirteen-mile route down Third Street, to guide bikers and indicate points of access to the water. That fall afternoon in 2012, Kathleen and I sat at a concrete picnic table at a new park on Octavia Boulevard, near the Western Addition, a block away from the Parks Council’s offices. The sun shone but a brisk wind lifted the map of the southern waterfront she had brought to show me the bike route and proposed park sites. According to a report by the *Blue Greenway Task Force* (2006), the goal of the project is to “connect San Francisco’s eastern neighborhoods to their waterfront”. As Kathleen talked about the project, she used the word “connectivity” often, to describe the degree to which people could access the waterfront as a recreational space. Areas without connectivity, especially the Hunters Point Shipyard and India Basin – still industrial and privately owned property – were considered “gaps” in the trail.

While the project is motivated by the goal of connecting people with water, for recreational purposes, it also has the effect of connecting Bayview-Hunters Point with a new cluster of urban and economic development around the University of California, San Francisco campus and biotechnology companies at Mission Bay, next to China Basin, and to the city’s financial downtown, via the necklace of small parks and the new bike lane. On a recent visit to Heron’s Head in July, I had seen the new Class 1 (or bi-directional) bike lane down Cargo Way, and thought about how it symbolized the broader

transformation of the industrial neighborhood today. The new bike lane reminded me of a presentation I had attended by the San Francisco Planning and Urban Research Association, or SPUR, in 2008, titled “Imagining Islais Creek”. Today Islais Creek is a thin, constructed channel, adjacent to Pier 94, and in the nineteenth century was the outlet for much of the city’s sewage.

The nighttime SPUR presentation in 2008 was held in a spacious meeting room in San Francisco Port Authority’s offices, at Pier 1 ½. A wall of windows on the south side of the rectangular room looked out at the water and the lights of the Bay Bridge. In 2006, the Port Authority renovated the former bulkhead building, connecting Piers 1 ½, 3, and 5, into offices and restaurants. Pier 1 ½ is adjacent to San Francisco’s popular Ferry Building, itself renovated as offices and a high-end food market in 2003 (Rubin 2011). That evening a large crowd had assembled to hear a landscape architect present her design concept for a park and commercial space at Islais Creek, which she had reimagined as the new “gateway” to Bayview-Hunters Point. Yet her proposed project in Hunters Point and the Port Authority’s offices downtown were linked in other ways as well – as part of the historical remaking of San Francisco’s waterfront since the 1950s, from place of commercial and industrial production to consumption and recreation (Rubin 2011).

*Image 13. Blue Greenway
(San Francisco Parks Alliance)*



The audience at the SPUR presentation seemed composed mostly of young professionals, who I imagined had come from urban planning firms and other city agencies. I also recognized several Bayview-Hunters activists who were involved in environmental and redevelopment politics in the southeast. From the public comments at the end of the presentation, it appeared that the landscape architect's design had gained general approval, until one man spoke up from the back of the room. The man introduced himself as working in the aggregate industry, and he offered a different perspective of Islais Creek. "What's missing from this conversation", he told the crowd, "is that this is an industrial area, and it needs to stay that way. People work here, and our business supports the city too." The man was concerned that recreational, residential and commercial development would displace industrial activities – and working-class jobs – from the southeast. As we had gathered in the Port Authority's offices that night, it appeared as if SPUR's design plans had already gained official approval, and man's voice held a tone as if speaking his truth to power.

Today, when I travel to Heron's Head Park or the wetlands at Pier 94, I pass by a large lot with two-story high piles of sand, gravel, concrete, and other aggregate. I think of the man from the SPUR meeting in 2008 when I see the piles, and I thought of him in July 2012 when I first saw the new Class 1 bike lane – part of the Blue Greenway – now leading to Heron's Head Park. The bike lane makes the wide stretch of Cargo Way narrower, with less room for the diesel trucks carrying cargo to and from the waterfront.

In 2010, the Parks Council received \$175,000 from the EPA's Brownfield Area Wide Plan grant, which they have used to identify small parcels of contaminated and unused land along Third Street and the Blue Greenway route, and to work with property owners to convert them into parks. In its press release announcing the grant award, the Parks Council director wrote, "Since 2003, NPC [Neighborhood Parks Council] has advocated for this 'green' corridor of activity, relaxation, and discovery along the Southeast shore of the city. Today the Blue Greenway gets one crucial step closer to becoming a reality". As Kathleen explained to me that day on at the park on Octavia Boulevard, she works with public agencies like the California Department of Transportation, or Caltrans, as well as private property owners. The Parks Council targets vacant lots are usually too small or awkward in size for commercial or residential development, like sides of the road or parts of hillsides – hence the relative success of the Parks Council in converting the vacant lots into green spaces. As part of the brownfields grant, the Parks Council has also contracted firms to test some of the sites for contamination, and other firms to develop design plans for the new parks. A few months after I first met Kathleen, I attended a presentation of five of these design plans in a meeting room at UCSF's Mission Bay campus. It reminded me of the SPUR event in 2008, full of young professionals and sleek images of industrial sites reimagined as parks.

Before joining the Parks Council, Kathleen worked with Arc Ecology, a long-standing environmental organization in Bayview-Hunters Point, and she was familiar with the concerns Bayview-Hunters Point residents have about pollution and toxic cleanup. I asked her about the proposed park and wetlands habitat on top of the landfills at the shipyard's Parcel E-2, explored in the previous chapter, and she nodded in recognition¹. "I remember when I worked at Arc", she told me,

It was really intense. We were in the middle of the DDA and the EIR [*the Disposition and Development Agreement, between the city of San Francisco and the Navy, and the Environmental Impact Report, required by federal law*] and people were really upset. They had family members that worked at the shipyard, and they had watched their families get sick. People were really invested in getting it cleaned correctly, to the highest level.

As I explored in the previous chapter, some Bayview-Hunters Point residents compare the industrial, toxic southern waterfront – and especially the Navy’s plans to leave toxic waste at Parcel E-2 – with the parks and wetland restoration at Crissy Fields. Crissy Fields is also a former military base, but near the city’s upscale Marina district. Kathleen likewise drew this comparison in explaining to me how the Blue Greenway was motivated by an environmental justice framework – to increase recreational space and “connectivity” to the water for Bayview-Hunters Point residents, just as people living near the Marina had Crissy Fields to enjoy. To emphasize this point, she mentioned that Greenaction for Environmental and Health Justice and Literacy for Environmental Justice were both involved developing Blue Greenway project.

When I interviewed Espanola Jackson over the phone in March 2011, I had asked her how she felt about people eventually living at the shipyard, in Lennar’s new development, and she said to me,

It scares me! I’m worried about people planting things, about the toxics flying around here. I wouldn’t eat anything out of any of those gardens. Most of the area out here is landfill, and the stadium used to be landfill.

What about India Basin, the area to the north of the shipyard? I asked, curious about how she felt about the new development projects there. “India Basin? A lot of it is landfill as well”, she said, and remembered, “it used to be where people dumped their old tires.” To this she had told me, “Don’t go to Heron’s Head Park, it’s poisonous.”

Jackson is a long-time political activist who has also been involved in recent environmental justice campaigns in the southeast, although she doesn’t consider herself as environmentalist. “I care about the safety of people, the health of people”, she told me, in explaining why she didn’t work with environmental organizations. She also spent part of her childhood growing up in public housing on Hunters hill, and has lived in the neighborhood ever since. She would have seen the Port Authority’s construction activities at Islais Creek and India Basin in 1960s and 1970s, and later how the shoreline was abandoned by the Port, and used as dumpsite for garbage and old tires. It’s likely she told her children to stay away from the Pier 98, today’s Heron’s Head Park. As was clear from our conversation, the recent park improvements, including the hazardous remediation work, had not erased her memory of these as toxic spaces. These memories keep many Bayview-Hunters Point residents away from parks along the waterfront, mitigating the Park Council’s attempts at connectivity, as a form of environmental justice.

“An eyesore and a cesspool...”

I had asked Kathleen about the Blue Greenway route, and she drew her finger down the map, pointing out the different parks sites, beginning at the route's north end at Mission Bay, and heading south toward Bayview-Hunters Point. I noticed that she did not begin in Bayview-Hunters Point, but had ended there, and realized that this was how I imagined the Blue Greenway route too. Part of the Blue-Greenway's discourse, which it shares with today's discourse of redevelopment in Bayview-Hunters Point, is of bringing urban amenities – better roads, more capital, new parks, for example – to the neighborhood. As we peered down on shoreline map together, Kathleen tapped her finger at Islais Creek. “There are a bunch of parks here,” she told me, and explained how the city, working with the Port Authority, the nonprofit, Friends of Islais Creek, and private developers had recently built several small parks: Islais Creek Landing, Tulare Park, the Islais Creek Promenade, and a boat launch for kayaks. Islais Creek is an ecologically significant site, still the outlet for the city's largest watershed, which begins at the height of Twin Peaks and travels, mostly underground, to today's thin, constructed channel. In the nineteenth century, it had been known as Islais Creek basin, a much larger body of water, and was surrounded by marshlands that swelled with bay water during the spring tides (Dow 1973). As part of the Bernal land grant, in the early nineteenth century the area was known as *Rincon de las Salinas*: the “corner” or “district of salt marshes” (Olmstead 1981).

Although today Islais Creek is valued as an ecological space, recreational site, and economic opportunity, to the city's Chamber of Commerce in 1925, Islais Creek was an economic and environmental wasteland: “an eyesore and a cesspool,” which had “prevented the development not only of the territory within the district but that of the territory that surrounds it” (quoted in Dow 1973: 161). Far from a recreational space, the area was seen as suitable for a dump: the city's meatpacking and related industries, or its Butchertown district, had located next to the creek, and dumped their waste products into its tidal waters (Iglar 2001, Walker 2004). By the late nineteenth century, Islais Creek was also the outlet for many of the city's sewers, although the area did not have a proper sewage system itself. News articles from the late nineteenth century report how watery waste flowed onto residential streets – mostly working class housing built in walking distance from the area's many factories, shipyards, and sugar refineries. “Sanitary conditions along and around Islais Creek are bad,” reported the *San Francisco Call* on February 12, 1896, adding that the “sewers find outlets along the principal street and run entirely at large”.

In October 16, 1897, the *Call* ran a long article on Islais Creek, titled “Death is Hidden in the Swamp”, describing the conditions in the area,

“...it is a great waste of fetid sewage, covered with rank green vegetation. The swamp at this season of the year is covered with from six to eight feet of foul water. This is mainly supplied by the Islais Creek, which is the outlet for a number of sewers. Upon the banks of the swamp are tanneries, soap works, chemical factories and dairies. The refuse from these runs directly into the swamp. Butchertown also contributes its foul quota to the health-destroying pool, and earlier in the summer, it is said, the stench arising from the stagnant stretch of sewage was disgusting.

At stake in this “hotbed of disease”, according to the article, is that the whole population of San Francisco might become ill, from eating food that had been grown along the creek. The article blamed Italian vegetable peddlers and “Chinamen” for picking watercress in Islais Creek and selling it at San Francisco food markets. The *Call* writes, “this vegetation, nurtured where death lies hidden in every drop of water, is sold in the markets and finds its way to the tables of rich and poor alike”.

In the late nineteenth century, doctors and sanitarians still identified decaying organic matter – thought to produce bad airs, or miasmas – as a dominant cause of disease. By the twentieth century, bacteriology and the discovery of germs had displaced the concept of miasma, but in the 1890s in San Francisco, health experts applied both theories to understand disease (Craddock 1998). Linda Nash (2006), in her environmental history of health and disease in California’s San Joaquin Valley, notes that health experts in the nineteenth century identified miasma not as disease itself, but as quality of certain environments that produced diseases. Swamps, like Islais Creek, were particularly unhealthy environments. As Nash writes, “[t]here was widespread agreement...that miasmatic diseases were most typically associated with low-lying, swampy places, as well as with fogs and bad smells” (67). In San Francisco, it was also not only sewage, but the marshes themselves that were seen as unhealthy and dangerous. According to two San Francisco physicians, writing in a medical journal in 1872, water “polluted by fecal matter, [or] vegetable organic matter when derived by marshes, is injurious” (quoted in Craddock 1998, 97). In the 1870s, the area with the largest amount of marshlands in the city would have been around Islais Creek basin.

Yet miasmas were not simply attributes of particular environments, but also of particular people, as is evidenced by the perpetrators identified by the *Call* in 1897 for infecting the city’s population with the deathly water. As Linda Nash also shows, sanitarians in California’s agricultural towns in the late nineteenth century often identified Chinese neighborhoods as the source of “miasmatic effluvia”. In San Francisco, after the 1906 earthquake and its subsequent fire, large amounts of debris were dumped in the tidelands at Islais Creek. At the same time, city elites proposed relocating Chinatown to Hunters Point, just south of Islais Creek. According to the logic of white, urban elites in the late nineteenth century, the swamplands were ideal place for noxious factories, sewage, construction rubble, and unwanted populations.

Draining the Nation’s Swamps

In its attitude toward Islais Creek, the San Francisco Chamber of Commerce was not unique, but part of a longer history and structure of feeling toward swamps, tule bogs, marshes, and tidelands – what are today generally grouped together under the term “wetlands”. As a scientific and legal category in the U.S., the term “wetlands” was not a meaningful way of conceptualizing these watery environments until a U.S. Department of Fish and Wildlife in 1956, conducted in response to the declining populations of waterfowl and of fish in commercial fisheries. The decline of fisheries was the effect of a long and expansive history of agricultural and urban development that had converted much of North America’s swamps into solid land (Vileisis 1997, Robertson 2000). In contrast to the recognized ecological value of wetlands today, in the nineteenth century,

swamps were seen by Anglo American settlers as wastelands, and represented the opposite of modernity, as a primordial, often racialized landscape. The process of colonialization in U.S. is also a history of draining, filling and otherwise converting these watery spaces into solid ground, and in the processing territorializing the U.S. nation-state – making that state more solid itself. “To understand American consciousness in this period,” Leo Marx writes in *The Machine in the Garden* (2000 [1964]), the key image, as Tocqueville notes, is the ‘march’ of the nation across the wilds, ‘draining swamps, turning the course of rivers, peopling solitudes, and subduing nature’” (194). Writes George Perkins Marsh, in 1864,

The extension of agricultural and pastoral industry involves an enlargement of the sphere of man’s domain... Lands won from the woods must be both drained and irrigated; river banks and maritime coasts must be secured by means of artificial bulwarks against inundation by inland and by ocean floods... Thus man is compelled to extend over the unstable waters the empire he had already founded upon the solid land.

Since the 1700s, nearly 50 percent of wetlands in the continental US have been converted to solid land, at first for agricultural uses, and in the twentieth century, more often for urban development (Boyer and Polansky 2004). In agricultural areas like California and the Midwest, the amount wetlands converted to solid ground is closer to 80 or 90 percent (Vilesis 1997). Ann Vilesis (1997) calls this historical process the “privatization of the nation’s swamps”, because of the relationship between this process and the commodification of nature. According to the San Francisco Bay Area Wetlands Ecosystem Goals Report (1999), 95 percent of “baylands” (which the *Goals Project* defines as “wetlands and other ecologically sensitive areas near the bay”) have been developed or degraded since 1800 (Goals Project 1999).

Draining wetlands to produce arable fields can be considered an example of the production of “second nature” as theorized by Neil Smith (1984). Writing about the relationship between capitalism and nature, Smith distinguishes between “first” and “second” nature, which he associates with production for use values (first nature) and production for exchange values (second nature). Smith argues that at the historical moment when exchange value comes to dominant the mode of production, nature is also produced in historically new ways. Jesse Goldstein (2013) develops Smith’s thesis by arguing that the material production of nature, as exchange value, depends on a prior discursive production of natural places as wasted space, or more specifically, as a “landscape of wasted potential”, which he calls *terra economica*. Goldstein shows the discursive shift from nature as “wastes” to economically wasted nature empirically in seventeenth century England, where improvers lumped together “common wastes,” including a diversity of ecological spaces - meadows, fields, forests, as well as fens, moors, and marshes - into the new category of “wasted commons,” defined as economically inefficient, as “wasted” in the sense of not producing profit.²

Yet the history of swampland conversions shows this process to be about much more than exchange value, as Smith and Goldstein might argue. The concept of “second nature” and the category of exchange value fail to capture the ways that swampland conversions also articulated with processes of race and nation. In the 1850s, U.S. swamps

were not simply “sterile” and economically unproductive, they were chaotic, disorderly, miasmatic, threatening places, often associated with Native Americans and contrasted to Anglo sensibilities (Nash 2006, Vileisis 1997). In the late seventeenth century, for example, a merchant in Boston relied on negative associations with swamps to naturalize perceived racial differences between Native Americans and Anglo-Europeans, writing that, “[t]his Pocassit Swamp... as well as all other Swamps, is so soft Ground that an Englishman can neither go nor stand thereone, and yet these bloody Savages will run along over it, holding their guns and shooting too” (quoted in Vileisis 1997, 35).

In nineteenth century California, the “reclamation” of its tidelands and tule bogs was linked to the production of a white, Anglo sense of self in the frontier West, where racial boundaries were, like the hydrology and physical form of wetland themselves, shifting and unstable (Almauer 1994, c.f. McClean 2011). Prior to the 1860s, one-third of the San Joaquin and Delta Valleys, or four million acres, was swampland, and the region flooded annually (Chan 1986). In California, swamps were not simply economically unproductive, impossible to plough and seed, they were also associated with the tropics and other colonial spaces thought to threaten the Anglo-European racial body (Nash 2006). One settler in California’s San Joaquin Valley at the time characterized malaria in that region as “an offspring of the tropics,” which he associated with immigrants from South America, rather than seeing the fever as a condition endemic to California (at the time, imagined as a “healthful” place) (Nash 2006). To address these seemingly out-of-place diseases, the state employed a tropical disease specialist in its health department (Nash 2006). It also encouraged the planting of eucalyptus trees across California, a practice used by Europeans in its colonies in Algeria, southern Africa, and Cuba. The eucalyptus was said to absorb excess water and humidity, and its strong smell to have prophylactic effects. Because of these qualities, physicians thought the trees to have health benefits, transforming swamplands and other miasmatic, “inhospitable districts” (Nash 2006).

In 1849, a year after the Gold Rush and the annexation of California, the U.S. Congress adopted the first Swampland and Overflowed Lands Act. The bill allowed flood-prone states in the lower Mississippi River basin, beginning with Louisiana and Missouri, to assume ownership of federally held swamplands. These states could then sell those parcels of swampland to private property owners, to generate the money necessary for drainage and building levees, and encourage settlement through agriculture on the newly solid ground. In the following year, this land grant was extended to fifteen other states, including California (Vileisis 1997). The 1849 bill defined a *swamp* as “land, whether open or timbered, above tide water that is too wet for cultivation”. *Overflowed land* according to U.S. Congress was “bottom land along streams that can not be cultivated safely because of overflow” (Tiner 1998). In other words, the very definition of swamps was developed was in relation to their agricultural potential³.

The Swamp Lands Acts in the mid-1850s accelerated the emergence of wetland drainage science and technology in the U.S., which had been used in Europe and in its colonies by the 1830s, but not practiced widely in the U.S. until the 1860s (Vileisis 1997, Tiner 1998). By the late nineteenth century in the U.S., soil drainage science was part of the curriculum at land grant colleges, tile drains produced on an industrial scale, and ditch-digging mechanized (Tiner 1998). Drainage districts were established across the country through which local landowners organized to convert swamplands to arable fields. Ann

Vilesis (1997) estimates that the Swamp Land Acts facilitated the transfer of 60 million acres to private ownership for the purposes of agricultural production.

The conversion of swamps and overflow lands in California's agricultural regions beginning in the 1860s depended on a racialized labor force – primarily on Chinese workers who provided the largest source of labor in the early efforts to dredge and make arable the Central Valley and Delta Valley regions (Chu 1970, Saxton 1975, Chan 1986). Organized land reclamation districts in California in the late 1860s had coincided with changes in mining technology and the completion of the transcontinental railroad, both which sent many low-paid Chinese workers from the mines into agricultural labor. Before 1882, when Congress passed the Chinese Exclusion Act, seven-eighths of the agricultural labor force in the Sacramento Delta region was Chinese men (Chan 1986). “Wheelbarrow brigades” as the Chinese workers were referred to by the landowners and reclamation companies which hired them, labored under extremely hazardous conditions, suffering and often succumbing to malaria, pneumonia, and the physical stress of the work. Later these workers were replaced by the clamshell dredge, a mechanized barge introduced in 1879 (Chan 1986). The production of the California's arable “nature” thus depended on the labor of those who could not even own the land themselves (c.f. Williams 1980).

Improving Islais Creek

In the summer of 1846, the U.S. Navy raised the nation-state's flag over the little town of Yerba Buena – the Spanish-Mexican name for what became known as San Francisco. It was the start of the Mexican-American war, at the end of which California was incorporated into the union. Yerba Buena Cove was a shallow body of water, sloping gradually into the depths of the San Francisco Bay, making it difficult to access the growing number of ships arriving from across the Pacific and around the continent. Low tides exposed mudflats on the north rim of the cove, and the south side of the shore was sandy (Dow 1973). Only a few years later, news of gold discovered at Sutter's mill brought droves of people and capital to San Francisco, and the city grew at a dramatic pace throughout the 1850s (Scott 1985, Brechin 2006, Ferguson 2012).

Of the production of *terra economica*, Jesse Goldstein (2013) writes that “land surveys were central to this process,” in part through “determining... the potential market value of the lands, once enclosed” (11). In 1847, the alcalde of San Francisco, in anticipation of the outcome of the Mexican-American war and a burst of urban and economic growth, ordered a survey of Yerba Buena Cove, and appealed to the military governor of California to sell the newly produced “water lots” to private investors. The alcalde hired the surveyor Jasper O'Farrell in July 1847 to plat the beach and water lots on paper, and the subsequent sale of these parcels raised revenue for the growing city (Scott 1985). O'Farrell's maps produced the watery areas as abstract space – as discrete, sellable parcels of real estate. The areas within his surveyed space (and within subsequent water and tideland surveys) became known as “submerged land”, what Goldstein (2013) might call *terra economica*, for its potential, though not-yet realized (and still not-yet solid), value as urban land. Speculative real estate interests recognized the potential value of the water lots in Yerba Buena Cove, and those lots fetched a higher price than some of the landed property along Market Street in the 1850s (Scott 1985).

In this way, much of the tidelands of the new city were converted to solid ground: first produced as discrete parcels of potential land and private property on survey maps, then sold off to real estate speculators, who hired workers to physically convert the water lots into solid ground. By the mid-1850s, the former trading post had become a well-ordered grid of city-streets, with buildings rising from former sand dunes funded by mining capital which traveled down the Sacramento River, from the Sierra Nevada lodes (Brechin 2006). The city of San Francisco expanded uphill toward the east and the Pacific Ocean, and southwards, toward Islais Creek Basin. Yerba Buena Cove was progressively filled during the early half of the 1850s, first with piers and wharves used to reach ships out in the deeper waters, and eventually replaced by streets. Cross-connections between wharves were built on piles, and the enclosed areas were filled in with sand, building rubble, abandoned ships, and other debris (Lewis 1966, Dow 1973). As James Parker, the editor of the *San Francisco Directory* observed in 1852, “[d]uring the summer the city began to stretch into the bay” (quoted in Dow 1973, 43).

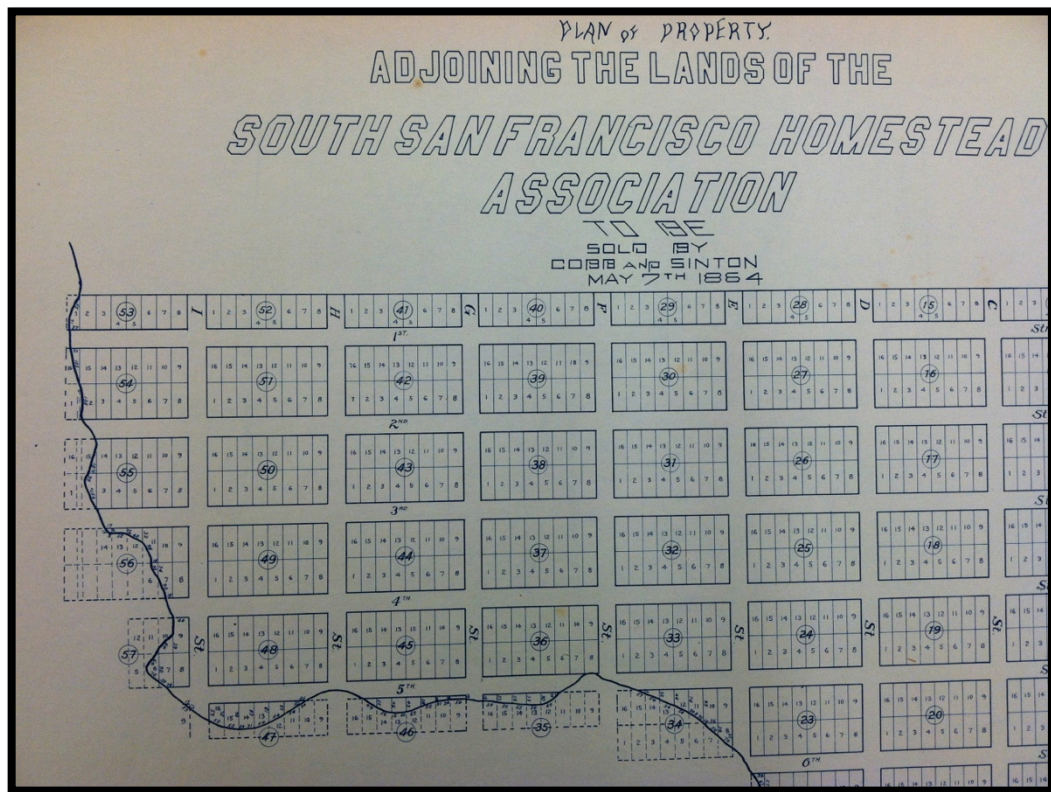


Image 14. South San Francisco Homestead Association water lots, 1864 (UC Berkeley Earth Sciences Map Library).

A familiar sight at the time would have been the “steam paddy,” a “diminutive locomotive that shuttled on temporary tracks through the downtown streets, drawing carloads of sand from the near-by hills to be dumped in the cove” (Lewis 1966: 86). The “steam paddy” and its other term, the “vaporific patrick,” mostly likely referred to Irish workers – in this historical moment, a racialized group – who these new land-filling

transferred to the steam cars and conveyed to the Islais Creek district, where it will be dumped on the marsh lands” (*San Francisco Call*, April 26, 1906).

Beginning in the early twentieth century, the San Francisco Chamber of Commerce, the city’s Merchants Exchange and its Ship Owner’s Association sought to develop Islais Creek as an inland harbor. Because of the high cost of filling the large area, and the lack of available capital to do so, this project did not materialize until 1925, with the formation of the Islais Creek Reclamation District (Dow 1973). Since the 1850s, reclamation districts across the country had functioned as cooperative organizations among private property owners for the purposes of transforming swamps into arable land for agricultural development (Vileisis 1997). The property owners around Islais Creek basin, which included large corporations like the Southern Pacific Railroad Company, the Western Pacific Railroad Company, the Hind Rolph Investment Company, and the Winchester Estate, organized in the 1920s “reclaim” the tidelands – “an eyesore and a cesspool”, according to the Chamber of Commerce in 1925 – for use as industrial sites and shipping terminals (Dow 1973). According to Gerald Dow (1973), “[t]he Islais Creek Reclamation District must be considered one of the more ambitious undertakings requiring bay fill to be accomplished along San Francisco’s waterfront up to that time. Its impact upon the Islais Creek region as a whole was to fit it into San Francisco’s land use pattern as a location for industry” (168).

From Industrial Wasteland to Wetland

During World War II, the greatest shoreline developments in San Francisco’s southeast took place at the Hunters Point Shipyard. Yet this expansion in ship-building capacity and the military industrialization of the southeast only declined in the postwar years, as a consequence of broad changes in cargo-handling and ship transportation technologies, which led to a loss of maritime industry in San Francisco. At the start of the war, in 1942, San Francisco’s port system as a whole still accounted for the largest share of general cargo passing through the Bay Area, at 63.2 percent. By 1957, a year after the invention of the container box, this share had declined to 26.7 percent (Ebasco Services, Inc. 1959). Overall in the Bay Area, this postwar decline was due to the loss of cargo passing through inland waterways, as land-based highways supplanted shipping lines and trucks offered cheaper and more flexible ways of moving cargo (Rubin 2011). For San Francisco in particular, the decline of its ports was also due to regional competition, especially with Port of Oakland. In the postwar decades, changes in shipping technology required larger ports that could accommodate container boxes and intermodal transportation. San Francisco’s “finger piers” along its northern and central waterfronts, and the density of urban development in those areas, restricted the Port’s options in accommodating these “revolutions in value” (Rubin 2011).

Beginning in the late 1950s and into the 1960s, the Port Authority commissioned a number of surveys and reports on its future economic possibilities. Most generally, these reports project a continued downward trend in cargo passing through San Francisco, and recommend leasing out the northern and central waterfronts for commercial and residential uses. In the 1950s and 60s, the reports remain optimistic that the city might retain some maritime commerce by relocating its activities to the southeast, and

recommend constructing large, modern piers along the southern waterfront, north of the Hunters Point Shipyard. For example, a survey by a consulting agency published in 1959 identifies changes in cargo-handling as the principal reason for the steep decline in maritime industry in the city. The agency anticipates that many of the thin finger piers north of the Bay Bridge – built in the nineteenth century to accommodate a different kind of ship and different shipping technologies – would lose their maritime function, and advises the Port Authority to lease this property to investors as a way of accumulating rent in the absence of maritime commerce. The development consultants envision office buildings and apartments along northern section of the waterfront, complementing office-building boom in the city’s financial district at the time, and the relocation of San Francisco’s wholesale food market from the downtown area to the Bayview. The consultants also recommend constructing larger piers in the southern waterfront with modern technologies to handle containers, near Islais Creek. Urban development around Islais Creek was sparse, and the Port could more easily acquire and develop large amounts of land needed for new backlots, warehouses, and container cranes (Ebasco Services, 1959).

The decline of San Francisco’s ports, worsened in the 1960s. During this decade, the Port Authority followed the consulting companies recommendations, and began leasing out parts of the northern and central waterfront for commercial and residential uses (Rubin 2011). These new uses of the waterfront reflected shifts in San Francisco’s political economy. Between 1958 and 1972, manufacturing jobs in the city declined by 25 percent, translating into a loss of 17,000 jobs in that sector, even as overall employment in the city grew by 38 percent. In the finance, insurance, and real estate sectors, however, 23,000 new jobs were created, and the service sector grew by 35,000 jobs – in both cases representing an increase of over 50 percent (Fainstein 1984). This dramatic shift in work manifested spatially in an explosive growth of office buildings in the financial district. In twenty years, from 1959 to 1979, fifty-two high-rise buildings were constructed in downtown San Francisco (Rubin 2011).

Yet throughout the 1960s and into the mid-1970s, the Port Authority still imagined a revival of maritime traffic in the city, and located this revival near Islais Creek (Ebasco Services 1959, Arthur D. Little, 1966, Rubin 2011). The land around Islais Creek was already zoned for heavy industry, and two newly built interstate freeways passed nearby. In anticipation of the new concentration of shipping in the area, the Port Authority began to fill out more land around Islais Creek and India Basin, where it hope to build modern piers equipped with the technology and infrastructure that could accommodate the new container ships. To build these new piers, including Piers 94 and 98, the Port Authority contracted a local dump operator who was looking for a place to dispose of the large volumes of waste generated by construction activity downtown (Dow 1973). Islais Creek was thus built out with building debris in 1906, after the San Francisco earthquake, and again, in the 1960s, with waste generated by a different set of landscape changes in the downtown area.

A series of reports by a second development consultant agency in the 1960s also recommends reorienting the Port’s maritime commerce along the southern waterfront. It echoes the 1959 report, advising the Port to take advantage of rents along the northern and central waterfronts, writing, “[i]n the long run this area can be tied into the central business district and the aesthetic qualities of the area improved by taking better advantage

of the water view and providing more open space” (Arthur D. Little 1966, 7). These areas, near the city’s financial center, seemed ideal for recreational and commercial development, just as parts of the southern waterfront today might be described in similar ways. In the 1960s however, the southern waterfront was still seen as ideal for maritime industry. Another report by the same firm, in 1967, titled “San Francisco’s Maritime Future”, details a development plan for a new container terminal at India Basin, which is adjacent to Islais Creek. A key component of this proposed plan was the South Bay Bridge Crossing, a proposed bridge that would connect other freeways in Hunters Point with the Port of Oakland and the freeways running along the East Bay (Arthur Little Inc. 1967).

The construction of a modern container terminal at Islais Creek and India Basin, and the plans for a South Bay Bridge Crossing, never materialized. Instead, the bridge’s future onramp remained a pile of construction debris, heading nowhere. By the 1980s, Pier 98 had become a junkyard, filled with used appliances and car parts, and tall piles of trash. In the 1970s, junkyards and vacant lots began to appear throughout Hunters Point, especially along the waterfront at Islais Creek and India Basin. Across the southeast, factories were shutting down, leaving large tracts of vacant industrial land – the wastelands of industrial capitalism (Arthur D. Little 1975). Illegally dumped industrial, commercial, and household debris appeared at both Pier 98 and Pier 94, while salvage and auto-wrecking yards emerged all along stretch of the southern waterfront. This visible wasting of the Hunters Point waterfront was apparent to residents living in public housing units uphill from the piers, power plant and the shipyard, as it was to Espanola Jackson. Many residents like Jackson still consider the area toxic, and refuse to visit Heron’s Head Park.

In the mid 1990s, Bay Area bird watchers began to notice that Pier 98 had acquired a new use value: tidal flows had, over time, formed a marshy habitat at the edges of the industrial junkyard, attracting waterfowl and other coastal marine animals. These sightings encouraged the Golden Gate Audubon Society to approach the San Francisco Port Authority with the idea of a wetland restoration project. The idea resonated with the Port – at the time engaged in a legal battle with the San Francisco Bay Conservation and Development Commission (BCDC) over the legality of landfill at Pier 98. Without continued maintenance, the unfinished pier had slumped into the water, potentially violating BCDC’s policies on landfill in the bay (Carol Bach, pers. comm., 2012). The wetland restoration project offered a solution to this problem. With funding from a number of city agencies and environmental nonprofits, in 1998 the Port increased the total acreage of the tidal salt marsh, cleared away trash, brought in native plants, and built trails for people. As part of this process, it also contracted with environmental consulting firms working on contaminated industrial properties in other parts of Hunters Point to conduct soil sampling and health risk assessments, remove hazardous waste, and engineer new tidal channels. Five thousand cubic yards of toxic dirt were relocated from Pier 98 to Waste Management’s hazardous waste dump in California’s Central Valley, near the privately-owned Latino farm-working community of Kettleman City (Carol Bach, pers. comm., 2012).

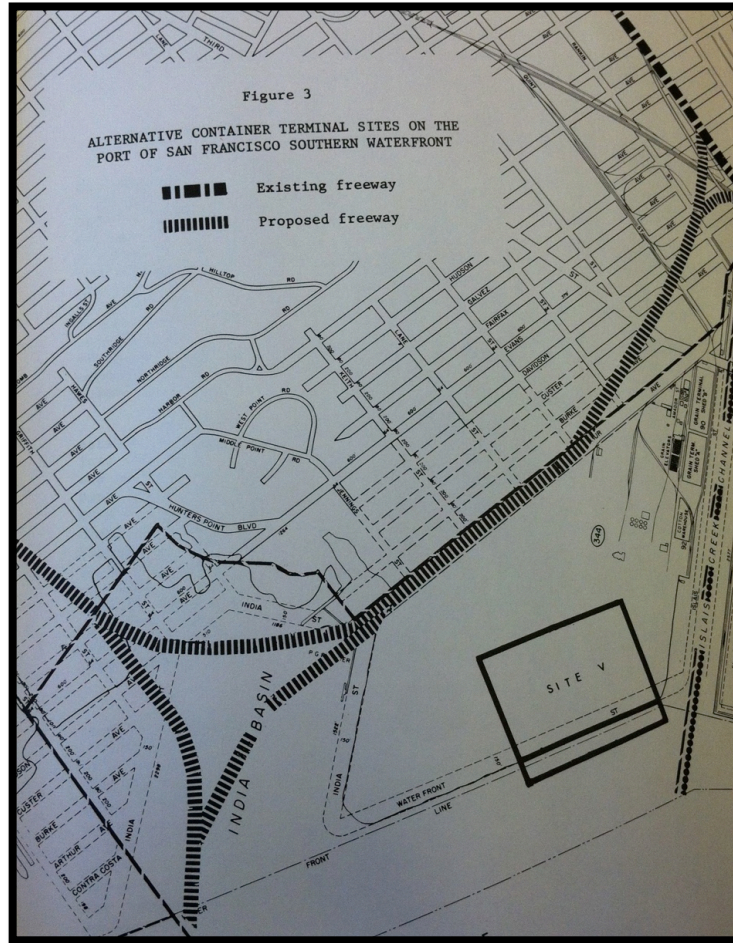


Image 16. Proposed South Bay Bridge Crossing (Arthur D. Little 1967).

In October 2012, I met Monica, with Golden Gate Audubon Society, at her offices at the Ecology Center, in Berkeley. I had contacted Monica because I was interested in the Audubon Society’s work in managing the wetlands at Pier 94. In a phone interview a few weeks before with Carol Bach, the Environmental and Regulatory Affairs Manager at the San Francisco Port Authority, I learned that in the 1990s, a crescent shaped portion of landfill at the unfinished Pier 94 had sunk into the bay, as with Pier 98, allowing the tides to move sediments onto the fill. Over the phone, Bach had described to me cone-shaped piles of trash at Pier 94. “There was a lot of illegal dumping”, she explained, “concrete and asphalt waste mostly - almost as if trucks had backed into the area and dumped their waste”. The Audubon Society had adopted Pier 94 as its own project, funding its construction and running volunteer habitat restoration programs there, and Bach suggested I get in touch with Monica.

At the Audubon Society’s offices in Berkeley, I sat in front of Monica’s desk, and she angled her computer in my direction so I could see the screen. I had asked her what Pier 94 looked like before it became a wetland. “Actually, I made a power point presentation on this”, she said, and she showed had me her slides on her computer. Monica’s power point presentation was titled “A Restoration Success Story”, and it bore similarities with LEJ’s photo album in that it showed pictures of people picking up trash,

communicating a story of grassroots organizers and volunteers as environmental stewards. In other words, the labor of making nature was presented as a volunteer and community-driven process, rather than profit-generating and hazardous waste remediation work or bureaucratic labor, which were also central to the wetland construction project.

“What happened before I became involved”, Monica told me, “is that other members of the Audubon Society had noticed that birds would use that space to feed and nest. Birders will go to where the birds are! It was in really bad shape though - there was all this unauthorized landfill. The port had filled in the wetlands at first, but after World War II it took a downturn”. Monica had talked to people in Bayview-Hunters Point, and they described to her how department stores would go out to Pier 94 and dump excess merchandise there. I noticed that, unlike Carol Bach, Monica’s description of the wasted piers had included items like clothes and commercial waste, but not toxic materials. One of her slides show people picking up trash and non-native plants, with the caption, “removing debris and invasives”, which I thought reflected the interests of the audience at Audubon Society events.

In defining the sociality of “access”, the Audubon Society had privileged birds (and, by extension, birders – or maybe it is vice versa). The Audubon Society had declined the Neighborhood Parks Council’s invitation to incorporate Pier 94 as a site along the Blue Greenway, “as a conscious decision”, Monica told me. “In envisioning the site, we wanted something that was more for birds and wildlife than people”. Still, people would be encouraged to “come and lend a hand”, she said, referring to the volunteer habitat restoration days the Audubon Society runs at Pier 94 on the weekends, where volunteers and Audubon Society staffers continue to co-produce nature. Later, she explained that in the first years of the park, the Audubon Society had problems with some people driving cars on the newly sensitive ecological site – reflecting older uses of the waterfront – and they had actually tried to restrict access to the wetlands, so that its (new) environment could flourish.

Carol, with the Port Authority, had sent me the “subsurface investigation report” for the Pier 94 wetlands project, which was prepared for the Port Authority by Tetra Tech Inc., one of the Navy’s primary hazardous remediation contractors at the Hunters Point Shipyard. The night before meeting Monica, I had read through Tetra Tech’s report, describing its tests for various hazardous metals and chemicals at Pier 94. I knew that the area had contained lead, methane, petroleum, and fifteen different volatile organic compounds, but that Tetra Tech had determined the concentrations of all these substances were below established risk levels, with the exception of lead. The report also noted there had been creosote-soaked timber (common at piers), concrete rubble, tires and other automobile parts in the site. I was curious how Monica felt about the presence of hazardous substances, especially because she helped physically manage the site, with her body potentially in contact with hazardous fill and other wastes. She told me that she wasn’t concerned about waste, because the scientific evaluations had shown “it’s just landfill- rubble, concrete, rebar, parts of furniture, clothing, but no oil drums or anything”. The Audubon Society did not have the funds for a complete toxicological analysis, but Monica did not feel there was anything significantly dangerous about the site. She added, “the wetlands actually improve the water as it flows into the bay.”

In saying this, Monica referred to the capacity of wetland to filter sediments, earning the former “evils” the term “nature’s kidneys”. According to the *San Francisco*

Baylands Ecosystem Goals Report (1999), “restoring large amounts of tidal marsh would improve the Bay’s natural filtering system and enhance water quality, increase primary productivity of the aquatic ecosystem, and reduce the need for flood control and channel dredging”. The *Baylands Ecosystem Goals Report* ought to be understood within a history of increasing recognition and state regulation of wetlands in the second half of the twentieth century. Today the value of wetlands is also quantified, or given an exchange value. For example, the *Goals Report* also notes that the economic value of wetlands in California is between \$6.3 billion and \$22.9 billion (see Morgan Robertson [2006] on the notion of wetlands as performing “ecosystem services”). In the course of researching this chapter, I heard wetlands called as “nature’s kidneys”, referring their capacity to filter sediments which, in the context of industrial areas, has acquired new meanings. In Monica’s case, this was in response to my curiosity at how an industrial space could be redeveloped as a wetland – the idea being that the wetland itself actually do some of the hazardous remediation work themselves.

In August 2012, I met Carla, a biologist with the State Water Resources Board at her offices in downtown Oakland. Before working for the Water Board, Carla had worked with the private firm, WRA Environmental Consultants, which had developed plans for the Yosemite Slough wetland restoration project, south of the Hunters Point Shipyard. I asked Carla whether she was concerned about toxic waste mixed up with the new wetland habitat, since the groundwater at the shipyard and at Yosemite Slough was polluted. She had answered that “a big part wetlands play in nature is to clean and filter water, so it’s actually a really good use of them to be near somewhat contaminated areas, because they can filter things out.” I had pressed Carla on this point, asking if there were particular kinds of contaminants that can’t be filtered naturally, and she admitted, “I don’t think anyone knows the answer to that.” Still, the fact that wetlands as industrial waste removers had been her first response to my question told me something about the still powerful idea of nature as purity – in Carla’s framing the “wetlands” were separate from the industrial waste, in the same place. In this chapter, I suggest that industrial waste is part of, rather than separate from, the historically and materially new wetlands in Hunters Point.

I also asked Carla whether the remediation workers at Yosemite Slough were at risk, and she answered that the workers have Hazmat certification and that the company has a health and safety plan for the project. At home, I read the “Environmental and Safety Plan” for the Yosemite Slough Wetland Restoration Project, prepared by Acumen Industrial Services Hygiene, for Northgate Environmental Management, which are both environmental services firms in the Bay Area⁴. The safety plan lists sixteen hazardous metals and twenty-six different types of volatile and semi-volatile organic compounds in the soil at Yosemite Slough. The construction of the wetlands habitat was anticipated to require the excavation of over 230,000 cubic yards of landfill, so as to reduce chemical concentrations in the wetland cover soil. The safety plan also specifies that workers should have forty hours of hazardous waste and emergency response training, and should wear rubber gloves, Tyvek coveralls, and chemical splash goggles. Air monitors should be located around the site to measure levels of hydrocarbons and combustible gas produced in the hazardous waste remediation/wetland construction project. Respirators would be provided in case exposures exceeded Cal-OSHA Permissible Exposure Levels. Air monitors would also be placed in nearby residential areas, including an elementary school

and the Alice Griffith Public Housing units, to calculate dust emissions that potentially migrate off-site.

In the remainder of this chapter I explore other forms of habitat restoration work at Heron's Head Park and Pier 94, where I helped co-produce nature with other weekend volunteers in the fall of 2012. However, in future research, I hope to interview Hazmat workers and perhaps attend a training certification course myself. For the time being, I offer this description of work and its safety regulations as part of the co-production of nature in Hunters Point today, along with picking up "debris and invasives". Focusing on these forms of labor raise questions about who produces today's valued wetland sites, to whom the wetlands are of value, and what forms of value (e.g. ecological and/or exchange value) the wetlands represent.

Habitat Restoration as Environmental Justice

While San Francisco's shipping industry relocated to the Port of Oakland and to other countries in the Pacific Ocean, Hunters Point residents were less mobile. In October 2012, I joined a guided tour of the Eco-Center and Heron's Head Park, led by Candace, a former staff member of LEJ who grew up in Hunters Point. Only weeks before, the Port Authority had cut its funding to LEJ, which ran the Eco-Center since the early 2000s. That day, Candace came to Heron's Head to show a San Francisco City college professor, Jodi, and her environmental studies class how to give a toxic tour of the Eco-Center and the park. In the absence of LEJ, Jodi had stepped in to help manage the building.

I met Jodi and some of her students at Heron's Head few weeks before the tour. They had come to the Eco-Center that day to monitor its wastewater system. On the south-facing side of the Eco-Center is an indoor constructed wetlands habitat, encased in a series of large glass bulbous containers, and intended as a teaching tool – to educate visitors about how the wetlands work to filter waste and purify water. That day, one of Jodi's students had explained the system to me, and she showed me how she tested the water to maintain the habitat for the marshy vegetation and the little fishes and crabs that lives in the glass casings. The glass encased wetland system empty into opaque, light blue metal cylinders – which also assist in the filtering processes in ways we could not see. I asked whether the wastewater from the building was actually filtered through this teaching exhibit, wondering if the constructed wetlands really did the work of filtering human waste. The student had told me that the indoor wetland was supposed to help with this process, but it would also be filtered through the blue cylinders. The whole process wasn't working at the moment – in the context of the Port Authority having just severed its relationship with LEJ, the management of the Eco-Center was left to the volunteer labor of Jodi and her class. The upkeep of the indoor constructed wetlands habitat required more technical labor, than Jodi's class could offer at the time.

Our "toxic tour" with Candace a few weeks later began inside the Eco-Center, where she stood near a blackboard. "What is environmental justice?" Candace asked the group of college students. Together, we came up with a number of definitions, and she wrote them on the blackboard. She also offered a few definitions herself, including "habitat restoration". Candace drew a circle around these words, indicating that the marshland we could see outside the Eco-Center's windows that day was charged with

political significance. At the same time, not all Bayview-Hunters Point residents agree with this interpretation of Heron's Head Park. That morning, Candace had arrived at the park a few minutes late, coming straight from a meeting with a long-time Bayview-Hunters Point environmental health activist, Karen Pierce, who also sits on the Southern Waterfront Advisory Committee, and had spoken at the Parcel E-2 meeting I describe at the end of the previous chapter. They had discussed the future of the Eco-Center, in the absence of LEJ's management, and this had brought their conversation to the question of why people in the Bayview-Hunters Point community tended to stay away from the park. As Candace recollected to the college students, "as a LEJ staffer, I used to think – this is such an amazing space, why aren't people more involved out here?" Over time she realized that "to understand this, you have to understand the history of the place". In part through her conversations with Karen Pierce, Candace began to understand "why people are so mistrustful of the Port, and of science." On the Port Authority's website for Heron's Head, there is a link to a health risk assessment, conducted by Geomatrix Consultants⁵, which explains that the park is not hazardous, at least from the environmental engineering firm's risk-based toxicological framework. The Port also includes a link to a one-page summary of the risk assessment, which is its attempt to communicate Geomatrix Consultants' technical language and allay resident's fears that the space is still toxic. Monica, with the Audubon Society, seemed to have no problem trusting the health risk assessment for Pier 94, but she knew the space through her work with the Audubon Society, not from the experience of living near the debris-filled waterfront.

After the exercise at the blackboard, Candace led the tour group outside. We stood at the entrance to the Eco-Center, facing northeast, toward several large container cranes, an abandoned grain silo, the power's plant's buildings (now in disassembly), and in the distance, the downtown skyline. "Take a 360 view of this space," Candace said, asking us to situate Heron's Head Park within its urban milieu. "What do you see?" A few students pointed to the large pier in front of us, with its football field-size warehouse and stacks of cargo containers. "This is the city's recycling center," she said, adding that diesel trucks bring loads of recyclable objects to the pier each day, where they are sorted and shipped abroad. "The port is a hub in the world market of recycled goods," Candace explained, reminding us that we could see only a moment of their broad circulation as part of global trade routes. Residents in the area are not so mobile, she went on, but they live with particulate matter from the steady stream of trucks and other sources of pollution.

One of Jodi's students raised his hand. "I grew up in Bayview-Hunters Point", he said, "and I was wondering if you could tell us about the smell?" Candace nodded, as someone who has researched the political history of the landscape but had grown up in the neighborhood, and knew what he was talking about from her own personal experience. She said that the smell comes from the sewage treatment plant and also an animal rendering plant farther up the road. "When I was growing up", she remembered, "I always knew which way the wind was blowing depending on the smell". A year before Candace's tour, in October 2011, I had interviewed Aron, the owner of a greenhouse facility, located next to the Southeast Sewage Treatment Plant. The greenhouses were built in the early 1980s as part of a compromise, or mitigation package, in exchange for expanding the Southeast Sewage Treatment Plant and filtering more waste through Bayview-Hunters Point. At the time, the greenhouses were supposed to provide unemployed residents in Bayview-Hunters Point with skills training and jobs in horticulture, in the context of the

loss of manufacturing jobs and high unemployment in the area. Today the greenhouses are privately owned, although Aron told me that he makes an effort to employ people from the 92124 zip code, which includes Bayview-Hunters Point. In between rows of trees and houseplants, I could see the circular drums of the sewage treatment plant, and asked Aron what he thought about growing plants so close to the facility. He nodded, “yes, this is an issue,” he said, and went on to describe some of the smells that are part of his work environment. “There is the methane released, which you cannot always smell,” he said, “but periodically there is this burnt coffee smell. We don’t know what it is”. I thought of Aron at the sewage treatment plant as Candace and the college student who had grown up in Bayview-Hunters Point exchanged childhood olfactory-based memories.

Still standing in front of the Eco-Center, Candace guided our tour group to triangular piles of debris, tall as houses, at the aggregate business next to the recycling center. Our 360-degree tour continued counterclockwise, and she pointed to the downtown skyscrapers, centers of finance in the far distance from where we stood, tiny in relation to the grain silo, container cranes, and concrete piles. Westward, up the hill from Heron’s Head Park, were the aging Hunters View public housing units, built for shipyard workers in the 1950s. Skeletal wood structures and orange construction fences at Hunters View reminded us that Bayview-Hunters Point was in the process of a broader transformation. In pointing to the old military barracks, Candace provided a perspective grounded her understanding of the post-World War II experience of living in the southeast. “Building things does not necessarily mean progress”, she told us. “For many people here it [redevelopment] generates negative feelings”.

From the military barracks we looked south toward the Hunters Point Shipyard, which, as Candace informed the students, was a Superfund site, containing radioactive waste. Our last tour stop was Heron’s Head Park and the Eco-Center itself, which had gained a new set of meaning after Candace had situated it within its industrialized environment. Still standing out of the Eco-Center, Candace retold the story of the park as I had heard it from Sonia, with Literacy for Environmental Justice, and from Carol Bach, with the Port Authority, and as it is narrated on the interpretive placards that line the park’s trail. The Port had built these piers in the 1970s, but with deindustrialization, they were abandoned, Candace explained. “Eight acres of wetland formed naturally”, she said, adding, “when you leave nature alone, it will reclaim itself. The philosophy of nature restoration at Heron’s Head is, ‘how can we lend a helping hand to nature’”? As I have briefly explored in the case of Yosemite Slough, multiple kinds of work, or helping hands, have been involved in co-producing nature at Heron’s Head Park, including volunteer habitat restoration work, as some of Jodi’s students were already engaged in, but also technical design and manual hazardous remediation labor.

We walked throughout the Eco-Center, and Candace explained its energy and wastewater systems. The building itself, like the landfill beneath us, is made of waste materials and synthetic chemicals: the building’s roof made with styrene, the floor constituted with landfill fly ash. The recycling of these toxic by-products as a building materials, rather than putting them into ground as landfill, is a technological achievement, as are designs of the different heating, energy, and wastewater systems through which the building is made self-sustaining, or “off-the-grid”. As Candace explained the wastewater system, Jodi added, for the benefit of her class that day – “nature’s kidneys!” – echoing

Monica with the Audubon Society and Carla, the water biologist with the State Water Board.

In contrast to most toxic tours, which move around to different sites in order to understand a place at the scale of a neighborhood or even a city, that day we had stood mostly in one place. Our “tour” was meant to situate Heron’s Head Park within the larger landscape – spatially, through our “360 degree view”, and historically, via Candace’s explanations and her own memories. This aspect of the tour also linked up with Candace’s earlier point that to understand why many people living in the area weren’t interested in visiting the park, and might not experience it as an example of environmental justice, we needed to understand the political history of Bayview-Hunters Point.

Candace’s emphasis on habitat restoration as environmental justice reminded me of my interview with Anne Eng, a lawyer at San Francisco’s Department of the Environment, over a year before, in March 2011. Anne had worked at with Golden Gate Environmental Justice Law Clinic in the 1990s to fight the PG&E power plant proposal, and later ran the city’s environmental justice grant program. I met Eng in the drizzling rain in front of her office, near downtown San Francisco, but she suggested we drive out to Bayview-Hunters Point. I had contacted Eng to hear about her work on the power plant campaign, and her thoughts on environmental justice in Bayview-Hunters Point, as a lawyer. I found it significant that the first place we drove to in Bayview-Hunters Point was Heron’s Head Park. Because of the context of our meeting, the park was offered as an example of environmental justice. We parked in the dirt parking lot, and were the only car there on that grey afternoon. The rain fell as a light mist, and we decided to go for a walk down the park’s trail, while Eng described her work campaigning against two power plants in the 1990s and 2000s. I also asked about the environmental justice grant-making program she had directed. In 2010, the city’s EJ program funded LEJ, Greenaction, Arc Ecology, and a few other organizations in Bayview-Hunters Point. In the past it had also supported a farmer’s market at Mendell Plaza, on Bayview-Hunters Point’s Third Street. Middle school students sold vegetables they had grown in Hunters Point with the local nonprofit, Hunters Point Family, but the market had only lasted five years. “There wasn’t a lot of foot traffic”, Eng explained, “and it wasn’t sustainable to run the farmer’s market with government subsidies”. Mendell Plaza is on Third Street, next to the Bayview Opera House, and was usually crowded with people when I drove past it on my way to meetings or to work at a nearby garden between 2010 and 2012. I was confused by Eng’s comment that the market didn’t get foot traffic, but she explained that the plaza was often used by drug dealers, and this kept away people who might buy the market’s produce. That day at Heron’s Head Park, there wasn’t much foot traffic either, besides the path we cut through the misty rain. Unlike Mendell Plaza, the park is in an industrial area without any storefronts or residential streets. For many people their knowledge of the place comes from a historical experience of it as a dumpsite – a place to stay away from.

In March 2012, I interviewed Cheryl, an African American woman, born in Hunters Point, at the Southeast Community Center, which is next to the Southeast Sewage Treatment Plant in the Bayview district. Like the greenhouses, the Community Center was part of the mitigation package for expanding in the sewage treatment plant in the early 1980s. Cheryl’s parents had moved to Hunters Point in the 1950s, and her dad had worked as welder at the shipyard. She spoke about his work with a sense of pride, but later

mentioned that he had passed away from lung cancer, which many of the shipyard workers contracted from their workplace exposure to asbestos.

I first met Cheryl in front of a garden on Palou Street in the Bayview, a few blocks south of the sewage treatment plant. The Palou Street garden is run by the nonprofit, Quesada Gardens Initiative (QGI), which works to convert unused, vacant parcels of public property in the southeast into gardens and other green spaces – much like the Neighborhood Park Council’s work on the Blue Greenway. Its first garden, on Quesada Street, unfolds across a broad median strip (and I discuss QGI further in the last chapter of this dissertation). The Palou Street garden is owned by the California Department of Transportation (or Caltrans), and had been a fenced off, weedy, trash-filled area until QGI initiated the paperwork and organized volunteers to clear off the trash and build a garden. No Hazmat workers were needed, according to the city, but it took years of phone calls, paperwork, and patience before QGI garden managers could open the locks of the chain-link fences around the property, to clear away the trash. The site is bordered by houses on each side on the street, but sits above a Caltrans train tunnel, at the point where the commuter rail line, en route to Silicon Valley, passes under the city. Because of the train’s diesel fumes, QGI has opted not to plant vegetables in the garden, but to leave it as an open, park space, landscaped with flowers and other non-edible plants.

I met Cheryl at the end of the first Saturday morning volunteer workday at the Palou site with QGI, in October 2011. I had joined in to help the gardening organization clear trash and weeds, and lay mulch for the new green space. As I dragged large trash and compost bins to the street, filled with the remains of our day’s work, Cheryl’s minivan had pulled over, and she rolled down the window. “Are you going to plan food here?” she asked. “Isn’t the soil toxic?” I told her that I didn’t think we would plan food, but it would be a park. After chatting for a few minutes, I learned that Cheryl lived down the street from the Caltrans lot and emerging garden, and told her about my research project. She agreed to an interview, and we met a couple months later at the Southeast Community Center. We spoke first about the Palou site, and Cheryl described to me how it had been full of weeds, tires, and shopping carts. “Its been like that for as long as I can remember,” she said. “I just always assumed it was toxic”. I asked Cheryl the other places she considered toxic in the area. She gestured in the direction of the sewage treatment plant, next to the building we sat in, and also listed the shipyard, the old power plant, and then paused. “What’s that little park out there?” she said, referring to Heron’s Head, adding it to her list of toxic sites. “I would never take the kids out there”, she told me, “that stuff is toxic”. Cheryl had gone out to see the park a few years ago, and said that “it looks pretty, but from a distance”.

To the Port Authority or the Golden Gate Audubon Society, Cheryl’s perception of Heron’s Head Park would likely be an issue better scientific communication, which is why the Port Authority had written an accessible version of Geomatrix Consultant’s health risk assessment and posted it on their “Heron’s Head Park” webpage. Yet Candace – who also grew up Hunters Point, and found the park meaningful as an example of environmental justice – had suggested a longer and more spatially situated understanding of Cheryl’s truth claim, based on her conversations with Karen Pierce. The junkyards along the waterfront and the neglect of the southeast neighborhood by city agencies would have formed part of the lived experience of many long-time Bayview-Hunters Point residents. Today, the environmental remediation at the shipyard, and rising rents in the southeast, in the context

of black population decline in San Francisco, are also part of the lived experience through which many residents, like Cheryl or Espanola Jackson, relate to the wetland construction projects.

In saying this, I don't intend to dismiss the idea that Heron's Head Park is toxic or support the idea that the park is "clean". Rather, I suggest that the historical production of Bayview-Hunters Point, as examined throughout this dissertation, helps understand the truth claim that Heron's Head Park is still toxic. Likewise, understanding the political history of risk-based hazardous remediation, explored in the previous chapter, helps understand the Port Authority's unambiguous assertion that Heron's Head Park is safe. At a broader level, still, is the question of what ideas of nature are adequate to understanding these kinds of historically new urban ecologies.

Making Nature

In July 2012, I signed up for a native plant restoration event with Literacy for Environmental Justice, which at the time was still contracted by the San Francisco Port Authority to run programs and manage the park. I hadn't visited Heron's Head Park in over a year, since my rainy walk with Anne Eng, so that morning I was surprised to see its parking lot blocked off with orange construction tape. I found a spot for my car on the street in front of the PG&E power plant, which is next to Heron's Head Park. Orange construction tape was also wrapped around the perimeter of the power plant, and a wall of mist blanketed my face as I climbed out of my car. That morning, large hoses sprayed water droplets into the air while a construction crew worked on the polluted construction site. The power plant is a brownfield and, like the Hunters Point Shipyard, undergoing hazardous remediation. The heavy water droplets were supposed to attach to the toxic dust produced through the remediation work, and keep the airborne pollutants from crossing the borders of the site. An African American man in an orange vest and yellow hardhat stood at one of the entrances to the power plant and politely told me I could not enter. According to the PG&E website, the company has tried to use local businesses in their remediation work whenever possible, including trucking, construction, and security companies. The man stood at the perimeter of the brownfield site to keep people like me away from the pollutants, but I wondered about his own protection from the toxic dust (and I drove home later with the side of my car spackled in dried dust).

At first I was confused by presence of more orange-vested workers at the Heron's Head parking lot, and I wondered about their connection to the polluted power plant. Walking closer, I realized that the old dirt parking lot at Heron's Head had been paved over. New streetlights and trees lined a new trail leading up toward the park's Eco-Center. What I thought were Hazmat workers turned out to be a crew from a landscaping company, and I noticed other park improvements – California sagebrush, new bike racks, and recently laid sod, still wrapped in plastic orange fences to keep people away. On the surface, the landscaping crew at Heron's Head and the Hazmat crew at the power plant seemed to engage different kinds of labor, yet their orange vests and warning tape – signaling construction work and development – told me about the ways they were historically linked. From where I stood, near the Heron's Head parking lot, I could also see the Hunters Point Shipyard, to the south. Behind me, in the hillsides running up from

the waterfront, to the west, tall cranes and the frames of new buildings at the Hunters View public housing development reminded me that the old military barracks were also in the process of redevelopment. The visible re-construction of southeast San Francisco surrounded me. I walked up the trail to the upland portion of the wetland habitat, and joined the small crowd of people that had circled around a cluster of wheelbarrows, a stack of burlap sacks, and a box full of gloves and tools. As volunteers with Literacy for Environmental Justice that morning, we would also engage in the work of making new urban natures.

As I approached the box of gloves and tools, a woman with a clipboard introduced herself to me as Doris, and asked me if I lived in Bayview-Hunters Point. I shook my head, but wondered why she had asked. “I’m working on a report on transportation access to state and national parks,” she told me. “We want to encourage low-income people of color to visit the parks system, but it’s hard for people who don’t have a car.” Doris was trained as park ranger, and worked as a professor of Parks and Recreation at San Francisco State University. She also worked as a consultant to different federal land agencies. “It can take nearly fourteen hours for someone from Bayview-Hunters Point to get to Point Reyes (a popular hiking and recreation destination in Marin County, north of San Francisco) on public transportation”, she told me, based on some of her research on the topic. With her long dreadlocks, Doris reminded me of another black professor who studies race and the national park system at UC Berkeley, and I was pleased to find out that they knew each other. That day at Heron’s Head, most of the other volunteers were high school students from a Parks and Recreation program in the city. I did not think that Doris would meet many new Bayview-Hunters Point residents that day.

Sonia, LEJ’s staff member, welcomed the twenty people who had shown up that morning, and gave a brief explanation of which plants we should uproot, and what tools to use. As she spoke, a young Asian woman in her early twenties ran up the trail and joined the group. Like me, she had come to the volunteer event by herself, though she seemed familiar with the routine, and at home in the park. I spent the first half an hour talking with a few of the high school students and filling up the burlap sacks with wild fennel and pampas grasses – two of the non-native plants we had been instructed to uproot. I met Zora, the young Asian woman, near the wheelbarrows, and she suggested we bring them to a compost bin near the entrance to the park. As we pushed two of them unsteadily along a dirt path, I learned that Zora had grown up in Hunters Point, near Heron’s Head Park. She pointed out the rooftop of her family’s home as we unloaded the burlap sacks of plants into the municipal compost bins. I asked her what the park was like when she was growing up, realizing she must have watched its transformation from an urban dumpsite into a park. She looked out across the new parking lot, toward the Eco-Center and the salt marshes. “There was all kinds of trash”, she recollected. “Like, cars, shopping carts, refrigerators, and piles of stuff. I used to come out here with my friends, and there were families that came out here for picnics.” Zora told me how the tall trash piles would become islands when the tides came in, and she would watch fishes swim in the tide pools.

As we walked back from the compost bin, Zora pointed to a rocky wall on the south side of a square body of water, which separated us from the PG&E power plant and its dusty mist. Until recently it had functioned as a cooling lagoon for the power plant, but Zora pointed to the wall and remembered it as her private beach. “I used to go sit there by

myself and think”, she told me. Later, reading news articles about the power plant, I learned that carcinogenic chemicals from its operations were found to have been leaking into groundwater nearby, most likely for decades. A study in 2001 had shown toxic levels in groundwater at one hundred times greater than the EPA’s recommended levels for “safe” drinking water (Selna 2009).

Doris, from the parks and recreation department, had joined our conversation and was puzzled by Zora’s stories. “The area had been designated a brownfield in the 1990s,” she said, and would have been fenced off by the EPA. Zora thought for a moment. “I remember a fence, but it had holes in it”, she said, “and nobody paid much attention to it.” I was curious if Zora thought the area was toxic before it became a park, and she told me about watching sludge emerge from the power plant. “It still is toxic”, she added. Later, I asked Zora what she felt was the best use of a place like Heron’s Head – should it be a park? She thought so, but that it also should be kind of a memorial to the past, so that people visiting the park knew about its toxic history.

But at that moment – maybe it was the presence of the park ranger, or maybe it was my desire to recognize Zora’s private moments of sitting on the rocky wall – I said that I thought the park was beautiful, and a special place in the middle of this industrial area of the city. They weren’t empty words – I had spent the morning enjoying the view of the marshland and the bay, its water glinting in the sunlight. I had also enjoyed pulling up the non-native plants, even as I knew the boundaries between “native” and “non-native” vegetation had their own political histories, and my jeans were covered in dirt that Espanola Jackson had told me to stay away from. I had read the health risk assessments on Pier 98/Heron’s Head Park and studied the area’s industrial history, but the idea of volatile organic compounds and polynuclear aromatic hydrocarbons (the concentrations of which, according to the risk assessment, are today below established risk levels) seemed impossible in what I experienced as “nature”. I had run up the problem of my own received ideas of nature – and the politics of my own social and geographical location – and in which the human and chemical history of Heron’s Head Park seemed to have no place.

Raymond Williams asks, “when we say nature, do we mean to include ourselves?” In his well-known essay (1980), he traces the emergence of ideas of “nature”, as they developed in the context of capitalist social relations, agrarian and urban landscape changes, and new, secular notions of “man” in the seventeenth and eighteenth centuries in Great Britain. “Nature”, he writes came to represent “all that was not man”. The category of “nature” abstracted out human history and these social relations, even as it was a product of those relations. As Williams famously puts it, “the idea of nature contains, though often unnoticed, an extraordinary amount of human history”. Although no one at Heron’s Head Park that day would have disagreed with the idea that the wetlands were constructed by people, I wonder about effects of ideas of nature in this specific place. Did they obscure the political history and lived experiences of industrial southeast San Francisco, and multiple forms of labor involved in the making of “nature”? How can ideas of these historically new wetlands – and redeveloped industrial land more broadly – contain these multiple forms of work and the continued presence of industrial metals and chemicals, even if they are below established risk levels?



Image 17. Heron's Head Park Wetlands. The remains of the Hunters Point power plant and its lagoon in the background (photo by author).

A few weeks later, I drove past Heron's Head Park, the power plant, and the aggregate mixing business, on my way to Pier 94, for a Saturday morning of habitat restoration work with the Golden Gate Audubon Society. There are no obvious signs for Pier 94, and I knew how to get there by following directions from the Audubon Society's website. I parked in a dirt lot, near several other cars, and walked down a trail lined by shrubby plants to a sandy beach. I saw Monica and several birders, binoculars in hand, pointing to the birds in the wetland's lagoon. The lagoon was created by placing concrete blocks, or riprap, between the beach and the bay. The riprap created a calm body of water that was also constantly produced through the flow of tides, and attracted attractive birds.

Monica handed out gloves and pointed out the fennel and mustard grass to uproot. Our volunteer group was heterogeneous in age, but not in a racial sense – everyone at Pier 94 that day fit the stereotype of a white “environmentalist” that perhaps had kept Espanola Jackson from identifying as one. The group included a young couple, a few elderly birders (who spent half of the time walking around with their binoculars), a mother with three children (on a volunteer day for a school project), and a young intern with the Audubon Society. The school children talked excitedly about going home to write about nature for their school assignment. I held back the urge to explain that we stood on a mixture of landfill and imported dirt, and that the lagoon we looked out on was an engineered habitat.

They seemed too happy in picking plants and taking pictures, so I chatted with Monica and several other volunteers instead, and together we pulled up brown grasses

from the sandy beach. Monica pointed to tiny spurts of a plant called sea blight. She explained that urban development had led to the eradication of sea blight from the Bay Area, but that the Audubon Society had been successful in cultivating it at Pier 94. I asked her if the sea blight had appeared at Pier 94 after, or as a consequence of, the nature restoration project, and she told me that the plants had been imported from a nursery in Monterey, on California's Central Coast. Now the imported native plants were protected by little green plastic fences and monitored by a class at San Francisco City College. With the protective fences, the sea blight seemed to be doing quite well.

* * * * *

In the 1890s, the tidelands at Islais Creek were drained to produce the grounds for industrial development, producing a particular kind of urban nature. In the 1990s, the waterfront was transformed again, seemingly reversing the earlier swamplands conversions, or returning the waterfront to its pre-industrial state. Yet rather than a return to the Bay Area's ecological past (the *Baylands Ecosystems Goals* report, for example, sets the year 1800 as the benchmark moment by which it evaluated its progress in restoring nature), I think these wetlands habitats are better understood cyborgs, in the sense used by Donna Haraway (1991): part machine, part organism, a mixture of material and social relations only possible in late twentieth century San Francisco. And yet, as I experienced for myself at Heron's Head Park, ideas of nature remain discursively potent, potentially obscuring the human and chemical histories and social and material relations that produced the grounds for the wetlands habitats in Hunters Point today. Part of producing these new urban landscapes, it seems to me, ought to engage with producing new ideas of nature, making material and discursive space for these histories and social relations.

This chapter speaks to the broader themes of my dissertation in at least three ways. At one empirical level, this is a story about the transformation of wastelands in two historical moments: the nineteenth century conversion of swamplands, and the late twentieth century conversion of industrial wastelands, to today's valued wetlands. Industrialization and racial segregation in the southeast were two conditions of possibility for today's wetland habitats. At another empirical level, this chapter has examined the lived experiences of Bayview-Hunters Point residents, for whom the industrial history of nature at a place like Heron's Head Park is very clear. Their understandings of the toxic waterfront at Pier 94, Pier 98/Heron's Head, and Yosemite Slough – all sites very close to the Hunters Point Shipyard – should not be separated from their relationships to the shipyard itself, as I have explored previous chapters. The development plans for Parcel E-2, for example, include a constructed, L-shaped wetland habitat, fitted around the landfills. In July 2012, I had spoken to Jack, with the Department of Toxic Substances Registry, and asked him whether he was worried about the toxic waste on Parcel E-2, and its long-term for living on the people and the environment more broadly. Jack told me he was confident that the waste problem would be safely managed, and that, at end of the day, "Some of the remedies for E-2 will be so great for the critters – we will have a really high quality habitat for critters". People will be able to enjoy the wetland, and park-like area of the base too, "it will be usable, beautiful", Jack told me. I wondered to whom the area would

be beautiful, and doubted that the residents who opposed the landfill cap, which I examine in the previous chapter, would agree.

Lastly, this chapter looks at environmental politics in the context of redeveloping industrial areas of cities. In the previous chapter, I focused on the Hunters Point Shipyard and cultural meanings of waste. In the following chapter, I return to the shipyard and examine the history of nuclear waste produced by the Naval Radiological Laboratory.

¹ I imagined Rachel attending these meetings as a representative from Arc Ecology, and thought that her presence, as a black woman, would have been appreciated by many black Bayview-Hunters Point residents, who are used to white professionals swooping in from outside the community to help. A month later I had interviewed Marie Harrison, who works with Greenaction for Environmental and Health Justice, but had previously organized with SAEJ, and was also active at the *Blue Greenway* task force meetings. Marie told me,

People still come to Bayview with their ideas to raise money, to use your statistics and numbers to raise money. I say to them, I don't know how you got the money, but this is important to use, so if you want to work with us, this is what you have to work on.

For Marie, Greenaction stood out from most advocacy organization in the southeast “because we don't try to lead the community down any pathway, instead, we're supporters of the community.”

² In sixteenth century England, Dutch merchant capital facilitated fen-drainage projects, which expanded (or produced) England's arable land by ten percent (Wood 1984, Giblett 1996). John Locke, theorist of private property and advocate of improvement, would have had intimate knowledge of fen drainage and the conversion of wetlands to solid ground as the material prerequisites of private property. He grew up in an area of England known as the “Western Waterlands,” which were drained marshlands made rich for agriculture. His father also worked for a short time as a county clerk for sewers, a position that oversaw the banks, drains, and other public works which maintained the solid state of the farmlands (Wood 1984).

³ Even today, what is considered the most comprehensive definition of wetlands includes the following as one of three possible attributes, “the substrate is nonsoil and is saturated with water or covered by shallow water at some time during the *growing season* of each year” (quoted in Goals Report 1999).

⁴ According to its website, Northgate specializes in environmental investigation and remediation, brownfields restoration, groundwater quality and aquifer analysis, water resource and reuse evaluation, air quality monitoring, and risk assessment, enhanced by in-house geotechnical engineering and construction management capabilities. It is based in Oakland and was founded in 1999. Acumen Industrial Hygiene Inc. specializes in occupational health and safety, asbestos risk management, and hazardous materials management. It is based in San Francisco and was founded in 1989.

⁵ Geomatrix Consultants is technical consulting an engineering firm based on Oakland. In 2008 it was acquired by the London-based AMEC corporation, a large environmental services firm that works in the oil and gas, mining, nuclear power, water, infrastructure, and other services. Like Tetra Tech Inc., discussed in the third chapter of this dissertation, AMEC is a “life cycle services” firm.

Chapter 4 - Particulate Matters: The Naval Radiological Defense Laboratory and the Social Lives of Dust

“For waste can touch the most visceral registers of the self – it can trigger responses and affects that remind us of the body’s intensities and multiplicities. This qualitative overspill is an excess that escapes the knowable, manageable subject.”

-Gail Hawkins and Stephen Muecke (2003, p. xiv)

“The way of the ghost is haunting, and haunting is a particular way of knowing what has happened or is happening. Being haunted draws us affectively, sometimes against our will and always a bit magically, into the structure of feeling of a reality we come to experience, not as cold knowledge, but as a transformative recognition.”

-Avery Gordon (2008, p. 8).

“For best results with an acid solution, the surface should be scrubbed vigorously as much as practical with a stiff brush.”

-“Experimental Decontamination, U.S.S. Crittenden.” May 10, 1947

In summer of 1946, the U.S. military exploded two atomic bombs in the Marshall’s Island’s Bikini atoll, a small ring of islands 2,500 miles southwest of Hawai’i, in the Pacific Ocean. The project was known as Operation Crossroads, and it marked the beginning of a regime of nuclear weapons testing by the U.S. that lasted until 1992. The second bomb was exploded from ninety feet under the ocean, sending a wall of radioactive water and other ocean matter throughout the lagoon, covering the target warships and the nuclear experiment’s support fleet with a degree and kind of radiation for which the military and scientists were unprepared. In the ensuing environmental disaster, the military saw how radiation was not simply a waste product of the atomic bomb, but a weapon itself, requiring new practices of national defense.

The Naval Radiological Defense Laboratory (NRDL), which operated at the Hunters Point Shipyard in San Francisco from 1946 to 1969, grew out of attempts to decontaminate radioactive warships from Bikini – a thoroughly new problem of the age. From its initial set of ad hoc experimentation on warships-turned-floating labs, the NRDL was tasked with developing tactics and technologies for protecting Navy ships, shore establishments, crewmembers, and U.S. cities in the event of a future atomic war. At the same time, it systematically exposed Marshall Islanders and shipyard and laboratory workers to radiation, blurring the distinctions between warfare and scientific research. Based on the NRDL’s records between 1946 and 1948, and between 1954 and 1955 (the intervening years remain classified), housed at the San Francisco branch of the National

Archives, this chapter shows how, at the very moment the lab was developing manuals for atomic defense, increasingly precise instrumentation and techniques for radiation detection, and protective gear for soldiers in the field, the work of operating a radiation lab on an active, windy shipyard was messy, laborious, and accident-prone. These practices of “radiological defense” therefore had toxic consequences for bodies and environments, requiring a second decontamination project: the U.S. Navy cleans up the byproducts of the NRDL as part of its remediation work on the shipyard today.

Yet the lab’s papers at the National Archives, and researchers looking through them, are not outside this historical geography of military radiation. In this chapter I also explore dust covering the lab’s historical records as “ghostly matter” (Gordon 2008), an elusive but experientially powerful mode of understanding some of the effects of the bomb and the social relations of radiological defense. Inspired by Gordon’s emphasis on affective and experiential ways of knowing worldly power, I consider my own contact with the lab, through the materiality of its papers, as analytically important in the writing of history. I am also guided by Gordon’s emphasis on alternative modes of academic writing (including the value of story-telling and detour) and a critical language that takes the seriously Raymond Williams’ concept of a “structure of *feeling*.”

Intimate Geographies

Morning traffic on the Bay Bridge slows my drive to the National Archives in San Francisco, and I flip through the radio stations absentmindedly. A woman’s voice on National Public Radio (NPR) reports the wait time on the bridge, and my foot moves like a metronome between the clutch and brake pedal. Pressing through pop music and morning talk radio shows, I return to NPR at the beginning of an interview with a man who, as a young soldier in 1957, worked at the Nevada Test Site, driving trucks, moving materials, and building houses which were later destroyed and studied during a set of thirty nuclear explosions, called Operation Plumbbob¹. In my car, I sit up in my seat and lean toward the radio speakers, ears perked. At the archives I am reading through files from the Naval Radiological Defense Laboratory (NRDL), which operated at the Hunters Point Naval Shipyard in San Francisco from 1946 to 1969. The lab’s purpose was to develop methods and technologies of radiological safety and defense in the event of a future atomic war, but it grew out of attempts to decontaminate irradiated warships returning from the Bikini atoll in the summer of 1946.

In its sterile and official reports, I can sometimes read the urgent tone of scientists struggling to build a radiation lab on one of the country’s busiest shipyards in the early years of the Cold War. In labor contracts and descriptions of scientific experiments, I catch glimpses of the difficult manual work involved, traces of the workers who sandblasted radioactive warships, cleaned the cages of irradiated animals, and hauled away the lab’s waste materials in 55-gallon steel drums, reinforced with concrete so they would sink to the bottom of the ocean. The proximities between the workers and sources of radiation, their tactile connections to the bomb’s fallout, contrasts with the often cold and rational scientific language in the laboratory’s archived files, offering a different perspective on the meaning of radiological “defense”, of the multiple sensory experiences with the bomb, and the social relations of nuclear science at the beginning of the atomic age.

The former soldier on NPR that morning is interviewed by his daughter, and he speaks not of feeling protected but of feeling exposed and betrayed. “A lot of good men died,” he says, referring not to the war zones of Europe or Korea, but the effects of nuclear bombing in the desert lands of the U.S. itself. As his voice breaks at the end – he cannot continue speaking from the emotional force conjured by his memories – my heart breaks too. The sound of his tears through my car speakers, so many years after the event, and my own emotional response, also tells me something about the long-lasting effects of the Cold War regime of nuclear testing, the ways the bomb’s fallout includes not just material debris but also closely-held emotions, a form of what Henry Marx might have called sensuous knowledge: “seeing”, yes, but also, “hearing, smelling, tasting, feeling, thinking, contemplating, sensing, wanting, acting, loving” (Marx 1974: 351). In his early writings, Marx moves beyond Hegel’s idealist philosophy in arguing that it is through labor in the concrete – through the senses – that the commodity form and other categories of bourgeois political economy and life would become known and challenged (Marx 1974). Avery Gordon (2008) expands on Marx’s concept of sensuous knowledge through her own notion of *ghostly matter*. Gordon’s ghosts are social figures that point to the ways abstract social relations manifest intimately, as embodied, perceptual experiences, which she calls *hauntings*. The feeling of being haunted is a mode of apprehension at once intensely personal and suggestive of a broader social scale, beyond the individual experience – an intimate, experiential way of knowing worldly power. Ambiguous yet powerfully felt, a haunting “tells and transports at the same time” (Gordon 2008, 205). It is through my own labor of listening that I apprehend the soldier’s own “sensuous knowledge” through the radio waves – including his struggle to hold back tears – and which suggest to me that the end products of the NRDL were much more than the contents of the 55-gallon steel drums workers heaved off naval ships into the ocean.

At home that evening, I read through the transcript of the radio broadcast online, and the journalist notes that “It is hard to determine just how many veterans became ill because they were at those tests, but Healy [the soldier’s last name] and thousands of other on-site participants have received compensation from the 1990 Radiation Exposure Compensation Act, administered by the Justice Department”². I wonder whether it matters that one person’s illness can be directly attributed to a specific atomic blast, but in this instance the Department of Justice did not require that level of causation either. In 1977, a study by the Centers for Disease Control and Prevention (CDC) determined that soldiers present as Shot Smoky, one of Operation Plumbbob’s “test” bombs, had contracted more cases of leukemia than would normally be expected in the population (Defense Nuclear Agency 1984, Hacker 1994).

At the archives that day, in the cold space of the document viewing room, I gingerly finger the dusty files of tissue thin papers, my nose dripping from the particulate matter I inhale. The researcher at the table in front of me pulls crisp folders from clean grey boxes. My files are jammed into decaying cardboard boxes, which barely hold together as I lift them off the cart, pressing their weight against my chest as I move them to my table space. As he wheeled out my cart of requested files from the holding area that day, the archivist told me, “These are six of the most bedraggled boxes I have ever seen.” I am reading about beta radiation experiments on mice and dosimetry reports on humans, but the delicate feel of the translucent white papers and the ink smudged on pink and green carbon copies transport me to the lab space itself. I think about the scientists who conducted the

experiments, the secretaries who typed the reports and filed them in cabinets, and especially of the workers who built the labs, moved the heavy materials around, and hauled away the waste. I hold the thin pages carefully, cautiously, thinking about the young soldier in 1957, his youthful trust in “Atoms for Peace”³. I hope the dust I breathe in is “merely” the particulate matter of old cardboard, or maybe from other files in archive’s storage area, but not from the radiation lab itself. I read the documents for a light onto the past, for an understanding of the physical labor involved in radiation experiments on the shipyard’s lab, but I find that what most animates that past in the space of the archive’s reading room is my sensory experience with the dust – the way it smells funny and makes me sneeze, the tense and cautious way I touch the pages, my anxieties of what I cannot see, and what I cannot ever know with the same certainty as the language of scientific reports in front of me.

I am motivated to read through the lab’s files, to “exorcise the ghost” as Derrida put it, to give it “a hospitable memory... *out of a concern for justice*,” (quoted in Gordon 2008: 58), not just for the workers from the past whose traces I search for in the archived files, but for residents of Hunters Point today who desire a reckoning with the shipyard’s ghosts. Today the shipyard is part of a large urban redevelopment project, which promises to transform the old military base into an urbanized landscape of high-rise condominiums, commercial and office spaces, and shoreline parks. Images from the redevelopment company’s website depict the shipyard in sparkling, park-filled, vibrant urban scenes, communicating how the project represents a clean break with the decaying military buildings, the wide, industrial dry docks, and the toxic chemicals and memories mixed into the earth. The Navy’s contractors rely on risk-based remediation technologies, which means that some of military’s hazardous residue will remain underground (ostensibly also below human health risk levels) even as the transformed military base becomes the grounds for new forms of urban life.

While many Hunters Point residents support environmental remediation, which is experienced as a form of restorative justice, they also desire a confrontation with this past rather than the burying of memory along with other toxic sediments (Dillon 2013). In particular, they seek a fuller historical accounting of the radiological laboratory and recognition of the ways the shipyard’s toxic waste products might impact their lives in the present. In this they share a similar relationship with the U.S. military as Marshall Islanders. In the Pacific Ocean during the 1940s and 1950s, the military relocated Marshallese communities from their homes in order to produce an outdoor laboratory for their experimental nuclear weapons “tests”. Radiation from the bomb’s fallout did not obey imagined borders of the bomb’s scientists or the radiation monitor’s threshold values, and Marshallese people have subsequently suffered from increases in thyroid disorders, cancers and leukemia, cataracts, and other radiation-related illnesses (Johnson and Barker 2008). The kind of recognition sought by Bayview-Hunters Point residents and Marshall Islanders today too often exceeds the logic of risk measurement and other technical ways of knowing and apprehending toxic matters.

The properties of radioactive atoms are not just a concern for Hunters Point residents or Marshall Islanders. At the Chicago branch of the National Archives, in 1993, low levels of radiation were found adhering to one-third of 20,000 pages of the files from Enrico Fermi’s lab in Argonne, Illinois (Anderson 1994, Forsythe 2010). Fermi was a Nobel Prize-winning nuclear physicist and scientific director of the first controlled nuclear chain reaction in Chicago, in 1942, and helped to develop the first atomic bomb. The

decaying matter on files from the radiation lab in San Francisco reminds me of the ways the past is alive in the present, how radiation experiments continue to haunt lives in the present, including Hunters Point residents who live near the shipyard and graduate students sifting through old technical files.

Dust Studies

In this chapter I explore the *dust* as ghostly matter, and as mode of apprehending some of the enduring effects of “the bomb” and the social relations of nuclear science that studied its power. Attending to dust is like apprehending a ghost. I cannot see it, but other senses tell me of its existence – the smell of old paper, the feel of washing my hands when I leave the archives for the day, my own fears and anxieties of being so physically close to the boxes of lab files themselves, which have been stored at two radioactively impacted military bases over a period of decades⁴. For Gordon, ghost stories force a reckoning with the ambiguities and contradictions of the logics of Big Categories – of Racism and Capitalism, State Terror and Violence. The ghost is powerfully felt and experienced yet elusive and uncategorizable, at the same time. Ghosts point to the “disjuncture between identifying a social structure...and its articulation in everyday life and thought” (p. 19), producing less tidy understandings of history and social formations, but perhaps ones more transformative through their affective power.

Yet for Gordon, the *matter* of ghosts is ultimately about the politics of knowledge. She asks how might we learn to recognize and write about the sociality of intimate, uncategorizable (structures of) feeling, which do not *appear* as Racism or Capitalism – which spill over and beyond those analytical terms: How to grant (material) presence to a (seemingly absent) ghost? In this chapter, dust figures as ghostly matter in a way that takes the materiality and intimate geographies of Gordon’s historical materialism into an expanded analytical realm. The dust-matter does not have the more recognizable social figure of a human being, as with Gordon’s ghosts, but is separated, as particulates, requiring more imaginative reframings of its histories. For me, the intimacy of the sometimes invisible, knowingly uncontainable, and usually smelly dust particles in the archival reading room is visceral – I feel it on my fingers and I inhale it, aware that it enters my body. As I sit in the cold reading room of the archives, my sensory knowledge of dust reminds me of the tactile connections between bodies and invisible radiation, some which are dutifully recorded, as numerical figures, in the lab studies and monitoring reports in front me.

Like radiation, dust is a process of decay and disintegration. As defined by the *Oxford English Dictionary* (OED), dust is “earth or other solid matter in a minute and fine state of subdivision.” Dust is about the vulnerability of bodies to milieu, the porosity of borders. In the *OED*, dust is also defined as “particles small and light enough to be easily raised and carried by a cloud in the wind.” The various ways I sense the dust in the archives, though I cannot see it, reminds me of the alpha, beta, and gamma particles, which rained down on target ships in Bikini and were carried away in clouds, dispersed throughout the earth’s atmosphere. The smell and feel of decaying pages disrupts the scientific and bureaucratic language of the documents I am reading, reminding me that the lab work at the shipyard was not as neat and clean as the crisp and sterile languages of its memos and reports. Rather, dust conjures for me the physical space of the lab, which operated on an

active shipyard, the experiments which took place on radioactive warships on a windy bay, and the heavy labor contracted out by the lab to shipyard workers, which sometimes necessitated rescue breathing apparatuses so that the workers might not inhale the fallout, the waste products of atomic bomb “tests”. Dust tells me that the lab’s files themselves are more than immaterial sources of information, that I am holding physical papers, with their own histories and geographies, their own decay rates.

Besides the NRDL’s own internal histories (Naval Radiological Defense Laboratory 1954, 1964), a series of articles in the *San Francisco Guardian* (Davis 2001a, 2001b, 2002), and several technical surveys of residual radiation at the shipyard (US Navy 2004, US NRDL 1956, 1964), there is not much written about the lab (or the shipyard for that matter), and no scholarly literature. Although it was a relatively minor radiation lab in relation to the sprawling “national labs” like Argonne, Berkeley, Brookhaven, and Oak Ridge (Westwick 2003), until it closed down in 1969, the NRDL was the U.S. military’s largest applied nuclear research lab, and the Hunters Point Shipyard was, from WWII through the end of the Korean War, one of the busiest naval bases in the country (Davis 2002).

The NRDL grew out of attempts to decontaminate ships irradiated with fallout from Operation Crossroads in 1946 – the U.S. military’s first experiment with nuclear testing in the Marshall Islands – and it continued to study radioactive debris produced in the Pacific Ocean and at Nevada Test Site throughout the length of its operations. Yet despite the sensitive and hazardous nature of its research, it did not have a permanent, modern laboratory space to conduct its experiments until 1955. Between 1946 and 1955, during the height of military operations at the shipyard, the NRDL operated out of a series of surplus buildings leased out by the shipyard on a temporary basis – old barracks, dispensaries, and storage shacks. The lab also conducted experiments on radioactive warships docked at the shipyard – decommissioned target vessels from Operations Crossroads, converted into floating labs. Lab reports and memos from the years 1946 to 1949, and between 1954 and 1955 (the intervening years are still classified), housed at the San Francisco branch of the National Archives, record the constant frustrations of scientists working on an industrial shipyard in overcrowded facilities, dispersed across the 500-acre military base on the edge of a major city. The chaotic lab space sometimes rendered the nature of the work and the workers themselves unsafe, vulnerable.

This chapter focuses on the NRDL in the late 1940s, a moment when scientists and the US military had begun to grapple with new, postwar threats and opportunities of nuclear power. In the following section I spend time examining Operation Crossroads, because the NRDL grew directly out of the disastrous aftermath of the second bomb. Although I focus on the Hunters Point Shipyard in this chapter, I also consider the NRDL within the broader geography of U.S. nuclearism in the Pacific Ocean, namely its connections with the Marshall Islands. NRDL scientists travelled to many of the weapons tests at the Pacific Proving Grounds, and developed standards and technologies used by radiation safety monitors, during those weapons tests and at other shipyards and laboratories. Throughout the 1940s and 50s, the NRDL continued to receive fallout samples from the Marshall Islands for analytical testing. After Operation Castle in 1954, during which a thermonuclear bomb exploded at two and a half times its expected force, exposing Marshall Islands and a Japanese fishing boat to the powdery fallout, the NRDL collaborated with the Navy Medical Research Institute, in Maryland, on biological experiments that involved analyzing

samples taken from Marshallese bodies. These social and material connections compel an analytical orientation through which I keep in mind Marshall Islanders along with Hunters Point residents today, as part of a broader “radiogenic community” (Johnson 2007) across time and space.

Slow Violence

The NRDL’s primary objective, as explained to the Atomic Energy Commission (AEC) in a 1947 letter, was to “study the consequences and defensive aspects of atomic warfare,” (“Establishment of NRDL”) but it grew out of a big mistake. In July 1946, a Joint Army-Navy Task Force exploded two atomic bombs in the Bikini lagoon of the Marshall Islands, part of a research project called Operation Crossroads. Among the effects of the bombs dropped at Hiroshima and Nagasaki in 1945 was the realization that the nature of warfare had changed, including the role of the Navy. Did the atomic bomb render the Navy irrelevant? How vulnerable were naval vessels to the bomb, dropped by the now more powerful aircraft? These questions circulated in public debates and among the military divisions, and motivated the Army and Navy to assemble 242 ships (known as a “ghost fleet”), 156 airplanes, 42,000 people, and 5,664 animals in the Bikini lagoon in the summer of 1946, to test the material, biological, and environmental effects of two nuclear bombs (Hacker 1994, Weisgall 1994).

To understand the bomb’s potential effects on soldiers, the Army’s biological warfare division loaded 200 pigs, 200 mice, 60 guinea pigs, 204 goats, and 5,000 rats onto an attack transport, the *Burlison*, which set sail for Bikini from the Hunters Point Shipyard in June 1946 (Weisgall 1994). During the two atomic explosions, the animals were strategically placed on twenty-two different target ships to simulate a human crew during battle. According to an Army spokesman at the time, goats were chosen “because they are as tough as sailors. They will have their hair clipped to approximate human hair, including a few bald pates” (*The San Francisco Chronicle* 1946). Pigs were chosen because their skin is like human skin; rats, because their blood is similar to human blood; and mice, because they, like humans, are sensitive to cancer. The Army brought tanks, armored cars, trucks, and radar equipment, which it placed on ships and on other islands around the lagoon, to test the ability of these materials to withstand the force of the bomb and the effects of radiation afterwards (*The Masthead*, July 27, 1946).

While the U.S. moved these materials (including the two bombs) to Bikini, it removed 170 Marshall Islanders to the island of Rongerik, 130 miles away (Miller 1986). Through the relocation of the Bikinians, the military produced a seemingly blank space for its nuclear weapons testing program. A year after Operation Crossroads, in 1947, the U.S. annexed (with United Nations approval) the Marshall Islands as a trust territory, and in 1948, designated Enewewok atoll, east of Bikini, as the Pacific Proving Ground – its outdoor laboratory where military scientists could “prove” theoretical advances in nuclear weapons technology. The U.S. continued to use Enewewok and other islands as a test site for its experimental weapons program until 1958, ultimately exploding 67 bombs (Johnston and Barker 2008). Valerie Kuletz (1998) has identified the desert grounds of the Nevada Test Site – deemed unproductive and disposable in the eyes of the military, science, and the state – a national sacrifice zone. Kuletz writes that, from a “Euroamerican way of seeing”,

deserts are unproductive, empty spaces – ideal for weapons tests or for storing high-level nuclear waste. From the perspective of the Paiute and Shoshone tribes however, the U.S. southwest is rich with cultural and ecological meaning. As with deserts in the southeast, the U.S. state, military, and its scientists, had “seen” the Pacific Ocean islands and Bikinians as disposable people and places.

Shot Able, dropped by aircraft on July 1, missed its target by half a mile and sank only a few ships, disappointing over a hundred journalists who the Task Force had invited to watch the event. By then, others had experienced and written about the visual power of the bomb: “The brightest light I have ever seen or that I think anyone has ever seen.” (I. I. Rabi, quoted in Masco 2006: 57). “It was as though the earth had opened up and the skies had split” according to William Laurence, who was the only reporter allowed to witness Trinity, the first atomic bomb, in 1945 (quoted in Masco 2006: 59). “The show was not as spectacular as we had been led to expect,” wrote one journalist who observed Shot Able (quoted in Hacker, 1987: 131), suggesting how the bomb was already expected to elicit an experience of the sublime (c.f. Masco 2006).

Yet Shot Able was more than visually unspectacular, although it was the most photographed event in history at that time (Masco 2006). Its physical debris – the bomb’s fallout – was likewise unsurprising, at least what could be detected by scientists at Bikini. Because the Able bomb was dropped from the air, the deadly fission products were sucked into Able’s mushroom cloud and dispersed in the stratosphere (Weisgall 1994), the beginning of, as Joseph Masco (2006) puts it “ a subtle but total transformation of the biosphere”. Radiation measured with Geiger counters was considered unthreatening by the small radiological safety team at Bikini, since they were below tolerance levels of the time (Weisgall 1994)

On July 25, 1946, the Task Force detonated the second bomb, Shot Baker, from ninety feet under water, sending a half-mile wide column of water into the sky, forming a dome shaped plume that released a million tons of water and an unanticipated amount of fission products down onto the Bikini lagoon (Hacker 1987). A circular wall of radioactive ocean mist (its “base surge”), pushed outwards from the bomb’s cloud at sixty miles an hour, bombarding the ghost armada with unexploded fission products in significantly larger quantities that had been predicted (Hacker 1987, Weisgall, 1994). In contrast to the near-spiritual reflections of Trinity observers, a naval ordnance man called Baker’s cloud “the most poisonous fog that ever existed in the history of the world” (quoted in Miller 1986, 78). The second bomb was indeed shocking, and compelled a new vocabulary to talk about nuclear weapons, including terms such as “base surge”, “dome” and “cauliflower cloud” (Weisgall 1994). Yet what caught the radiological safety team by surprise was not just its spectacular explosion, but its pervasive radioactivity in its aftermath.

Books have been written about Operation Crossroads and its aftermath, including the effects of radiation at Bikini decades after the “event” (Hacker 1987, 1994, Miller 1986, Bradley 1987, Weisgall 1994, Johnson and Barker 2007). The discovery, during Operation Crossroads, of radioactivity as a weapon – that “the bomb” was not simply the singular, spectacular explosion – suggests how the military had become aware of what Rob Nixon calls *slow violence* (2011), “a violence of delayed destruction that is dispersed across time and space, an attritional violence that is typically not viewed as violence at all” (p. 2). Importantly, Nixon specifically explores this concept in relation to the socio-economic effects of environmental disasters. Slow violence, as Nixon elaborates, builds on the idea of

“structural violence” – or physical suffering as the effects of structural social relations (see Farmer 1996) – but with an important twist. The concept of *slow* violence emphasizes change and movement over time and space, broadening the common notion of violence as a discrete, immediate act. For the purposes of this chapter, the concept of slow violence is analytically useful in broadening the idea of military violence to include the dispersed and slow-moving effects of radiation, in which there is often a long time gap between exposure and detectable injury.

The concept of slow violence challenges the idea that Shot Baker was a singular, discrete event and pulls into analytic foreground the temporally extended effects of radiation as well as the dispersed geography of the fallout. The scale and scope of Operation Crossroads extended from the Marshall Islands to Hunters Point, and indeed to the entire globe. Imagining the effects of Shot Baker as a form of slow violence calls into question *where* Operation Crossroads “happened,” and whether, and where, it still might be “happening”: in the slow decay of radioactive isotopes and in psychological and social spaces, and in anxieties about the genetic effects of radiation exposure that might not manifest for decades.

The notion that Operation Crossroads was “over”, as the Joint-Task Force declared in 1946, would make even less sense from the perspective of Bikinians and other Marshall Islanders, who continued to suffer the effects of radiation fallout, under the medical and military eyes of the U.S. government. In 1968, following an AEC report, President Lyndon Johnson had declared Bikini “safe” for human habitation, and 139 Bikinians were allowed to return to the atoll with assurances that radiation did not pose a threat to their health. Ten years later, in 1978, the U.S. relocated Bikinians again, after more scientific research contradicted Johnson’s clam that radiation levels were above federally accepted standards (Simons 1997, Johnston and Barker 2008). Bikinians filed a class action lawsuit in 1983 against the executive branch of the U.S. government, seeking compensation for their injuries. Their lawsuit prompted President Reagan to initiate a Compact of Free Association (COFA) through which the Marshall Islands gained its sovereignty and \$150 million in compensation. The COFA agreement rendered Marshall Islanders lawsuits outside the jurisdiction of the U.S. Claims Court. A Nuclear Claims Tribunal Court was established in 1987 to administer COFA funds, which is today distributed on the basis of personal injury (Simons 1997, Barbara Rose Johnson, pers. comm). The “Bikini Resettlement and Relocation Act of 1999” has provided a framework for a second attempt at a return to Bikini, but as of 2013, the International Atomic Energy Agency still advises that radiation levels at Bikini are too dangerous for human habitation.

The U.S. nuclear program in the Marshall Islands is also an example of what Nixon calls “displacement in place”. Nixon uses this concept to describe the ecological and cultural losses suffered by indigenous groups through resource extraction by powerful governments and companies. Nixon contrasts the “vernacular” landscape of indigenous groups, with “an official landscape – whether governmental, corporate, or some combination of those – is typically oblivious to such earlier maps; instead it writes the land in a bureaucratic, externalizing, and extractive-driven manner that is often pitilessly instrumental” (p. 17). Nixon’s concept is similar to Kuletz’s (1998) analysis of the extractive, instrumental lens of a “Euroamerican way of seeing” in the U.S. southwest, producing Yucca Mountain as a zone of nuclear sacrifice. As part of today’s Marshall Islands Dose Assessment and Radioecology Program, the Lawrence Livermore National

Laboratory monitors the uptake of radioactive cesium-137 in plants and coconut crabs – a cultural significant source of food for Marshall Islanders. Today many Marshall Islanders can no longer grow food for subsistence on their home islands, and much purchase food produced elsewhere (Johnston and Barker 2008), an example of the ways U.S. weapon tests had the effects of displacing Marshall Islanders from their indigenous landscape.

After Shot Baker in July 1946, radiation concentrated in the water of the Bikini lagoon, in the marine life that stuck to the ship's hulls, in the wood of the ship's decks and the paint on their sides, in the ventilation systems, salt water piping, and the evaporators on the experiments support ships (Defense Nuclear Agency 1984, Hacker 1987, Welsome 1999). Geiger counters failed in the humid climate and scientists learned that their instruments could not detect plutonium, that film badges worn by scientists and soldiers could not detect alpha and beta particles, and that radiation levels varied, unevenly, across individual ships – decks might be considered “safe” on one end and contaminated on the other (Weisgall 1994, Welsome 1999). Radiological safety monitors, who oversaw the work of decontamination, were few in number. The monitors wore rubber gloves and boots while soldiers tasked with the labor of decontamination often worked shirtless and in sneakers (Weisgall 1994). “We had scientists dressed for outer space,” remembers one man, a Navy diver, “with instruments like I had never seen. But when it came to diving or bringing up samples, all we had were skin and tanks” (quoted in Weisgall 1994, 231).

In mid-August 1946, the operation was relocated to Kwajalein, an atoll in the Marshall Islands, southeast of Bikini, where decontamination efforts continued. Radiological safety monitors were especially concerned about dust and other small particulate matter that workers inhaled as they attempted to scrap radiation off the ships. Safety regulations, hastily written, ordered that breathing apparatuses should be worn by workers while under deck at all times, and people should avoid dust, piles of rust, and paint chips – all likely sources of radiation (Defense Nuclear Agency 1984). This proved difficult in a tropical climate. A report on Operation Crossroads commissioned by the Department of Defense in 1984 describes how an ammunition disposal unit was ordered to remove thousands of tons of unstable ammunition from the ghost fleet at Kwajalein, beginning in mid-August. The workers wore fatigues, rubber gloves, boots, and rescue breathing apparatuses, as if they were preparing for war. Ordered onto radioactive ships with rescue equipment, the soldiers were at once sacrificed and saved, just as the bombs were both “tests” and actual events, blurring categories of warfare and scientific research.

Masco (2006) observes that “there was no separation between the experiment and its real-world effects during the above-ground testing regime of 1945-1963”. The 1984 defense report recalls that the work of ammunition removal was exhausting, and that, burdened with heavy clothes and breathing gear in the hot and humid climates, the soldiers could only work inside the ships for thirty minutes before coming up for air. The protection gear itself suffocated them. The report notes that by October 1946, after nearly three months of work, “serious morale problems were developing in the Ammunition Disposal Unit due to doubts and unanswered fears about the effects of radiation and fatigue due to the long, uninterrupted, and hazardous duty” (Defense Nuclear Agency 1984: 125).

In all these accounts, San Francisco and the Hunters Point Shipyard are mentioned only briefly, as the geographical and historical terminus of Operation Crossroads. Such narratives miss the ways that the NRDL represents the continuation of Operation Crossroads, as well as the ways the disaster was converted into an research opportunity, as

grounds for postwar nuclear science and industry. By late August 1946, the target ships at Kwajalein were either sunk or towed to West Coast naval bases for further decontamination and study. One of the precautionary measures during the transportation of these ships included to “avoid [...] exposing personnel to fumes from welding or cutting or dust originating from surfaces contaminated by salt water” (“U.S. Naval Communication Service”) The Hunters Point Shipyard was chosen as the primary base for the continuing decontamination work, because of its proximity to two other radiological laboratories in the San Francisco Bay Area and the expectation that San Francisco would be “the natural staging point for future Pacific Weapons tests” (“US NRDL History 1946-55”). The Radiological Safety Section (RSS), which eventually became the NRDL, was established at the Hunters Point Shipyard in the same moment that the Joint Task Force was dissolved and Operations Crossroads was declared officially “over”.

The RSS oversaw the project of decontaminating and granting clearance to non-target ships from Bikini. This kind of work had never been attempted before, and it was through experimental decontamination research at Hunters Point that general methods and procedures for ship decontamination, including standards for worker safety, were developed. According to the Defense Nuclear Agency report, “San Francisco was... the center of research and expertise on the problem of decontamination is considered to have been standard at all naval yards” (1984, 142). Several warships were converted into floating labs on which the RSS would conduct decontamination experiments, searching for the most efficient (in terms of time and money) methods, and this experience quickly became standard for all naval bases. One scientist remembers this process, “We would decide among ourselves how to go about the new type of job, then do it, and then dispatch BuShips and BuMed [the Navy’s Bureau of Ships and Bureau of Medicine and Surgery] asking if it were all right to do it that way. If we were right we would dispatch our counterparts in other shipyards, reassuring them” (quoted in “US NRDL History 1946-55”, 1). Early research projects at the new radiation lab also included the effects of the target vessel dust on the human body – through inhalation, ingestion, skin contact, and mucus membrane – and the development of more effective breathing apparatuses, to protect against the threat of radiation (“Letter from R.A. Conrad to Captain Draeger”)

Even as the shipyard produced knowledge about decontamination procedures and worker safety, the early period of decontamination work, at least, the lab operated with limited resources. A Monthly Progress Report from March 1947 inventoried the laboratory’s equipment, which initially consisted of scalars, rate meters, and graphic recorders, all which had been used at Bikini and which the report notes “were for the most part in poor condition.” (“Monthly Report for March 1947”). Still, by early December 1946, forty-three ships had already been decontaminated and cleared for future use. Still, the radiation lab’s experiments at the time became the grounds for developing a manual for atomic defense a few years later, which would provide the different branches of the military with technical information about how to plan and defend against a future nuclear attack. (“Current activities in Chemistry and Related Functions at NRDL”).

Laboratory Life

In December 2011, after reading an article on the Fukushima nuclear disaster in *The San Francisco Bayview*, I see that the author, Janette Sherman, worked at the NRDL in the 1950s. The SF Bayview is run by Willie Ratcliff, who migrated to San Francisco from Texas in 1951 to work at the shipyard. The article gives me contact information for Sherman, and after introducing myself over email, I call her the following week at her home in Virginia. Janette worked as a lab technician at the NRDL from 1953 to 1954, after she finished her B.A. at UC Berkeley, and while her husband served in the Navy. Before her job with the NRDL, she worked as a radiation monitor at the Crocker and Donner labs in Berkeley, using Geiger counters to track alpha, beta, and gamma radiation during experiments. The Crocker lab was run by Joseph Hamilton, who also conducted radiation experiments on human cancer patients in Oakland and San Francisco (Welsome 1999). Over the phone, Sherman recalls one medical experiment, in particular, at a hospital in Oakland. She is standing in the doorway of the patient's room with her Geiger counter as a radioactive isotope of gold is injected into a dying woman. Sherman remembers the readings on her Geiger counter were off scale. I ask her, as a radiological safety monitor, was she afraid of the impact of radiation on her own body? Minimally, she says, they assured her she was okay. Later, when we are talking about the shipyard workers at the NRDL, she tells me that it is not so much external radiation to be worried about, but the radiation that becomes internal, the alpha and beta particles that are inhaled

In 1955, the NRDL moved into a large, new building, built specifically for the lab, but until then it operated from a smattering of smaller buildings, parts of buildings, and shacks which were leased out, on a temporary basis, by the shipyard. In 1954, when Sherman left the NRDL, the lab occupied twenty-two buildings, dispersed, not unlike fallout, across the entire base, from concrete buildings to irregularly shaped wooden sheds, former barracks, dispensaries, and small storage units. Janette remember taking a freight elevator to her lab, where she could see the workings of the military base from her window. She could see piles of asbestos outside her office window, and later testified for workers seeking compensation for workplace occupational exposure. She remembers experiments with x-rays and thermal burns on rats. It was disgusting, she tells me. Rats, she says, have skin like humans. The technicians would shave the hair off the animals, burn and irradiate them. Janette spent much of her time looking through a microscope at the blood cells. She recalls the stench as terrible. At the archives I read the names of lab experiments from the 1950s: "Analysis of Physiological Changes in the Irradiated Animal During and After Recovery," "Exhaustive Exercise Tests on Rats Exposed to X-Rays in Lethal Dose Range," "Combined Effects of Total Body X Irradiation and Radiant Energy Thermal Burns. III. Osmotic and Mechanical Fragility of the Erythrocyte."

Bruno Latour and Steve Woolgar (1979) explore the construction of scientific facts through an ethnography of social practices in a research laboratory. They show how facts, or a sense of order, are constructed out of the chaos of available perceptions and information in the lab. In their ethnographic account, they consider the material setting of the lab but only in terms of its discrete parts, its instruments and devices. They make the important argument that these tools and technologies themselves were once sources of controversy, that they represent the products of intense scientific debate. Yet the spatiality of the lab, the relations among these parts, is absent in their analysis of the production of

knowledge. In the NRDL's archived files between 1946 and 1955, one of the most frequent concerns recorded by the lab's scientists are of the inadequacies of the laboratory space – the small and crowded facilities, their dispersed geography – and the ways this affected both scientific research and the health of lab workers. Facts and knowledge were constructed at the shipyard not only from the constant chaos of available information or alternative readings, but a chaotic space as well.

The Hunters Point Shipyard was an unusual site for a radiation lab, and from its earliest days the lab's scientists deemed it an undesirable location for their research. In October 1947, the lab's Facilities and Equipment Committee met to discuss long-range plans. The committee reviewed the inadequacies of the current laboratories and concluded that the NRDL should move elsewhere. Vibration from heavy shipyard equipment interfered with delicate scientific instruments, scientists couldn't find spaces remote enough on the working shipyard for "highly dangerous" experiments, and all the buildings and labs were too small. Moreover, they had to pretreat the laboratory air, to cleanse it of the dust from the shipyard's industrial activities. ("Minutes of Meeting of Facilities and Equipment Committee").

Throughout the late 1940s, the NRDL made frequent requests to the shipyard for labor to adjust and modify their laboratories, as it struggled to convert parts of the working shipyard into a radiation lab. During this period, the lab expanded into a former barracks, where the animal colony was housed, and an old mess hall, where the physics department, instrumentation, and supply materials were crowded together. ("US NRDL History 1946-1955".) Memos from the late 1940s and early 1950s frequently mention the need for better facilities. A letter from June 1948 complains that the biological medical research was located in three temporary labs, which were intended for chemistry experiments, and that the biologists did not have enough space to perform their research tasks. Moreover, radioactivity from neighboring chemistry labs "renders the delicate detection incident to biological investigations impossible." ("Request for New Facilities Project for Establishment of Biological-Medical Research Facilities in Building 507"). Many of the shipyard's buildings were leased to the NRDL only on a temporary basis. In agreeing to the temporary use of one barracks unit in June 1948, the shipyard made it clear to the NRDL that "it is further understood that this building is not under any circumstances to be considered for possible permanent use by the laboratory." ("Building 508 Temporary Assignment to Use of Naval Radiological Defense Laboratory")

Space was a constant problem, especially for the fallout samples from nuclear weapons tests arriving from the Marshall Islands and the Nevada Test Site. Until March 1947, these fallout samples, sent to the lab for analysis, were stored in a small building on the northeastern side of the shipyard, on the opposite side of the shipyard from the lab's research facilities. That March, the radioactive isotopes were transferred to a small shack on next to the lab, but again for temporary storage. ("Progress Report for Period Ending 31 March 1947"). According to the lab's "Monthly Progress Report" for April 1947, "The problem of storage of samples, proper security of samples, and sufficient separation of active samples from sensitive research instruments is a very serious problem." Three years later, the storage of radioactive isotopes was still an improvised affair. Lead boxes containing the isotopes continued to be stored in outdoor work shacks. ("Request for Approval to Construct Isotope Storage Building"). This storage system put its workers and others at the shipyard at risk. A memo from 1950 voiced concerns that radiation in the

laboratories in general had risen to an unsafe level, in excess of permissible limits of the time. The memo requests the need for a proper research facility, where all the various scientific activities could be centralized (“Request for Approval to Construct Isotope Storage Building”).

As the lab relocated into other, larger buildings during the early 1950s, the shipyard tore down some of these smaller structures, like as the work shacks where the lab’s radioactive isotopes had earlier been stored. On the map of the current Navy’s *Historical Radiological Assessment*, completed in 2004, the shapes of these torn-down buildings are rendered as dotted lines, as sketches, presencing their absence. At Restoration Advisory Board (RAB) meetings on the hazardous remediation work at the shipyard today, Hunter Point residents want to know what happened to the remains of those buildings, but this is one record the Navy seems not to have kept. The absent buildings suggest their presence elsewhere, as scraps of wood and steel in the shipyard’s landfills or recycled as parts of other buildings, and haunt Hunters Point residents who can see the military base from their homes.

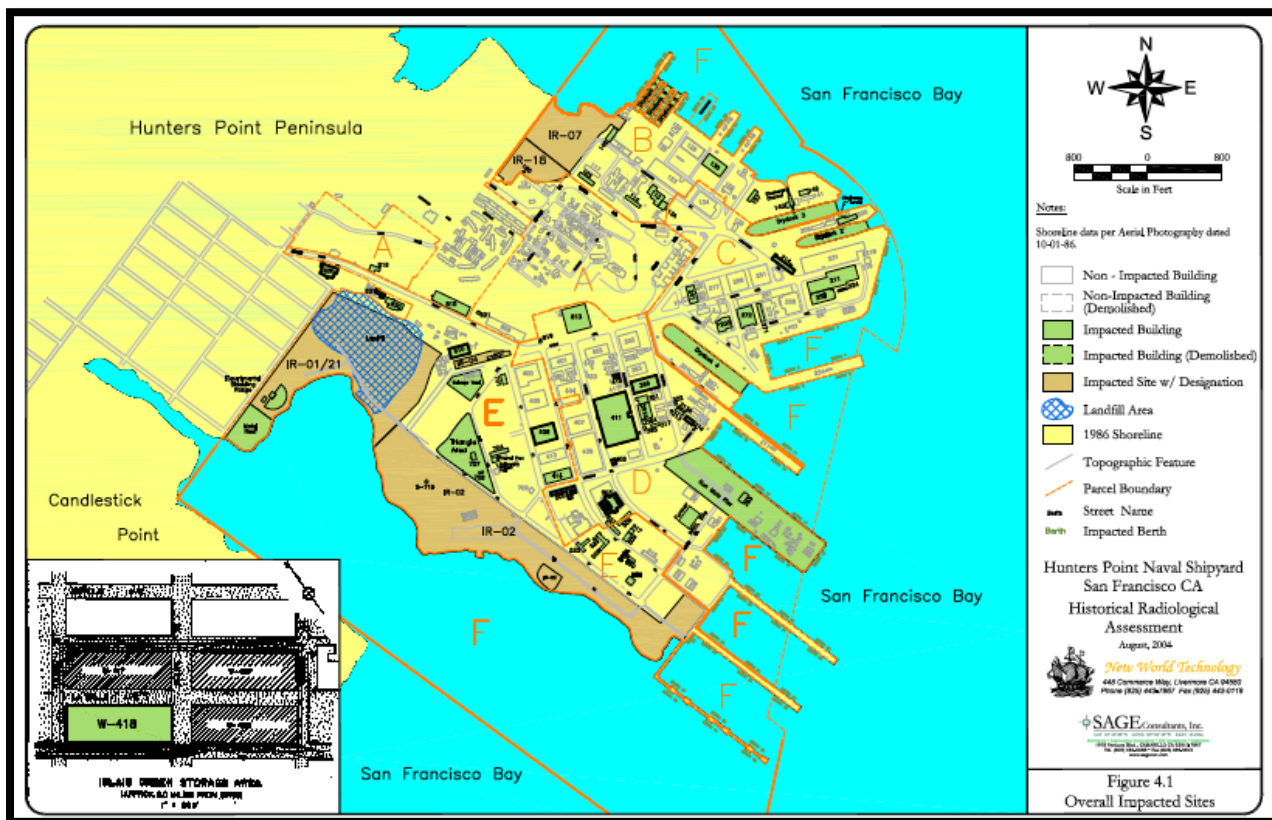


Image 15. “Final Radiological Assessment: History and Use of General Radioactive Materials, 1939-2003”, Hunters Point Shipyard. Buildings used by the NRDL are outlined in the thick black lines (US Navy, 2004).

Archive Fevers

During one of my first days at the San Francisco archives I call up the NRDL's laboratory notebooks, curious and excited about what I might find. My heightened anticipation could be considered a form of "archive fever." In *Mal d'archive: une impression freudienne*, (later translated into English as "Archive Fever"), Derrida critiques the work of formal, academic history as a desire for origin stories and foundational truths. Here, the sickness of the archive, its "fever", comes from its relationship to power – both the violence of state power and the epistemic violence of a particular way of writing History (Steedman 2002). Yet Derrida refers to the archive primarily in the analytical sense – as a form or means of state power – and not to the physical space of the archives itself. In her ethnography of the colonial archive, Ann Laura Stoler (2009) notes that Derrida's intervention was presented in a broader intellectual moment of taking the archives not simply "as source" but "as subject".

Stoler develops an analytical approach to colonial archives, of reading "along the grain" of empire and imperial history (as opposed to the critical approach of reading "against the grain," or from "the bottom up"), in attending to the doubts, insecurities, and inconsistencies of empire as a way of revealing the instability of power. Stoler conjures a phenomenological experience with the "grain" of history, writing of the slight indentation of colonial "watermarks," the "pulse of the archives," and the "feel of documents," but these too in the end are analytical categories – she is not writing about the *matter* of the archival papers, of the tactile relationship between archivist and archive, of researcher and file, in a physiological sense.

In *Dust: The Archive and Cultural History* (2002), Carolyn Steedman begins her short meditation on the work of historians and the writing of history in the form of a joke – by taking Derrida at his word. Real Archive Fever, or Archive Fever Proper, as she terms it, is a problem not of cultural studies or state power but of epidemiology. The material components of the book – its leather bindings, glues, and paper – brought together many of the industrial hazards of the nineteenth century, hazards which typically caused diseases through skin contact and inhalation – through dust. An 1833 medical textbook observes "The Diseases of Artisans," such as with paper makers, included "the mechanical irritation of the molculae, or fine powders" (p. 22). Books crumble and disintegrate, remembering, as Tim Edensor (2005) writes of objects in decay, the labor and materials of their making. As they are handled they give rise to dust, which enters the social space of the archival room, perhaps ingested by the dreamy social historian herself.

For Steedman, "dust" is ultimately *about* a way of imagining and writing history (as a way of seeing) rejecting the desire for origins, embracing "circularity, the impossibility of things disappearing, or going away, or being gone" (p. 164). She also writes against the ways memory and history are assumed to be located in the space of the archives, there for the taking, the excavation. Archive Fever Proper as a physiological process is a prop, a set-up – the physical dust inhaled in fact represents the ideal of the social historian to "take in" the lives of the past and resurrect their memories, the hope of being "able to speak on behalf of the dead" (p. 38). Steedman is not actually reframing this historical method as a medical problem. Yet the archives Steedman writes about are of the bureaucratic state – she describes the historian hunched over a long list of names, of tax rates, of court cases, perhaps ingesting the "red rot" of old leather bindings. What of the type-written pages and

hand-written, graph-lined notebooks from a mid-twentieth century radiological laboratory, once situated on an active, dusty shipyard, which was the “staging grounds” for a regime of nuclear weapons tests?

In 1993, at the Chicago branch of the National Archives, old Albert Wattenberg, searching through boxes of files from Enrico Fermi’s lab from the Argonne National Laboratory, near Chicago, found eight-inch, heavy metal object that was, as it turned out, a rod of uranium (Anderson 1993). Young Albert Wattenberg had studied with Fermi, first in New York with the Manhattan Project, and later at his lab at Argonne. As an archivist from Chicago recounted to me in an email, 1,504 of Fermi’s notebooks were sent back to Argonne for decontamination. Radioactive particulates were found adhering to one-third of their 20,000 pages (Scott Forsythe, pers. comm., 2010). As Wattenberg later told a writer for *Science* magazine, covering the event, it was not uncommon for nuclear scientists to handle radioactive materials, and radioactive dust from their hands might then be transferred onto their labbooks (Anderson 1994). I discover this story later, after nervously joking to the archivist in San Francisco that the lab’s notebooks might themselves be radioactive. He tells me about a rumor of uranium found in the archives in Chicago, and I email the Chicago branch that evening, receiving an email confirming the rumor a few days later. Still, that day in the archive reading room in San Francisco, my excitement is closer to what Steedman calls the “Archival Romance,” the dream of the social historian “to enter that place where the past lives, where ink on parchment can be made to *speak*” (Steedman 2002: 72).

I open the first box of notebooks, gently handling the tired cardboard, and the old bindings stare up at me. They are burgundy and black, with gold trim, too regal for lab books by today’s standards. I pick one up and open it, hesitantly, and begin to flip through its pages. In one sense the book is like the “routinely dull” science observed by Latour and Woolgar – the graph-lined pages are full of numbers, and my eyes glaze over lists I cannot decipher. At the same time, it is the *feel* and the *physicality* of the documents that shatters my Romance – the worn edges of the paper, the pencil lines smudged and erased, the stained pages – transporting me to the physical space of the lab itself, and the social and material relations of its science. Jake Kosek (2006) writes, “[i]n the case of toxic waste, objects become haunted by the movement of radiation into material object, changing their meanings, personalities, and relationships to subjects based on their new meanings” (p. 259). That day, I could not know whether radiation resided in the notebook’s pages, but their physicality produced a complex affect. They reached like ghosts into a nuclearized, Cold War past and, as I feared, perhaps into my body’s cellular structures and my own future. “Haunting occurs when the boundaries between subjects and objects are broken,” Kosek writes, “when the past and sometimes the future occupy the present” (2006: 259).

In *Along the Archival Grain*, Stoler writes that the “documents in these colonial archives were not dead matter once the moment of their making had passed” (Stoler 2009: 3). She means that the story is not yet settled, that the documents can be re-read, re-categorized, used to “write new histories.” In the NRDL’s files I am looking for a history of labor relations – between scientists and shipyard laborers, and between those laborers and physical sources of radiation – thinking of what Masco (2006) wrote in *The Nuclear Borderlands*, that “to approach nuclear technologies from the quotidian perspectives of tactile experience...an individual relationship with a national-cultural infrastructure, is to fundamentally rewrite the history of the nuclear age” (4). Sitting with the NRDL’s

notebooks, the “nuclear age” becomes intensely experiential, my own, intimate, phenomenological connection with the radiation lab, and I experience the reverse of the desire to *possess* or *inhale* the “archive,” (as history) and instead to push it away, to leave the physical objects and go home: this my own “archive fever.”

Troubled by the story of the Fermi’s files in Chicago and two vague emails (one from the Chicago archivist and another from a health physicist at Argonne involved in the notebook decontamination process) and perhaps inspired by the lab itself, which developed technologies for measuring radiation, I borrow a Geiger counter from the Geology Department at UC Berkeley. The Geiger counter has a heavy, rectangular body attached to what looks like a microphone. When pointed at a source of radiation it begins to click wildly. In my mind it also looks like a miniature version of the backpacks worn by the Ghostbusters, a popular movie during my childhood. I bring the Geiger counter to the archives the next day and point the microphone at the notebooks, as if I am asking them, or the matter on their pages, to speak. I go through several boxes with both relief and a tiny bit of disappointment that my little “ghostbuster” is silent. No ghostly matter resides in these pages, at least none detectable by the machine. Still, the silence, to my mind, is not necessarily an absence. In the following weeks, I return to the type-written pages of the NRDL’s “General Correspondence”, more likely to be typed by secretaries, less likely to have been near the radiation experiments themselves.

Absent Presences

In the aftermath of Operation Crossroads, the Navy struggled with the historically new problem of how to decontaminate a radioactive warship. Did a hand-blown torch remove radiation from the ship’s external paint, “Outside War Grey”? Could an acid solution that flushed through the salt water system on warship for seven hours clean out its inner tubes and tunnels? At a hastily convened conference in San Francisco, while decontamination continued apace in Kwajalein, the Navy ordered the NRDL to initiate studies of radiological decontamination on the USS Rockbridge. The Rockbridge was considered to be the most radioactive ship that had returned to San Francisco at the time (Defense Nuclear Agency 1984).

The NRDL’s files between 1946 and 1949 meticulously detail experiments on the Rockbridge and other radioactive ships from Bikini, docked at Hunters Point. The precision with which these experiments were recorded is at odds with my imagination of the laborious work involved. When reading, I hold the thin, ageing papers gently – they feel vulnerable in my hands. They also smell funny, and the images of radiation experiments they conjure in my mind frightens me. This experience of unwelcome proximity with the NRDL’s papers heightens my awareness of the proximities between radiation and the lab’s workers I am reading about. I read that on October 4, 1946, NRDL scientists selected an area on the port side of the hull of the Rockbridge, “previously determined as representative of the worst condition available”, to test the degree to which scraping of the marine life and layers of grey war paint by hand could remove radiation. Square sections along the side of the ship were marked and monitored for beta and gamma radiation, then scraped by hand and monitored again. The area was again scraped more vigorously, a second time, again by hand, to remove deeper layers of contamination, which adhered to the heavy rust and

marine growth on the ship. After collecting this data, the entire 545 square foot hull of the Rockbridge was sandblasted, with more readings and samples taken to assess residual radiation. Suction blowers were placed next to workers to collect the large amounts of dust produced by sandblasting, for later laboratory analysis (“Monitor’s Report of Experimental Sand Blasting of Hull – USS Rockbridge”).

On the morning of October 15, 1946, the lab staged an experimental decontamination of the salt water system on the USS Rockbridge. A 500-gallon tank full of a muriatic acid solution was connected to the ship’s fire and flushing pumps. The crew worked the length of the ship, opening outlets to start the flow of acid. According to the “Report on Procedure Used in Decontaminating Salt Water System of the USS ROCKBRIDGE”, they wore rescue-breathing apparatuses “to prevent their being overcome by fumes”.

Experimental decontamination at Hunters Point continued through the late 1940s on other radioactive vessels from Operation Crossroads. On May 10, 1947, scientists targeted the bulkhead of the USS Crittenden. Various surfaces of the ship were scrubbed with an acid solution for 18 minutes. The scientist concluded that the acid solution decreased radiation but did not remove it entirely. This particular method worked best on rusted covered surfaces, but was less effective with paint. It recommended that for “the best results, the surface should be scrubbed vigorously as much as practical with a stiff brush” (“U.S.S. Crittenden Experimental Decontamination”). In another experiment on May 27, 1947, another area of the bulkhead was measured out into square sections, as with the Rockbridge. Workers used a hand-blown torch to remove radioactive surface paint, and then scraped the remaining pain by hand. In one of the few places the experience of human labor is openly discussed in these reports, the report notes that this “process was extremely laborious and time consuming” (“Experimental Decontamination, U.S.S. Crittenden”).

In 1949, a screenwriter from the Navy Motion Picture Office in Hollywood visited the NRDL for technical help in writing “The Radiac Story.” RADIAC, an acronym for “Radio Activity Detection and Identification and Computation” was a set of technologies and practices that emerged in the late 1940s to assess the conditions of ships, personnel, and other materials contaminated during nuclear testing in the Pacific. It developed as a field of knowledge and practice in itself: naval officers took RADIAC courses at radiological defense training schools that operated at places like Treasure Island, in the San Francisco Bay.

The Navy Motion Picture office script took much longer to write than expected, and the film was one-third longer than planned, in part due to research and writing problems that the writer detailed in a letter to the NRDL, requesting their comments on his screenplay. The Radiac Story, he writes, “was not as simple and uncomplicated as it first appeared” (“Research and Writing Problems”).

In his research for the film, the writer sought out multiple perspectives on working with radiation equipment at the shipyard. Part of what complicated the story were the competing viewpoints between repair and service men working with the Radiac equipment, on the one hand, and the lead technical adviser in charge of radio shore installations, on the other. As the screen writer explained to the NRDL:

The repair and service men in Radiac Shop 67 who are essentially the sort of people for whom the pictures are designed, are more concerned with the

mechanical and practical aspects of Radiac. For example, it was obvious to them that some of the instruments failed to live up to the manufacturers' claims for them and often the Radiological Laboratory's explanations concerning the scientific reason for these shortcomings did not jibe with their own knowledge of the instruments.

For that reason, the screenwriter observes:

They were sometimes dubious about the engineering, and particularly the scientific viewpoints... they were inclined to doubt anything that could not be proved in their work.

Scientists from the radiological laboratory, on the other hand, "are not particularly concerned with practical considerations and often disagree among themselves."

The screenwriter's letter offers a glimpse into the multiple experiences with radiation testing at the shipyard, suggesting an entirely different history of radiation science and nuclear testing that might be written from the perspective of workers and lab technicians, like Janette Sherman. As the "purely scientific" viewpoint is overwhelmingly recorded in the NRDL's papers today, writing about these historical experiences with radiation sciences requires a close search for the scattered traces of their work.

Bodies of Data

The NRDL's research agenda involved monitoring its staff, both for their own safety and to accumulate information about radiation exposure for broader scientific purposes. A February 6, 1947 memo details the various research programs for the new laboratory, which included "physiological studies of inhalation, ingestion and absorption specifically related to the contaminated environment...of a radiological nature", specifically of dust, and "studies of over-exposure." As laboratory and shipyard personnel engaged in the work of decontamination, their bodies also "worked" for scientific and medical studies of radiation. On the basis of clinical records and observations of personnel in regular contact with "ex-target vessels" the lab hoped to develop and improve procedure and methods of diagnosing and analyzing exposure. In one of the proposals for "Topics for Investigation by Radiation Laboratory" (the earlier name for the NRDL), from February 6, 1947, the lab's scientific director, William Sullivan, suggests that the lab, "on the basis of clinical records and observation of personnel in regular contact with ex-target vessels and elaboration thereof, develop and improve diagnostic procedures and field analysis methods of exposure".

Eventually, the NRDL also participated in broader scientific research programs that relied on Marshallese bodies exposed during U.S. nuclear testing, part of the new social relations between the U.S. and Marshall Islanders forged through nuclear weapons testing. On March 1, 1954, the U.S. detonated a thermonuclear bomb, called Shot Bravo, which exploded at two and a half times its anticipated force, contaminating 50,000 square miles in the Pacific Ocean with "serious to lethal levels of radioactivity" (Masco 2006, 295). Two

hundred and twenty-three indigenous Marshall Islanders and twenty-three members of a Japanese fishing boat were among those exposed to the fallout. In the aftermath of the Bravo detonation, the NRDL worked with other radiation labs on an analysis of the effects radiation on human beings exposed to fallout, what began as “Project 4.1” and became known as the Bravo Medical Program (Harkewicz 2010). They also conducted analytical research on the effects of radiation on the physical environment of the region. One document from May 1954 lists “samples representing the physical environment of Rongelap and Utirik”, two atolls west of Bikini, and the areas most severely affected by radiation. The samples sent to Hunters Point from Rongelap on April 3, 1954, included soil, cistern water, 2 papayas, 3 coconuts, grass, and “hair (from natives)” (“Summary of all work completed on Project 4.1 as of May 7, 1954”).

~~SECRET - RESTRICTED DATA~~

Samples representing the physical environment of Rongelap and Utirik were received 3, 8 and 29 April and are tabulated in Table I.

Table I

Samples Received from Rongelap and Utirik

<u>April 3</u> (Rongelap)	<u>April 8</u> (Rongelap)	<u>April 29</u> (Rongelap)	<u>April 29</u> (Utirik)
hair (from natives)	pandanus (1)	grass	grass
grass	soil (2)	water (well)	water (well)
thatch	water (cistern)	water(cistern)	water (cistern)
Coconuts (3)		pandanus (2)	pandanus (1)
pandanus (2)		coconuts (2)	coconuts (2)
papaya (2)		coconut tree	coconut tree
		sap (3)	sap (3)
soil		arrowroot	arrowroot
water (cistern)		papaya	papaya
		soil (surface)	soil (surface)
		soil (6" deep)	breadfruit
		squash (1)	

Image 16. Samples sent to the NRDL from Rongelap and Utirik (“Weekly Progress Report on Analysis of Samples from Project 4.1 for week ending 30 April 1954”)

Mediated through the lens of a microscope and other visualizing technologies, NRDL scientists might have lost sight of this relationship. In *People of the Bomb: Portraits of America’s Nuclear Complex*, Hugh Gusterson (2004) reflects on the “disappearing body” in war. He notes that after the bombs dropped on Hiroshima and Nagasaki, the U.S. sought to confiscate photography and censor news reports that might reveal to the world the immense human pain it had just inflicted on the Japanese people. At the same time, U.S. scientists traveled to Hiroshima and Nagasaki to conduct biological research on the people who were then suffering. Writes Gusterson of the ways human and animal pain has been occluded through the visual technologies of science, “[s]cientists have methodically

metamorphosed the mutilated and suffering bodies of these people and animals into tiny bodies of data used in myriad strategic calculations, for example, to help determine the efficiency of radiation and other nuclear weapons” (2004, 69).

Heavy Waters

Other military bases and laboratories in the San Francisco Bay Area sent their radioactive waste to the NRDL at the Hunters Point Shipyard, which became a center for waste disposal in the area. One typical work order from 1954, from the Naval Supply Center across the Bay in Oakland, requests the NRDL oversee the following: *“Unload approximately 40 tons of radioactive waste from NSC, Oakland Barge. Repack and weight approximately 20 tons of waste so that it is sinkable. Reload above materials on disposal barges, to be dumped at sea.”* (“US Naval Supply Center to US Naval Radiological Defense Laboratory”). Most of these waste-filled drums were taken out near the Farrallon Islands, which are 26 miles off the coast of the San Francisco Bay Area (U.S. Navy 2004). Federal permits at the time specified that rad-waste filled drums could be dropped at sea, at a minimum of 6,000 feet of water. In 1977, a professional diver found disintegrating 55-gallon drums resting 25 miles west of the Golden Gate Bridge, at 160 feet. In a *Los Angeles Times* article from 1980, the diver recalled finding “pieces of rubber gloves, booties, surgical-type things and blobs of grease as big as a soccer ball,” around the drums, cracked open on the ocean floor. The article notes that the EPA, in 1980, estimated that 25 percent of those drums broke due to water pressure before reaching the ocean floor.

In the NRDL’s files, I look for bodies of the lab’s waste workers, thinking about the way Tim Edensor (2005) writes about the experience of walking through industrial ruins: “These objects and obscure signs, labels, and traces are largely inarticulate in that they suggest multitudes of scenarios but only offer possibilities to surmise, to assemble conjectural memories, things we half know or have heard about somewhere but are just beyond grasp” (329). I find traces of the workers in descriptions of the work, but the workers themselves lack names and attached beta and gamma radiation numbers, like the list of lab personnel. Instead, I find them scattered throughout, vague and suggestive in their outlines. Work contracts with the shipyard for dead animal disposal services are found under the folder titled “requisitions,” not the one titled, “personnel.” One work contract requests services for the *“disposal of dead laboratory animals for the period 1 September through 30 June 1955, to consist of picking up approximately 8 full containers twice a week at various USNRDL buildings, and to include cleaning and sterilization of Government owned containers.”* (“Request for Animal Requisitions”). Requests for waste disposal services are found in the folder labeled “excess,” among other reports detailing the transfer of excess objects – typewriters, chairs, isotopes – among the Bay Area military installations.

Sometimes workers surface as matters of concern, during a crisis. In February 1954, the NRDL wrote to Berkeley’s Radiation Laboratory, detailing how twenty-nine drums filled with radioactive waste from the Berkeley lab had accidentally fallen into the bay, during the routine process of loading the disposal barges. According to a letter from the NRDL to the Radiation Laboratory in Berkeley, all of the drums were salvaged from the depths of the ocean, but “not without a certain degree of difficulty, and unacceptable hazard to the safety of personnel, due to the weights involved.” (“Letter to Mr. Ray O’Day”) I

imagined divers in the cold, choppy bay waters, struggling to lug to the surface steel drums, filled with concrete so that they would sink – not meant for carrying back up to the surface. Like the objects Edensor encounters, the absent presences of workers are “ghostly, enigmatic traces that remain invite us to fill in the blanks” (2005: 330).

Today, the Pacific Ocean is heavy with ships sunk after nuclear weapons tests and steel drums of radioactive waste. Writing about the Atlantic Ocean, Elizabeth DeLoughrey (2010) counters the notion of the sea as an empty, fluid space, with the image of “heavy waters”. She writes of the Atlantic, weighed down with the bodies of African slaves and today with barrels of radioactive contamination, from U.S. and European nuclear weapons testing. DeLoughrey examines how in modern literature, the ocean is feminized, an empty space upon which history – in the form of trade, adventure, conquest – takes place. DeLoughrey’s notion of *heavy* waters challenges the notion of the ocean as a constantly moving, with its image of stasis and substance, rendering “space into place as a way to memorialize histories of violence and rupture notions of progress” (704).

Ann Laura Stoler’s guiding metaphor for her ethnographic approach to Indonesia’s colonial archives is “reading along the grain”. Attending to the recorded anxieties of colonial officials, she reveals the precarities of colonial rule. My own metaphor for reading the papers from a radiation lab in search of the social relations of military nuclearism also emphasizes the tactile sensorium and affective register, but in a way that includes my own body. The multiple senses engaged in my experience of reading the NRDL’s papers tells me about vulnerabilities of my body, and reminds me of the vulnerabilities of others. It also draws me towards descriptions of physical labor I read about on the pages in front of me, and provides of form of “sensory knowledge” (Marx 1974, Gordon 1998) of my relationship with the histories I seek to write. My guiding (and perhaps cheesy, no pun intended) analytical catchphrase for this chapter is therefore of the “smell of the grain”, or more accurately, the “smell of the dust”, since my olfactory experience in the archives registered a particular connection the NRDL, through my own inhalation (seeking to emphasize senses beyond sight and seeing). My “read” is inseparable from the physical feel of the pages in my hands and the scratchiness in my nose, and also of my own feelings.

* * * * *

This chapter speaks to the broader conceptual themes of this dissertation in at least three ways. First, I show how Rob Nixon’s concept of slow violence is one way of analyzing the social relations of industrial waste, of linking people across space and time. Along with radiation, many other toxic byproducts at the shipyard move through the environment invisibly, and persistent across generations.

Secondly, I show how decontamination of ships involved in Operation Crossroads contributed to the environmental disaster at the Hunters Point Shipyard today, requiring a second decontamination project in the form of the Navy’s brownfield remediation work, which I explored in an earlier chapter in this dissertation. The polluted shipyard today has similarly become a landscape of opportunity for environmental engineering firms and real estate companies. Today, many Hunters Point residents, with few job opportunities, constitute one pool of surplus labor willing to do the hazardous work of remediation. In both cases, the slippage between disaster and opportunity (and to whom the shipyard

represents a disaster, and to whom an opportunity) mitigates a fuller understanding of the lived experience of radiation and industrial pollution.

Lastly, in seeking to understand some of situated knowledges of nuclear science at the NRDL, I tried to maintain an ethnographic approach to archival research that encompassed my own body's encounter with the radiation lab. For me, this experience was overwhelmingly of dust – usually invisible to my eyes, but haunting me through its smell – heightening my own fears of radionuclides possibly residing in the lab's old cardboard boxes. As Avery Gordon writes, “haunting is a shared structure of feeling, a shared possession, a specific type of sociality... a sociality both tangible and tactile, as well as ephemeral and imaginary” (p. 201). Like “slow violence”, these dusty hauntings pose particular problem of recognition, calling for alternative analytical approaches and an ethically-oriented imagination.

¹ At the Nevada Test Site, sixty-miles northwest of Las Vegas, the Atomic Energy Commission (AEC) and its supporting national labs detonated 100 nuclear bombs above ground between 1951 and 1963. For the AEC and the military, both desert and island spaces served as outdoor laboratories where scientists could “prove” theoretical advances in weapons technology.

² On the U.S. Department of Justice website, I read “The Act presents an apology and monetary compensation to individuals who contracted certain cancers and other serious diseases” to uranium miners during Cold War and to workers exposed to atmospheric (or above-ground) nuclear weapons during 1945 to 1962.

³ On December 8, 1953, President Eisenhower gave a speech to the United Nations, which was titled, “Atomic Power for Peace”, and emphasized the beneficial uses of atomic energy, although in the context of an increasing stockpile of U.S. nuclear weapons. In 1954 Eisenhower amended the original 1946 Atomic Energy Act to encourage private development of atomic power (Mazuzan and Walker 1984).

⁴ After leaving Hunters Point, the boxes were stored at Naval Station Treasure Island. Like the Hunters Point Shipyard, Treasure Island is undergoing environmental remediation in anticipation of an ecotopic redevelopment process. In the past few years, investigative journalists and whistleblowers from environmental engineering companies hired by the Navy have revealed that the extent of radiation on the island is much greater than the Navy initially stated on its 2004 Historical Radiological Assessment (HRA). The Navy updated the HRA in 2012, but it is likely that more information about the uses and extent of radiation on the island will be revealed in the coming years (see Dillon forthcoming).

Chapter 5 – Urban Produce: Environmental Security and A Right to the (Garden) City of Tomorrow

In February 2011, I visited Anika at her offices in Double Rock public housing development in Hunters Point. Double Rock lies west of the Hunters Point Shipyard, across a body of water called South Basin and Yosemite Slough. The houses were built originally for military families, and *The Spokesman* had identified their dilapidated state in the 1960s as an example of racialized neglect by the San Francisco Housing Authority. Anika is the director of Hunters Point Family, a non-profit that began in the 1990s as an afterschool program for middle school girls. Today she runs the organization and its multiple programs from a bright-orange painted trailer in the Double Rock development. Her office is surrounded by potted plants, and it looks out over the water. Next to Anika's building is the Double Rock "Opportunity Center" – also bright-orange – a visible reminder that old housing units will soon be torn down and replaced with a larger mixed-income development, funded by Lennar, the developer of the shipyard. I interviewed Anika twice, both on a weekday, in the early months of 2013, and each time I visited, the Opportunity Center appeared empty.

On my most recent visit, she told me about the rats. "They were this big," she emphasized with her hands, as she described the process of clearing out the acre and a half patch of land next to her building in 2004 with a young man who had grown up in Double Rock. Together they cleared out piles of construction debris (which had been illegally dumped, usually at night), cut down thick weeds, and broke up soil, as Anika described to me, "so hard it was like concrete". The garden, first seeded in 1995 by the San Francisco League of Urban Gardeners (SLUG), had been left unmanaged after the city canceled its contracts with the gardening organization in 2004. It did not take long for construction companies to begin using the lot as a junkyard. Today the garden is full of raised beds and fruit trees, and a new vine-covered gazebo in the far corner of the site has clear views across the bay. The urban agriculture program of Hunters Point Family includes two other gardens, at the Adam Rogers Park on Hunters Point hill (also a former SLUG garden) and a small reclaimed lot on a busy plaza on Third Street, near the Bayview Opera House, called Bayview Roots Community Garden.

Hunters Point Family is not primarily a gardening organization – its programming focuses on youth development and violence prevention. The Double Rock garden is run along with a broader violence prevention program targetting 12 to 21 year-olds in that public housing development. The program seeks to prevent violence through case management, tutoring, career mentoring, "life skills" training, and garden work, including

income earned through gardening. That day I interviewed Anika about the garden's role in the lives of the teenagers she work with. "The kids say they've found peace in the garden", Anika told me, "they say it's a haven, a heaven."¹ I asked Anika, what was the opposite of that peace? She leaned back in her chair and paused. "Someone's shooting at you", she said. Behind her hung a large dream catcher and a poster of the Hunters Point rap group, "Bread Me Out", which Anika's group helped fund and support in the early 2000s. She leaned forward again. "Did you see the children's faces painted on the wall outside? People get shot here all the time."

In this chapter I examine two garden projects in Bayview and Hunters Point – the Quesada Gardens Initiative (QGI) and the gardens of Hunters Point Family. While both garden projects grow food, for neither organization is food their primary garden product. Rather, for both, gardening is a transformative practice, through which both groups seek, in different ways, to effect changes in people's live in the southeast. Through gardening, both organizations seek to cultivate hope and opportunity in the context of the many changes restructuring space and society in Bayview-Hunters Point today, including the powerful roles of city and state agencies and outside financial interests.

I begin this chapter by situating today's gardens historically, showing how they can be understood as a new moment in the history of gardening in U.S. cities. I then take a short detour and show how the long history of urban gardens in Bayview-Hunters Point – as urban practices by former rural southerners – also challenges the dominant, episodic history of gardens in the U.S. Quesada Gardens Initiative and the gardens of Hunters Point Family should be considered to have roots in both urban histories.

I then discuss the Quesada Gardens Initiative (QGI), which seeks to convert weedy, vacant public lots into gardens and other public spaces. QGI's gardeners began planting flowers and vegetables on a trash-filled median strip in the early 2000s. At the time, the block had been frequented by drug users and sellers, and Quesada residents described, in interviews with me, feeling unsafe outside of their homes. In this sense, the gardeners exercised a "right to the city" (Mitchell 1996) by making claims about the social use of space – a critique that also included the city's neglect of the street. During the 2000s, the group, initially brought together through planting on the median strip, also began making calls to city attorneys and the police, to patrol their block more often. The median strip-garden is located just off Third Street, and residents of this block of Quesada Street have watched neighborhood changes, including a light-rail line and new condominium buildings, over the past ten years. In the context of these corporate and city agency-driven infrastructure and social changes, QGI represents one way residents hope to transform their neighborhood, as a meaningful, grassroots process, and exercise some control over the area's future.

The garden projects of Hunters Point Family are very different, in the sense that they target young adults, rather than vacant lots, and seek to produce economic opportunities, rather than a sense of neighborliness or connection among households. The gardens were also designed as part of a larger strategy of violence prevention in the neighborhood, and they provide jobs and skills training to Hunters Point teenagers, or some economic security. In this chapter, I trace the "roots" of Hunters Point Family to SLUG's Youth Development program in the mid-1990s, which emerged in the context the rollback of the welfare state. In the context of high rates of unemployment, poverty, and violence in Bayview-Hunters Point, the gardens have represented safety, hope and some

economic opportunity. The broader issue of this chapter, as with the dissertation, address the contemporary practices of redeveloping the post-industrial city – in this chapter I focus specifically on the ways these two grassroots gardening groups address the toxic legacies of the entangled processes of race, waste, and space.

Cultivating the (Post-)Industrial City

In 2011, San Francisco passed an urban agricultural ordinance, amending the city's planning code to enable more commercial food production on urban lots. Prior to the new ordinance, a zoning restriction required a costly permit and hearing process in order to convert unused urban land into gardens. In changing the planning code, the city acknowledged a growing urban agriculture movement and a new development strategy increasingly adopted by cities across the country. Industrial "rustbelt" cities like Detroit, Flint, Milwaukee, and Cleveland have also amended zoning codes to enable more for-profit agriculture (Whitford 2009, Herzog 2011, Colasanti et al 2012). According to the Cleveland-Cuyahoga County Food Policy Coalition (2013), "Urban agriculture is being viewed as a potential answer to the perplexing excess of vacant land, after the city's population declined 50 percent in 50 years." The solution here is not "community" (i.e. civic, volunteer-based) gardening, but specifically for-profit agriculture, through which Cleveland also hopes to "plant new jobs for the city's future" (Larkin 2010). In the late nineteenth century, in the context growing class tensions in newly industrializing cities, Ebenezer Howard imagined the "garden city," as the "city of tomorrow" (Howard 1902). Howard's model city mapped a ring of residential, single-family homes surrounding an industrial urban core. By the late twentieth century in many cities across the U.S., this industrial core (if not geographically "center," certainly once economically central) had largely disappeared. In contrast to Ebenezer Howard's late nineteenth century "garden city" imaginary, today a new urban imaginary locates gardens squarely in the heart of the old industrial city – a landscape of food production replacing an earlier landscape of manufacturing and industrial production (Smit and Nasr 1992, Kaufman and Bailkey 2000, Schilling and Logan 2008, EPA 2011, Voigt 201, Colasanti et al 2012).

The economic value of farming postindustrial urban wastelands is recognized by the Hantz Group (parent corporation to its subsidiary Hantz companies, mostly financial and tech services) in Detroit. Controversial projects like its recently formed subsidiary, Hantz Farms, imagines a landscape of for-profit urban agrarian capitalism replacing the once-industrial city's ruins. In December 2012, the City of Detroit approved the sale of 140 acres of unused land (totaling 1,500 city lots) to the Hantz Group, which intends to plant 15,000 "high-value" hardwood trees – a productive forest replacing an abandoned urban landscape, which had become more costly to the city to maintain than it gained back in tax revenues (Dolan 2012, MacMillan 2012). According to its website, Hantz Farms' "products" also includes a consulting service "that assists leaders in expanding and improving urban agriculture as a new commercial sector within urban economies," participating in an emerging discourse in which "the urban" does not represent the opposite of the countryside, and agriculture is materially and discursively intergrated as part of the urban infrastructure (McClintock 2011). Others Detroit residents have called

the sale a “land grab” and argued that the lots should have been given to a public trust, held in common (Hullet 2012).

The popularity and widespread practice of cultivating the industrial city is also indicated by the EPA report, “Brownfields and Urban Agriculture: Guidelines for Safe Gardening Practices,” released in 2011. The report explains common contaminants associated with different industrial land uses and provides instruction in basic environmental remediation techniques, prior to growing plants. At a former car wash or parking lot, for example, the EPA warns that a prospective gardener might expect to encounter metals, polycyclic aromatic hydrocarbons, petroleum products, sodium, solvents, and surfactants (EPA 2011). The report includes tips on managing toxic risk while growing food on industrialized land. Yet its instruction to “take care not to track dirt from the garden into the house,” also suggests the persistence of industrial waste in the twenty-first century garden “city of tomorrow”.

The San Francisco Planning Department, Hantz Woodlands (the tree-growing enterprise of Hantz Farms Detroit), and the Cleveland-Cuyahoga Food Policy Council all participate in a contemporary discourse of urban agriculture, in which gardens offer not simply a solution to particular crises in the industrial city, but are imagined to have a permanent place in a “sustainable” urban futures. This discourse also signals a new moment in the history of urban gardening in the U.S., and in U.S. urban history more generally, as industrial areas of the city are redevelopment and reused. Rebecca Solnit (2012) writes skeptically of the idea of urban gardening as a revolutionary movement, as it is often portrayed, but still acknowledges that, “We are in an era when gardens are front and center for hopes and dreams of a better world or just a better neighborhood, or the fertile space where the two become one.” Here she suggests the multiple, in some cases competing urban imaginaries which motivate urban agriculture projects today. I suggest that Quesada Gardens Initiative and Hunters Point Family seek to grow opportunity and exercise control over a difficult and changing urban environment.

In the following section I examine some of the ways urban gardens have historically functioned in U.S. cities. This history has generally been told as a series of distinct urban gardening movements responding to economic and social crises (Bassett 1979, 1981, Lawson 2006, Pudup 2008). Through this historical view, I emphasize how gardens have worked as improvement projects, targeting urban wastelands, and seeking to cultivate particular habits and dispositions. I also suggest that the history of urban gardening in Bayview-Hunters Point during the post-World War II years, by black migrants from southern, rural states, disrupts this dominant history of urban gardening. I then explore Quesada Gardens Initiative and Hunters Point Family in the context of the historical geography of Bayview-Hunters Point and contemporary social and physical changes in the area, showing the different ways they seek to create opportunities in the neighborhood today.

Improving Urban Wastelands Through Gardens

In 1984, the San Francisco League of Urban Gardener’s (SLUG) newsletter, “The Urban Gardener” ran a short article titled “How to Start Your Own Community Garden”². Newly formed in 1981, SLUG grew out of an older gardening program in San Francisco

which had operated from 1973 to 1979 and was funded by the Comprehensive Employment and Training Act of 1973 (CETA) (Lawson 2005). Signed into law by President Nixon, whose “New Federalism” legislation replaced Lyndon Johnson’s “Great Society”, CETA represented a reworking of New Deal-era employment programs, which had provided federal funds to pay unemployed people to work on public projects (Mirengood and Ridler 1976). By shifting some of this responsibility to local governments, through revenue-sharing, CETA represented a move away from Great Society liberalism and toward a neo-liberal social policy regime. This included moving away from the notion of federal state responsibility for unemployment which was, in the 1970s, a growing urban condition³. In 1979, when CETA funds were cut, the San Francisco garden program employed 35 garden coordinators and managed 75 gardens (Lawson 2005). In 1981, it reorganized as a nonprofit, called SLUG.

How to start a community garden in San Francisco circa 1984? In its newsletter, SLUG advised prospective urban gardeners to begin by finding other people “who’d like to garden too.” Then, “do a little detective work to turn up one of the 7,000 vacant lots in the city”. Urban gardening in this historical moment was also a project of re-valuing land and properties rendered surplus or waste(d) within a market economy and the economic depression of the 1970s. Both CETA gardens and SLUG had also emerged in the context of the “community gardening” movement, then growing in cities across the country (Kurtz 2001, Lawson 2005). Scholars have written about urban gardens in this moment as symbolizing a “right to the city” (Schmelzkopf 1995, 2002, Staeheli et al 2002, Martinez 2009, Iveson 2013), often referring to the influential Green Guerilla group in New York City which, in 1973, began throwing “seed bombs” (containing fertilizer, seed, and water) over fences into vacant lots (Schmelzkopf 1995, 2002). In New York City, a wave of foreclosures, building demolition, and population loss – all related to the city’s fiscal crisis in the 1970s and concentrated in neighborhoods like the Lower East Side, Harlem, and the South Bronx – had left a landscape of empty, weedy lots, some of which the Green Guerrillas “attacked” with their seed bombs.

As a third step in starting a community garden, SLUG advised its would-be gardeners to “negotiate a lease, or better yet, a donation of land for community use.” Insecurity of land tenure has always threatened urban gardens plots – when real estate values rise, so has pressure from developers. In the 1980s in San Francisco, the land conservation group, the Trust for Public Land, often negotiated these leases for SLUG.

Lastly, at least before planting, SLUG reminded its new garden community to “remove all the trash” (an earlier version of today’s EPA report on toxic brownfield sites), reflecting the ways that the gardening movement at the time was also a project of waste removal.

According to most scholarship on urban gardens in U.S. cities, the community gardening movement of the 1970s and 80s marked a new moment in the history of urban gardening, although they built from older garden projects and practices (Kurtz 2001, Lawson 2005, Pudup 2008). Thomas Bassett (1979, 1981) identifies seven distinct gardening movements in U.S. urban history. Arguing that urban gardening projects have historically emerged in response to social and economic crises. As Mary Beth Pudup (2008) shows in her critical review of the literature on U.S. urban gardens, Bassett analyzes this relationship between garden movements and crises through a framework of cultural ecology – theorizing urban gardens as adaptive responses to social and economic

changes. Rather, I would suggest that gardens have historically targetting wasted lands and behaviors coded as deviant, and sometimes racialized. This history is instructive in analyzing the discursive work of contemporary urban gardening organizations in the U.S.

In the late nineteenth century, vacant lot cultivation associations emerged as a philanthropic response to unemployment in the wake of the depression of 1893. The associations worked largely through donations of public and private lands left undeveloped in the depression, and sought these lots for temporary cultivation. The idea first became popular in the industrial city of Detroit, and was soon was adopted by governments and charities in other industrializing cities as an economical form of charity. As the economy improved (and land values rose, and some people were able to find jobs), many of these charitable gardening associations folded or faded away (Bassett 1979, 1981, Lawson 2005).

As Pudup (2008) argues, the vacant lot cultivation movement worked through the moralizing discourses of independence and self-help, or in other words, the charity groups sought idle lands as sites to cultivate (perceived) idle hands. The primary landscape of the vacant lot cultivation associations were not the fields of dirt but their worker's subjectivities, the landscape of the self. By the 1890s, large numbers of European migrants, racialized as non-Anglo, ethnic whites in this historical moment, had moved to U.S. cities where they often lived in crowded housing tenements (Jacobson 1992). The popularity of vacant lot associations should be understood in the context of a broader slum reform movement emerging in U.S. cities, which targeted both behaviors and physical landscapes of slum dwellers. The early twentieth century social reformer, Jacob Riis, articulates the connection between cultivating land and particular subjectivities in a letter to participating land owners in the *Philadelphia Vacant Lots Association 15th Annual Report*, (1911), "Your Vacant Lots Gardeners are not only utilizing soil that before went to waste, and eking out their income in the best of all ways, but you are giving them a fresh outlook on the world that is worth all the rest, at the same time you are helping win the children from the street" (quoted in Lawson 2005, 31).

Yet even as the vacant lot cultivation associations of the 1890s were promoted as a temporary form of poor relief, the New York-based *Charities Review*, in justifying the project of vacant-lot cultivation in 1898, argued against this notion that gardens were only temporary features of the industrializing city. Gardens worked as livelihood support for what they understood as a permanent condition of urban life within industrializing cities. "We are beginning to realize that in our modern civilization we have to deal with an ever-changing yet never-absent class of unemployed men and women, who for various reasons can find no place in the industrial system." (Speirs, Lindsay, and Kirkbride 1898, 74). "The individuals in this class are changing constantly, and the numbers vary greatly from time to time, but the class is permanent" (74).

Thomas Bassett also recognizes how urban garden projects in the U.S. have historically articulated with a Jeffersonian discourse of agriculture as a civilizing project and the basis of democracy⁴. The vacant lot cultivation associations had advocated the moral and social benefits of their "potato patches" in terms of the yeoman-farmer virtues of self-help and independence, while the school garden movement of the 1920s were similarly imagined to promote "economy, thrift, efficiency, and good citizenship", particularly among the children of immigrants (Pudup 2008). Liberty gardens promoted by the National War Garden Commission during World War I and Victory Gardens (a project

of the War Food Administration) during World War II linked food production and the work of gardening with the nation-state and the war effort. Through these garden project behaviors seen as wasteful were also coded as unpatriotic (Basset 1981, Lawson 2005).

SLUG's community garden movement makes sense within the history of gardens as response to urban and economic crises. As I explore below, in the 1990s, in the context of a rollback of the welfare state, SLUG moved its offices to Bayview-Hunters Point and took a more active role addressing problems of unemployment, poverty, and violence in the neighborhood. While SLUG's gardens had emerged from the federal CETA program (and in the early 1990s, SLUG hired the former director of New York City's "Green Thumb" program – the city-sponsored outgrowth of the 1970s-era Guerilla Gardeners), the history of gardening in Bayview-Hunters Point has other roots too. In the following section, I show how the gardening in Bayview-Hunters Point also challenges the dominant narrative of gardens as discrete, crisis-based movements in U.S. cities.

Beyond the Crisis Narrative

There is also an important history of gardening in Bayview-Hunters Point that challenges Bassett's episodic history and the notion of urban gardens as responses to distinct economic and social crises. Sarah Moore (2006) has critiqued this narrative though her study of early twentieth century Columbus, Ohio, showing how subsistence gardens were a normal part of everyday life for many people, and that it was only in the late 1930s that crisis narratives in local, Columbus newspapers reinterpreted gardens as temporary, stop-gap measures, suitable only for periods of high unemployment. As Moore argues, "This discursive colonization of garden landscapes by a crisis narrative eventually made such spaces both less visible and less viable in the city" (175). Through an emerging discourse of what she calls "the urban normative", she argue, gardens were construed as part of a rural past, out of place in the industrializing city. Teresa Mares and Devon Pena (2010) also challenge this dominant crisis-based periodization of gardens, taking up the idea that gardens had declined in number and political significance after World War II, a trend which is linked to the centralization of food production and distribution, and that gardens had reappeared in the context of economic depression of the 1970s. Mares and Pena argue that this obscures a "subaltern history" of urban gardening, overlooking the role of home kitchen gardens among working-class and immigrant families (242).

The notion of urban gardens as, historically, crisis-based activities likewise obscures how gardens were an everyday part of urban life for many southern migrants in Bayview-Hunters Point in the postwar years. Although this story is undeveloped in this dissertation, I think it is important to point out that Bayview-Hunters Point gardeners would have had strong connection with and memories of the rural south – to Jim Crow laws and family histories of enslavement. This relationship with the south also represents an absence in Moore's (2006) study of African American gardeners in Columbus, in that she does not explore their gardening practices to a not-too-distant past on southern plantations. In the early twentieth century, most black farmers in Ohio, as with other northern cities, would have recently migrated from southern states, in the context of the Great Migration (Wilkerson 2010). When I spoke with Marie Harrison from Greenaction with Environmental and Health Justice, for example, she had told me about about her

father, who grew up in Kansas City, Missouri and later worked at the Hunters Point Shipyard, had planted gardens in Harrison and her sister's backyard while they were raising their own families. "He was a country man", she remembered to me.

At an event sponsored by the Bayview Historical Society in November 2011, at George Carver Elementary School, off Third Street, I listened to a panel discussion on the history of San Francisco's Black Cuisine Festival and the nexus of food, politics, and black history in southeast San Francisco. I sat in the audience as a volunteer with Quesada Gardens Initiative, having helped set up the gardening organization's table, with handouts and a map of different vacant lots that QGI had helped transform into gardens.

After the panel presentation on the thirty-year history of the Black Cuisine Festival in San Francisco, elderly members of the audience remembered the significance of particular foods in their lives in Bayview-Hunters Point. Several audience members told stories of going to Butchertown, which had been located north of the shipyard, and getting bags of chicken wings and oxtails. "Now everyone is hip to these animal parts" one man joked, making a reference to San Francisco's foodie culture. In the 1950s and 60s, chicken wings and oxtails were considered marginal parts of animals, without much value to butchers selling the valuable cuts of meat, but had represented important sources of livelihood for low-income families. On the high price of organic food today, one woman poked fun at the popularity of leafy vegetables. "Let me tell you something about greens," she said, "It don't take nothing to grow greens." Laughter drowned out what she had to say next, and others joined in. "Until the 1980s, all black folks used to grow their own food", said another woman, marking the loss of this form of garden-based self-sufficiency with the moment that drugs and gang life became dominant part of the urban milieu in Bayview-Hunters Point. Drugs, gang violence, and a concern about the future of children in the southeast had also been a pervasive theme at that day's event. "My mom had chickens in her backyard," another woman added, and continued, "Now everyone's telling me to go out and buy fresh, people don't understand that what they're telling us now to do that is good – that's what we had to do to *survive*." The audience agreed with her, "That's right," others chimed in.

Today, the Southeast Food Access (SEFA) coalition runs a program called "Food Guardians" in Bayview-Hunters Point. SEFA formed in 2007, a collaboration of several nonprofits and city agencies, like the San Francisco Food Bank and the Department of Public Health, to tackle issues of nutrition and health in this area of the city. The Food Guardians program describes itself as based on a community health worker model, and includes workshops, training, and outreach by Bayview-Hunters Point young adults, who are paid for 20 to 30 hours of work. SEFA has also targeted corner stores in the neighborhood and, with a grant from the city's Department of the Environment, worked with two stores in particular to sell produce and healthy foods. SEFA contracted Studios Associates, a grocery design firm that also works with Safeway, to give technical assistance, bring in refrigerators, and consult on which food to bring in, and how to maintain fresh produce. Another of SEFA's programs is running an education program at Bridgeview garden in the Bayview, one of Quesada Garden Initiative's projects, uphill from the original Quesada median strip garden. SEFA uses Bridgeview to teach the Food Guardians and others how to grow food (Tracey Patterson, pers. comm., 2012).

The comments by Bayview-Hunters Point residents at the Bayview History Day in 2011 challenge the resource and knowledge deficit model implied within SEFA's

practices in the southeast, which emphasize food consumption practices. From the conversation at the Bayview History Day, it did not seem that Bayview-Hunters Point residents lacked knowledge about “good food” (c.f. Minkoff-Zern 2013). A more interesting question might be why, at this historical moment, urban gardens and gardenings are seen as transformative practices, rather than normal parts of everyday life.

Sweet Potatoes and Flowers

I spent nine months during 2011 and 2012 volunteering on Saturday mornings with the Quesada Gardens Initiative (QGI), which today targets weedy, trash-filled public lots and turns them into gardens and other green spaces. The five garden plots QGI manages today include a median strip, an irregular, thin triangular of land along the edge of a hilly street, and a rectangular plot owned by California’s Department of Transportation that sits above a train tunnel (under which the commuter rail line disappears, to re-emerge in the South Bay en route to Silicon Valley). In some ways these are like the marginal “wastes” which eighteenth century English commoners relied on for their plant and mineral resources. At that historical moment, sides of roads, forests, strips in between agricultural fields were all outside direct cultivation, and as such could support peasant livelihood and their “cottage industries” (Goldstein 2013). There is no real estate or development pressure to develop the Quesada Street median strip, for example.

Today QGI has non-profit status, but it began with a group of residents on Quesada Street, who sought to change the physical and social space on the block. In the 1990s, this particular block of Quesada had become a meeting place of a different sort – dominated by drug users and sellers. In 2002, two elderly residents, Rosemary and Henry, began planting flowers on the part of the median strip in front of their homes. Both were long-time black residents of Bayview-Hunters Point. When I first met Rosemary at the Quesada Street garden, she described herself to me as a farmer’s daughter. When she and Henry eventually started planting vegetables, they grew collards, sweet potatoes, and peanuts – all southern crops. When she mentioned this last plant I looked surprised – I realized I didn’t know what a peanut plant looked like. Rosemary laughed at this, “not many people do,” she said sympathetically. Although she does not live on Quesada Street anymore, Rosemary still keeps a backyard garden. She told me about her tiny sweet potatoes, thin like fingers, she said, but they make good pies.

When I started my research on gardens in Bayview-Hunters Point, I was interested in how people felt about gardening in potentially toxic spaces. With a few exceptions, in my conversations with people in QGI and Hunters Point Family, no one was interested in this line of questioning. Rather, the gardeners I met were primarily concerned with another kind of toxic environment – the effects of drugs and violence. Quesada Street residents began helping Rosemary and Henry by collecting buckets of water, and some seeded their own flowers on the median strip. A group of residents spent many years (including much paperwork) to get permission from the city to manage this marginal plot. But what also tied the gardening group together at that time was the desire to address drug use on the block and the threat of violence. Many people felt unsafe outside their homes, even during the day.

When I interviewed Patricia in front of the median strip in October 2011, I asked her how the street changed since Rosemary and Henry began planting flowers. “The garden made the street nicer,” she said, “it brought people together, we started watching out for each other. You knew someone shared your concerns and you could work together to get the block back to how it was when we first moved here.” “What kinds of concerns did you have? I asked. “The drug use,” she had answered, “that was the biggest thing.”

Patricia helped organize a phone tree, and neighbors would call each and contact the police and city attorneys – regretfully, she added – if they could report an illegal act or saw someone who they knew (or thought they knew) to sell drugs. Patricia also remembers going up to telephone pole workers, asking them to take down the sneakers hung up on telephone lines, and contacting homeowners to tell them their renters were selling or using drugs. “You need to clean it up,” as she would say to them, not referring to the physical waste in the median strip but the social life of the street, here experienced as a form of contamination or pollution as well. Her work in contacting city agencies can be understood as a form of exercising a “right to the city”, along with the physical gardens.

Tall palm trees run up the length of the Quesada Street median, and the icon for QGI today (which is important for a non-profit that is dependent entirely on outside funding), is the palm tree. Although the director of QGI sits on the board of the Southeast Food Access coalition, it should be noted that the palm tree is not a particularly edible plant. When I met Anika, with Hunters Point Family, at their offices in the Doublerock public housing development in Hunters Point, she referred to QGI’s palm tree icon as an example of what she felt the gardening group pays most attention to – beautifying the physical landscape. “They do really good work,” she said, and paused for a moment, “but they’re not giving anyone a job.” Anika’s point of comparison speaks to a different kind of garden project.

Green Jobs

At her office that day, Anika showed me a brochure she had recently put together for Hunters Point Family. She pulled up file on her computer screen and scrolled down to a particular image, angling her white iMac computer screen so I could see it better, and I leaned forward toward the screen. It showed a picture of the Double Rock garden, with green collard plants growing in the soil, and a black teenager tending the plants, shovel in hand. Photoshopped in the center of each plant was a smiling, young face. “Can you get the message?” She asked me, beaming back at the happy, goofy faces. I nodded, and it was impossible not to smile at them too. “You’re growing healthy kids,” I observed. “That’s our philosophy”, she said, “That’s what we do.”

I looked through the brochure a few months later, when Anika posted it on the Hunters Point Family website. Within its pages, it is also clear that the gardens are intended cultivate employable teenagers and young adults. It lists the marketable garden skills taught to Hunters Point Family youth, such as offering certification in permaculture and courses in greenhouse growing methods. Many people who live in the housing developments targeted by Hunters Point Family are unemployed, and almost half of individuals live below the poverty line (US Census 2010). Neither of its garden invites outside volunteers, as Quesada Gardens Initiative does, rather Hunters Point Family pays

teenagers in Hunters Point to work (or in the case of middle school girls at Adam Rogers, a stipend, because they are under 16 years of age).

Through its gardening program, Hunters Point Family continues the work of SLUG in Bayview-Hunters Point, which in the 1990s established Youth and Economic Development Department, in collaboration with the San Francisco Housing Authority and San Francisco City College, “to make urban agriculture an avenue of economic and educational opportunity for San Francisco Housing Development residents”⁵.

In the 1980s, SLUG had focused primarily on gardening education and vacant lot reclamation. The land conservation group, the Trust for Public Land, often served as legal support in negotiating with landowners, writing leases, and in general trying to maintain security or land tenure for SLUG gardens. One threatened plot that the Trust for Public Land and SLUG struggled to protect from the Redevelopment Agency and a private developer was the Frederick Douglass Garden (a former CETA plot), located on Fillmore Street in the Western Addition/Fillmore. According to SLUG’s newsletter, the garden was used primarily by black senior citizens and Laotian refugees from that area. In the

depression-era discourse of the time, SLUG emphasized that Frederick Douglass plots as a form of financial savings for its gardeners.

In the 1990s, under different leadership, SLUG’s orientation changed radically. While it remained involved with gardening education and land reclamation, its focus shifted to youth development, job-training, and part-time employment for “at risk” youth, and this work geographically centered in Bayview-Hunters Point – SLUG have even moved its offices to the southeast neighborhood.

SLUG’s Youth and Economic Development Department put teenagers in Hunters Point to work and paid them. Initially its programs included the Youth Garden Internship at the Adam Rogers garden, and an Economic Development Project, run at the 4 1/2-acre Alemany Farm (also known as St. Mary’s Farm), which

hired young residents from the Alemany and Potrero Housing Developments in southeast San Francisco. The farm program was designed to train teenagers in sustainable horticulture, landscape construction, and business skills. The farm’s produce also included a line of food products, made and marketed by Bayview-Hunters Point teenagers (SLUG leased a building on the shipyard), called Urban Herbals. The line included salad dressings, jams, and honey, all sold at health food stores (like Whole Foods) in the Bay Area during the 1990s (in addition to SLUG newsletters, also see Kaufman and Bailkey 2000 and Lawson 2005). SLUG also ran a program that hired teenagers to landscape its gardens and sweep city streets, called the “Green Team”.



Image 17. “Urban Herbals” advertisement in the pages of the San Francisco League of Urban Gardeners newsletter (Summer 1995).

SLUG's youth and economic development programs in Bayview and Hunters Point grew throughout the 1990s in the context of (and responding to) radical changes to the U.S. welfare system. In response to U.S. Congress decreasing the number of years families could be supported by the Temporary Assistance for Needy Families policy, SLUG helped support a new Southeast Job Training Collaborative. The training program was designed to help people transition welfare to full-time work, participating in and supplementing President Clinton's neoliberal "welfare to workfare" agenda. SLUG also operated a Transitional Employment Program, which offered employment combined with classes at city college: GED classes, computer skills, welding, and gardening.

SLUG did not simply seek to help people find jobs (in part by creating part-time jobs), but also targeted a specific set of individual behaviors. Along with training in gardening and landscape work, teenagers with the Youth Garden Internship were required to take 16 hours of conflict resolution training at San Francisco's City College. According to SLUG's director at the time, "The youth farm provides low-income teens not only with employment, business management training, landscaping, sustainable horticulture and non-violent conflict resolution, but the farm is a refuge from daily exposure to violence and a healthy alternative to crime, drugs, and gangs."

The Double Rock garden next to the Hunters Point Family office today was first seeded in 1995, in the context of SLUG's emphasis on gardening as a form of violence prevention. According to the SLUG newsletter, "This program was established due to the pressing problems currently faced by the Double Rock community, including unemployment, violence, and drugs". Funding for employment at the Double Rock garden came from a federal Enterprise Community grant, a neoliberal version of CETA. The Federal Empowerment Zone and Enterprise Communities (EZ/EC) Act of 1993 sought to encourage businesses in low-income areas through reducing taxes and other regulatory burdens, with the idea that incentivizing business opportunities in targeted areas would create jobs for residents and economic growth for the area (Hyman 1998). The EZ/EC program marked a contrast to the federal CETA program of 1973, which had focused on the creation of public sector jobs as a way of addressing structural unemployment.

Hunters Point Family continues the work of SLUG in Bayview-Hunters Point through its urban agriculture program, yet its gardens are part of a broader effort to create more blue collar job opportunities in the neighborhood. In February 2013, I joined Anika and a few other adults who work with Hunters Point Family at a San Francisco City College board of directors meeting. The board had given Anika ten minutes to present on her idea of a "Green College" program at the Southeast Community College campus. She had previously discussed the idea with several people at the community college. They were supportive of her program, especially because the majority of funding would come from a community benefits agreement which she had already negotiated with an engineering firm currently renovating the Southeast Sewage Treatment Plant, in the Bayview.

At the end of the long evening, which was dominated by an extended discussion of the college's upcoming accreditation review, the meeting opened up to public comments. Several of those who had come with Hunters Point Family (including myself) had put our names on comment cards, and we were called up individually to the microphone and allowed three minutes to speak. June, the current program director for Girls 2000 and the Adam Rogers garden manager, spoke first. She told the city college board about her work

teaching jobs skills to middle school girls in the garden, adding that her goal is for all her girls to be able to find jobs in urban agriculture after they graduate from high school. After she spoke, a middle-aged man, who had arrived with his son (a young teenager), was called up to the microphone. June's energy had been exuberant – she spoke excitedly about the work of the garden and its promises for the girls future. In contrast, the man spoke with a somber tone. “We need Green College”, he told the board of directors, “we need jobs because people are being killed out here”. His comments spoke to the desperate need for income, and the ways urban agriculture would address a different kind of unhealthy environment than what SEFA focuses on, for example.

Robert Self (2003) explains the failure of Great Society liberalism in Oakland in part through the ways it offered job training, and the promise of work, (1) in the context of a society structured in difference, and in which the distribution of jobs in the Bay Area fell along racial lines, and (2) in a historical moment when working-class, manual labor jobs were leaving Oakland for suburban, economically greener pastures. Anika has designed the Green College program so that some of its graduates would be placed in well paying manual labor jobs – at the sewage treatment plant renovation, or as hazmat labor on the shipyard. Still, Green College faces the problem of being able to train people for jobs of which there are short supply. At the same time, Anika sees the promise of Green College not in relation to existing jobs, but within the expanding green collar economic sector. Like the Cleveland-Cuyahoga Food Policy Council and Hantz Farms, Anika identifies urban agriculture as an emerging economic growth sector, and she wants to bring that growth sector to Bayview-Hunters Point.



Image 18. Seeding the Adam Rogers SLUG garden, 1989 (San Francisco League of Urban Gardeners newsletter, Fall 1989).

A month after the city college meeting, I visited the Adam Rogers garden on the Hunters Point hill. The garden was named after a well-known local activist who had been killed in 1977. The garden was first seeded by SLUG in 1989. The San Francisco Recreation and Park Department had provided land, and funding for the garden came initially from the Mayor's Office of Community Development and a Florida-based nonprofit, End World Hunger. San Francisco's Friends of the Urban Forest (FUF) was

another sponsor, planting fruit trees, as an urban horticulture project. Horticulture marked a departure from FUF's usual practices of planting trees along sidewalks, as a form of neighborhood beautification (*San Francisco League of Urban Gardener*, Fall 1989). When I visited the garden in March 2013, the space was filled with raised vegetable beds and lined with a hillside of trees and flowers.

I had met June after the meeting and she invited me to come out to the garden on the weekend, which is when the girls spend most of their time gardening during the school year. That Saturday morning in March, I walked up a long staircase to where the garden is perched on a hillside, alongside condominiums and subsidized housing developments. June greeted me at the garden's gate with a hug and a big smile that cut through the morning fog. The gate opens up into an acre and a half patch of land, full of fruit trees, raised beds, a few work sheds, and a hillside that slopes up, gently, to more homes. Down the hill on the flatlands, behind us, the shipyard spread out toward the water, but I walked away from it, with June, toward the fruit trees and the flowers.

June was excited about the tulips they had just planted. More than a pretty hillside, the flowers offered a teaching opportunity – a lesson in growing plants as well as business management. Looking at the hillside together, June envisioned one of the girls starting a micro-enterprise, selling the flowers. She linked the growing season of the flowers with the possibilities for the girls future.

That day I helped transplant seedlings into larger pots, helping prepare for the following weekend's plant sale and fundraiser. June and her partner, David, along with a childhood friend from Oakland and a woman named Starhawk, who is a prominent figure in the Bay Area political scene, watched over the different work groups, making sure things ran smoothly. June's friend prepared a lunch we would eventually eat together. I sat with three girls and a younger brother, and we talked about weekend plans and high school – a few of the girls would graduate from middle school at the end of the year.

Towards the end of the workday, David came over to our group with a handful of dirt and worms. He reminded us of the benefits of the worms in recycling the garden's "waste" products, producing beneficial humus. But he also wanted the girls to take note of the quantity of worms in his hands – to measure it, at least roughly. He wanted them to know that this amount was worth five dollars, making sure they knew the exchange value of the worms as well. The gardening workday was also meant to teach them skills, to run gardens as a business.

At the end of the day, June walked me back to the steps leading down to my car, and she elaborated on the value of the garden in the lives of the girls with which she works. She had been particularly worried about Megan, who had been very quiet that day. June explained to me that Megan's dad had died earlier in the school year. He had died from a gun wound in their house, while Megan was at home. It had been a long year for her and June hoped that Girls 2000 and the garden work had provided a sense of stability in Megan's life. My face looked concerned and June responded to this, wanting me to know this situation was larger than one individual. "A lot of the girls know someone who has been shot at", she told me. An internal survey distributed to 37 teenagers involved in Hunters Point Family programs asked questions about the presence of violence in their lives. It concluded, "at least two-thirds of the youth have been beaten up/jumped/robbed someone, know someone who has been killed or shot and/or been in a physical altercation. Violence surrounds and permeates the lives of these young people to a shocking degree"

(Miller and Takai n.d.). To emphasize the ways violence is part of everyday life, even in the garden, June told me about the day bullets flew through the garden itself, causing everyone to duck behind the raised beds. Today they have a protocol in case this kind of violence passes through the garden again.

The Quesada Gardens Initiative and Hunters Point Family manage garden projects which are also social projects. Hunters Point Family support youth development in Bayview-Hunters Point, providing spaces that feels safe and a nurturing community, and focusing on jobs skills as support in navigating a shifting and insecure job market. QGI targets wasted spaces – sides of roads, weedy lots – and seeks to build a sense of community through the process of making and managing these sites as gardens and parks. In the context of profit-driven urban development projects today, and a history of racism and urban neglect, both gardens projects articulate alternative notions of value.

¹ Kevin Epps’s film, *Straight Outta Hunters Point 2* (2010) includes interviews with young men from Doublerock in the garden, testifying to this sense of the garden as a refuge and space apart from violence in everyday life.

² This chapter draws from SLUG newsletters between 1983 and 2002. These can be found in bound volumes at the main, downtown, San Francisco public library.

³ CETA was understood as a revenue sharing program between the federal and local governments, and “it is generally agreed that its purpose is to shift control over the multibillion-dollar manpower program, within broad limits, from federal to local officials and to increase flexibility in the use of these resources by local prime sponsors” (Mirengood and Ridler 1976: 4).

⁴ Bassett (1979, 1981) makes the argument that urban gardening appears to replicate the American tradition of Jeffersonian democracy and yeoman self-sufficiency, only within a very different social and economic system, in 1970s U.S. cities, and in the absence of land ownership (the Jeffersonian ideal is in fact a myth). He concludes that tenure/title is one of the most important means of securing or maintaining community gardening today (Bassett 1981, 8).

⁵ The following history is pieced together from SLUG newsletters between 1994 and 2002, housed at the San Francisco Public Library.

Conclusion – The Social Relations of Waste

In the fall of 2011, at the height of the Occupy movement across the country, I joined a protest led by Greenaction for Environmental and Health Justice, with the Bayview-Hunters Point Mothers Environmental Justice Committee, of the Hunters View Tenants Association, in front of the Bay Area Air Quality Management District (BAAQMD) offices. The BAAQMD offices are on Ellis Street, in the Western Addition/Fillmore District, near where some of members of the Mothers committee had grown up, before they moved to Hunters Point. In 2007, BAAQMD fined Lennar for using unreliable asbestos air monitors in its construction work on the shipyard between 2006 and 2007. The air monitors, which were designed for indoor air quality monitoring – not for outdoor construction work – had malfunctioned for over a year as Lennar leveled out the shipyard’s former Parcel A, preparing for its new development project (California Department of Public Health 2007). While many residents of Hunters View and other housing units uphill from the construction site had experienced health problems during the fall of 2006 and throughout 2007, it was not until August of 2007 that a city moratorium halted the development company’s construction work – however briefly – so that the state department of health could evaluate the issue.

For many residents, this delay in the official response to their health problems – and what they saw as the inadequacy of this response – represented another form of the racialized neglect that has characterized the relationship between Bayview-Hunters Point residents and city agencies for decades. As Marie Harrison, an organizer with Greenaction and a long-time Bayview-Hunters Point resident who had grown up in the Western Addition/Fillmore and had worked at the shipyard, wrote to me in an email, describing the fraught relationship between residents and the city’s public health department, “the community continued to complain about headaches, nausea, bloody noses, and dry and itchy skin and eyes. After we protested and protested, we were told by our health department that there was in their idea no long-term ill effects. Not that we were not affected, but that, in a word, it would not last”.

In their study of the lived experience of toxic risk in Flammable, an Argentine shantytown in the shadow of a Shell oil refinery and other petrochemical companies, Javier Auyero and Deborah Swistun (2009) argue that confusion and uncertainty “are constitutive parts of the way in which social domination works and of the resident’s toxic suffering” (8). The health risk assessment in Hunters Point did not deny toxic harm, but it could not connect, toxicologically (or as Harrison put it, “in their idea”) the physical suffering of residents with Lennar’s construction work. In producing an official state of

uncertainty about the events, the assessment also allowed for corporate abnegation of responsibility to Hunters Point residents. After the release of the health risk assessment, Lennar posted a press release on its website, declaring that its grading operations on the shipyard had been harmless. Meanwhile, most residents dismissed the risk assessment as invalid. While residents had experienced multiple health problems, these lived experiences had slipped through the toxicological framework of the risk assessment, and also seemed to disappear in the eyes of state health department workers. Continued problems with dust at Lennar’s construction site in 2010 and a contested Environmental Impact Assessment for the redevelopment project were two other reasons that Greenaction and the Hunters View Mothers committee organized the protest on Ellis Street that day.

When I arrived at the event, Bradley Angel, the director of Greenaction, greeted me and handed me a poster he had printed for the event, which read, “Occupy for Clean Air and Environmental Justice.” The poster showed the short, pot-bellied capitalist from the children’s game Monopoly (a popular representation of “the 1%” as well as of University of California President Mark Yudof at that time) and a power plant in the backdrop, with curlicues representing toxic air emissions rising from its smoke stacks. Angel had set up three camping tents in front of the BAAQMD offices – potent symbols during the fall of 2011 – along with banners protesting air pollution in Bayview-Hunters Point.



Image 19. “Occupy for Clean Air and Environmental Justice”. Protest at the San Francisco Bay Area Quality Management District offices, November 2011 (photo by author).

I joined the protest after a crowd of roughly thirty people had formed, and Angel and I spoke on the edge of the gathering. I asked him how he thought the event was going. “It’s great!” he said, happy with the lively turnout. People had started to assemble around a hand-held microphone. Throughout the event, speakers from Bayview-Hunters Point testified to life-long experiences with poor air quality, which they knew through their own illnesses and those they saw in friends and family members. Community organizers had driven up from East Palo Alto – another neighborhood, near Silicon Valley, where environmental justice activism has emerged in protest of inequality and pollution – in solidarity with Bayview-Hunters Point residents and Greenaction. The residents at the event also included a group of six or seven young African American men, some wearing blue surgical masks – which covered their noses and mouths, performatively demonstrating a right to state protection against industrial pollution – and carrying signs. One sign read, “Hunters View... We need help. The air we breathe is toxic. Let us live”. Another sign echoed the first: “Let Us Live”, someone had written in bold print, with the words “Hunters Point” at the bottom. Angel gestured to the young men. “They’re with the Mothers”, he told me, letting me know they had come from the Hunters View public housing units, uphill from the shipyard and the former Hunters Point PG&E power plant.

After the residents from Bayview-Hunters Point gave testimony in the microphone (a group that included both black and Asian American speakers), the crowd began to chant, “We want clean air”. I stood with the organizers from East Palo Alto, holding the sign Bradley Angel had given me, and chanting in solidarity. The young men with blue surgical masks used a speakerphone to also chant the refrain from the signs they held: “Let us live”. The speakerphone amplified their words, which reverberated off the BAAQMD building, met by silence from the BAAQMD staff members. The workers from the state agency stayed inside their offices, and I wondered whether they saw the signs or heard the chants – and if so, whether they found them haunting too, or simply ignored them. Later, Angel and a few members from the Mothers committee spoke inside the BAAQMD building, at an official meeting, while the young men with the blue masks and others waited outside. It seemed that the state agency would only respond to the concerns of the protest group that day within this formalized space, and at the appropriate time. The absence of response on Ellis Street itself reminded me of what David Theo Goldberg (2009) has called “the violence of civil society”. In the late nineteenth century, through the emergence particular forms of government, civil society “becomes the codification, the socialization, of violence rendered invisible”, Goldberg writes, in a chapter he titles “Killing Me Softly”. The blue, store bought facemasks and signs held by the young men from Hunters View in front of the BAAQMD building spoke from a lived experience of state and state-sanctioned violence, which is how Ruth Wilson Gilmore (2007) defines racism.

It is this lived experience of industrial pollution as a form of racialized violence that this dissertation has sought to examine. I began the manuscript, as I began my own fieldwork, at a shipyard hazardous remediation project. The strained exchange between Keith Forman and Malcolm – contained within boundaries of civility at the official, naval-led event – bears instructive similarities with the protest on Ellis Street in front of the BAAQMD offices. At the naval meeting, Malcolm had linked the story of Port Chicago in 1944 with a toxic fire on the shipyard’s Parcel E-2 in 2000 to suggest a relation of

racialized violence between the military and black Bayview-Hunters Point residents today. Forman had ignored Malcolm's comments and only responded to his question about sea level rise and its effects on Lennar's development project. For the Navy, the development company, and the environmental services firms hired to do the work of hazardous remediation, the shipyard's toxic waste is an object to be measured and contained, and a technical problem that can only be solved by technical experts. For Malcolm, as for the many of the protestors in front of the BAAQMD offices, pollution has a social history, and represents one way they think about and experience their social positionality and relationship to the state. I do not think that the signs reading, "Let Us Live", at the air pollution protest can be separated from other articulations of racial violence as examined in this dissertation: the young man interviewed by James Baldwin in 1966 who compared San Francisco to Birmingham (in San Francisco, "they're killing us with pencil and paper"); the father speaking to the City College Board of Directors in 2013 about the need for a "green jobs" education and training program in Bayview-Hunters Point ("We need jobs because people are being killed out here," he had told the board); or the woman at a naval-led shipyard remediation meeting in January 2011 who told Keith Forman that Lennar's construction dust "is still killing people out here". In short, it seems Bayview-Hunters Point residents would agree with Gilmore's (2007) notion of racism as "the state-sanctioned or extralegal production of group-differentiated vulnerability to premature death" (247).

In the first chapter I explored the historical production of Bayview-Hunters Point, establishing the social and material terrain for understanding today's articulation of race, racisms, and toxic waste. As residents, planners, developers, and others invested in redevelopment struggle to remake southeast San Francisco today, they also struggle with and rework the material and discursive effects of racialized urban development in San Francisco. In the second chapter, I focused the nexus of redevelopment, racisms, and waste through the politics of brownfield redevelopment at the Hunters Point Shipyard today. This chapter took up the cultural politics of polluted urban land at the shipyard, and examined some of the material and discursive processes through which it has become the grounds for new urban development. I argued that industrial pollution has become a business opportunity – both as property (through relations of rent) and as material object, through physical extraction of toxic earth, as a commodity – at the same time it has become a threatening and even violent space to many long-time Bayview-Hunters Point residents – a violence many experience as a form of racism. The third chapter took up a similar study of the cultural politics of polluted land through an examination of the transformation of Hunters Point's industrially wasted waterfront into ecologically-valued wetlands. I looked at the conditions of possibility for these recently constructed "nature" projects, and explored their contradictory meanings in Bayview-Hunters Point today.

The fourth chapter diverged in both tone and method, focusing on the early history of the Naval Radiological Defense Laboratory (NRDL), which operated at the Hunters Point Shipyard between 1946 and 1969. In this chapter I considered my own physical contact with the lab's files at the National Archives branch in San Francisco – potentially contaminated with radiation – as analytically important in the writing of history. In terms of the broader dissertation, the chapter showed how the lab contributed to the environmental disaster at Hunters Point today, requiring a second decontamination project in the form of the Navy's current brownfield remediation work. Today, many Bayview-

Hunters Point residents seek a fuller account of the lab's history, rather a burying of its memory in the process of building the new development project. The fifth and final empirical chapter studied two garden projects in Bayview-Hunters Point, which emerged in the 1990s and 2000s, and which represent different kinds of wasteland transformation projects. In contrast to the state and private industry-led development projects explored in the first three chapters, these garden projects are led by local, grassroots organizations, and advocate for alternative relations of value.

Together these chapters sought to develop waste as an analytical approach in understanding cities and urban ecologies in the context of a society structured in difference. The notion of waste as an analytic was an empirically motivated attempt to foreground the lived experience of pollution and other forms of waste and wasting, which I saw throughout my fieldwork for this dissertation. The BAAQMD protests and the young men with the blue surgical masks and powerfully-worded signs exemplify the political stakes of taking seriously the social relations of waste and their articulation with race and racisms in southeast San Francisco, rather than letting these relations disappear within a different analytical framework.

In a previously published article, which was first written as a conference paper for the "Race, Space, Nature" conference at UC Berkeley in April 2011, I examined the articulation of waste, race, and space in southeast San Francisco through the concept of "waste formations". As I put it in the article, the notion of waste formations referred to Michael Omi and Howard Winant's (1994) concept of "racial formations", which they define as the "sociohistorical process by which racial categories are created, inhabited, transformed, and destroyed". The concept of waste formations sought to foreground the work of waste in racial formations, suggesting that waste has been a central modality through which race in twentieth century U.S. cities has been lived. Though this analytical framework was empirically motivated – a concept I developed through my fieldwork in Bayview-Hunters Point – I chose not to develop it further in this dissertation. I decided that the notion of "waste formations" categorically linked processes of race, waste and space, when in fact I see these as historically produced and unstable configurations. I write this dissertation in the hopes that some day that concept will have lost its analytical value.

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