

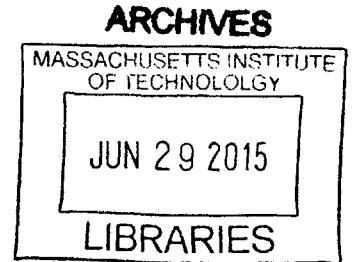
Mapping Impact: An Analysis of the Dudley Street Neighborhood Initiative Land Trust

by

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ABSTRACT

This thesis examines the Dudley Street Neighborhood Initiative (DSNI) community land trust, which provides long-term affordable housing to low-income families using a resale-restricted model and promotes community control over development. It seeks to answer the following question: how much and in what ways has DSNI's land trust stabilized the Dudley neighborhood, specifically with regard to foreclosures, vacant lots, owner occupancy, and housing affordability? It also attempts to measure the land trust's impact spatially and quantitatively and isolate it from economic and social changes in the surrounding neighborhood and the broader Boston housing market. Interviews with housing researchers and experts on the Dudley area supplements this quantitative analysis (a relatively rare approach to studying community land trusts).

Findings largely support the hypothesis that the DSNI land trust has significantly lower building values and vacancy rates than the surrounding neighborhood, as well as significantly fewer foreclosures during the housing crisis and an increasing owner-occupancy rate. It is not clear whether there is a spillover effect from the land trust onto neighboring properties within the Dudley Triangle; however, the analysis does largely support the land trust's claims as a model for housing affordability and development without displacement. The conclusion offers implications for DSNI, the community land trust model, and Boston housing policy.

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Chapter 1: Introduction

This winter, heavy snow made the remaining vacant lots in the Dudley neighborhood even more visible than they usually are. Except where kindhearted neighbors shoveled the sidewalks along these lots, waist-high drifts forced pedestrians to walk in the narrow streets; the white blankness of the open lots contrasted with neighboring buildings, many of them built on similar, formerly abandoned parcels. Thirty years ago, hundreds of such spaces, often turned into dumping grounds by trash haulers, marred the landscape. Meanwhile residents struggled against the burdens of poverty, low-quality housing, encroaching speculative development, and a political structure that did not seem designed for their involvement or best interests.

Some of these residents, with crucial support from a few local funders and community leaders, founded the Dudley Street Neighborhood Initiative (DSNI) in 1984. Winning early victories against illegal dumping and organizing community events, the grassroots organization also took two key actions that would shape its future: it led a participatory, comprehensive planning effort, and it applied for and received eminent domain over vacant land within a 64-acre area called the Dudley Triangle (see Appendix, Figure 12), a first for community organizations in the US (Sklar and Medoff 1994, Taylor 1995, Sklar 2008). Over the next two and a half decades, DSNI would acquire and develop more than half of the 30 acres of vacant lots within that triangle (see Figures 4 and 5) while engaging community members in ongoing dialogue about their visions and desires for the neighborhood (Sklar and Medoff 1994).

Today, those newer buildings next to the vacant, snow-filled lots make up a community land trust (CLT), providing affordable rental and owner-occupied housing to low-income families, as well as space for community service providers and urban agriculture. DSNI's land trust¹ has long attracted attention from urban planners and community organizers from across the country, but it is also drawing increased interest among local organizations, media sources, and politicians. This, combined with the organization's 30th anniversary last year and an ever-tightening real estate market locally, makes now an important time to carefully examine the land trust and its impacts. It could also provide some valuable lessons for the organization itself, suggesting opportunities for boosting its future impact or further areas for evaluation.

Boston is one of the most expensive cities in the country, and rising housing prices show little sign of slowing down (Bluestone et al. 2015). While the city has a relatively large stock of affordable housing compared to other cities, demand still far outstrips supply, particularly among low- to moderate-income households. Yet at the same time, federal funding for new affordable housing has fallen in recent years, placing financial pressure on city and state government and reducing incentives for developers to build below-market rate units.

¹ DSNI operates a subsidiary called Dudley Neighbors, Inc., which technically controls the land trust. However, in the neighborhood as well as in the larger city context and in the literature, DSNI is better known and more commonly used as a term. In this thesis, I will refer to "DSNI" exclusively to denote both DSNI and the subsidiary DNI. I will also use "CLTs" or "community land trusts" when discussing the model in general, and "the land trust" when referring to the DSNI community land trust for the sake of both brevity and clarity.

In this context, the CLT model² appears to be an attractive alternative to traditional forms of affordable homeownership, since its resale restrictions reduce the amount of subsidy required over time (Davis and Jacobus 2008) (see Figures 1 through 3). However, few have studied the model and its purported correlation with community-level benefits like neighborhood stability and long-term housing affordability using quantitative or spatial methods. Additionally, DSNI itself, while the subject of many case studies and other qualitative research, has not been analyzed using more statistically rigorous, data-driven methods.

This thesis aims to address that gap and to provide some answers about a tool and an organization that seem to successfully combat some of the thorniest urban problems. I will seek to answer the following question: how much and in what ways has DSNI's land trust brought stability to the Dudley neighborhood, specifically with regard to foreclosures, vacant lots, owner occupancy, and housing affordability? Is it possible to measure the land trust's impact and isolate it from overall changes in the surrounding neighborhood and the broader market?

A DIFFERENT APPROACH

² CLTs maintain long-term housing affordability via a limited-equity model, restricting resale prices of homes to a certain percentage over the initial sale price. The land trust keeps ownership of the land upon which homes are built, leasing it to homeowners often for 99-year terms, and charging a small ground lease fee (which usually subsidizes CLT operations). These two measures together prevent CLT homeowners from selling these low-cost homes and the land on which they are built to speculative developers, keeping them affordable through multiple sale cycles. Finally, CLTs generally have income limits for homeowners, selling only to households with an income below a certain level or percentage of AMI. See Davis 2008, Davis 2010, *The Community Land Trust Handbook*.

In this thesis, I approach the DSNI land trust from a primarily spatial perspective, attempting to address whether this place-based strategy for affordable homeownership and community-controlled revitalization has a measurable impact on the neighborhood in which it is embedded. I also seek to quantify this impact, using data on housing affordability, vacancy, owner occupancy, and foreclosure, and to compare it to data from a control area using statistical analyses. This differs from most previous research on community land trusts, as will be seen in the literature review section, and offers a new research perspective on DSNI. I also supplement the quantitative analysis with qualitative research, including interviews with key housing researchers and experts on the Dudley community. Since documentation, impact analysis, and data visualization are increasingly important to community organizations seeking funding or other support from private foundations, government agencies, and policymakers, the analysis and maps produced in the course of my research will hopefully prove useful to the organization itself. Influenced by principles of participatory action research, I worked with Tony Hernandez, Director of Operations and Stewardship for the land trust, as well as others at DSNI to ensure that this community-based thesis would be valuable to the work of DSNI, its volunteers, and its partners.

This first thesis section is followed by Chapter 2, which reviews the relevant literature on community land trusts, the housing market in Boston, and the measures used in my analysis. Chapter 3 explores the history of DSNI and the Dudley neighborhood and provides additional context on affordability, foreclosures, and other factors affecting housing in Boston. Chapter 4 discusses methodology, outlining

variables and controls, analytical tools used, data sources, and interviewing methods, setting up the analysis developed and interpreted in Chapter 5. I conclude in Chapter 6 by summarizing findings, discussing implications and limitations of the research, outlining lessons from DSNI's land trust and conditions for success, and suggesting areas for future study. Additional tables and maps, as well as research instruments, will follow in the appendices.

Chapter 2: Literature on Community Land Trusts and Housing in Boston

Community land trusts received a great deal of attention during their early days when many of the seminal texts on the movement were first published, such as *The Community Land Trust: A Guide to a New Model for Land Tenure in America* (Swann 1972), *The Community Land Trust Handbook* (ICE 1982), and *The Community Land Trust Legal Manual* (Abromowitz 1991), before they faded somewhat into the background of urban land and housing policy. More recently, interest in them has begun to grow again, as more organizations—and increasingly, city governments—have turned to them as a model for ensuring long-term housing affordability and “development without displacement” (Davis 2010, preface).

As Julie Farrell Curtin and Lance Bocarsly point out in “CLTs: A Growing Trend in Affordable Home Ownership”, CLTs hold appeal for policymakers and communities alike during both “boom times” and “bad times”, in that they keep housing affordable with a lower level of subsidy when prices are rising and prevent over-leveraging and

foreclosure when housing markets contract (in Davis 2010). Yet despite this renewed popularity and the pressures of extremely tight housing markets in flourishing cities like Boston, there is insufficient quantitative research on CLTs, particularly at a neighborhood level. An examination of the literature indicates that a close analysis of the Dudley neighborhood land trust would provide much insight and new information.

A renewed focus on the DSNI land trust is timely, not least because last year marked the organization's 30th anniversary. In addition, Mayor Marty Walsh recently released a planning report, *Housing a Changing City: Boston 2030*, which cites land trusts in the first of its six goals for Boston neighborhood development: "Mitigate impacts of gentrification through targeted homebuying programs, strategic acquisitions, community land trusts, tenant assistance, and expanded outreach to seniors" (2014).

The report specifically lauds the DSNI model:

Community land trusts have been used in Boston with proven success. For example, for the past thirty years, the Dudley Street Neighborhood Initiative (DSNI) land trust has ensured that new development in the community serves a broad range of income levels and needs.

Yet why has the city prioritized this model of sustained affordable housing specifically? And why has it come to the forefront now? A broader examination of housing market studies, the CLT movement, and the DSNI land trust's context, can help answer those questions.

Affordable housing is a serious concern in many American cities, particularly in a high-demand housing market like Boston. While new Boston-area housing construction

has begun increasing again during the economic recovery (BRA “2013 Economy Report” 2013), so have home prices (Bluestone et al. 2013, Bluestone et al. 2015). Rebounding home and condo sales demand, the overall economic growth of the metropolitan area, and population growth have contributed to a sales vacancy rate of about 2% from 2012 through 2014 (Bank 2012, Bluestone et al. 2015). Additionally, the rental vacancy rate has remained below 4.2% since 2011, due to pressures from growing numbers of students and young professionals unable to purchase homes, as well as former homeowners who lost out to foreclosures during the recession (Bluestone et al. 2013). All this indicates that Boston has an extremely tight housing market, with high rental and mortgage costs that continue to rise.

At the same time, wages for the lowest-income residents have not kept up with increasing housing costs. According to Dr. Amy Glasmeier’s Living Wage Calculator, the hourly living wage for a family of two adults and two children in the Boston area would be \$22.40, more than twice the city’s current \$9.00 minimum wage (Glasmeier 2014). As a result, according to the *Greater Boston Housing Report Card*, just over half of the city’s renter households were rent-burdened from 2011 to 2013, spending more than 30 percent of their gross incomes on housing, while nearly 40% of homeowners were similarly burdened by mortgages (Bluestone et al. 2013, Bluestone et al. 2015). This has also put pressure on low- to middle-income homeowners, making housing a top priority of Mayor Walsh and neighborhood advocates alike.

As a result, fears of gentrification and displacement have taken center stage in popular discussion of housing policy, development, and city planning, particularly in

historically black and Latino neighborhoods like Roxbury and Dorchester (Miller 2014, “Mapping Neighborhood Transformation” 2014). Those fears may not be unfounded: according to analysis by the Federal Reserve Bank of Cleveland, Boston has one of the highest rates of gentrifying census tracts (Hartley 2013). Housing researchers at Northeastern’s Dukakis Center concur that “once-affordable neighborhoods are gentrifying” (Bluestone et al. 2015). Perhaps paradoxically, some of these areas and their neighbors were also hardest-hit by foreclosures during the latest housing crisis according to the Massachusetts Housing Partnership Foreclosure Monitor and Warren Group data, and were the sites of widespread abandonment, arson, and neglect from the late 1960s through the 1980s (Sklar and Medoff 1994).

Vacant lots and boarded-up buildings are still all too common along Dudley Street, Blue Hill Avenue, and to a lesser extent, within the Dudley Triangle containing the land trust (see Figure 5 and Appendix, Figure 12); left to market forces, these properties might be sold by the city or their private owners and converted to high-price condo buildings or homes, pushing homeownership beyond the reach of lower-income residents like many in the Dudley neighborhood. The community members who formed DSNI recognized these risks for both blight and gentrification, and made “development without displacement” an explicit priority for the organization from its inception (*The Dudley Street Neighborhood Revitalization Plan* 1987).

Constructing new affordable housing and distributing additional housing vouchers for low-income families are not necessarily the sole remedies to these problems, at least in the long run. For one thing, affordable housing doesn’t always stay

affordable. The federal Low-Income Housing Tax Credit requires that housing remain affordable for a minimum of 15 years, and some units are on the brink of expiring (Meléndez et al. 2008). The Boston Redevelopment Authority requires that units developed under its Inclusionary Development Program remain affordable for at least 30 years (BRA N.d.); however, the BRA measures “affordability” by the HUD-defined Area Median Income, which is considerably higher than the median income of the Dudley neighborhood (BRA 2015). For instance, the Boston-wide AMI for a family of four in 2015 is \$98,500 (BRA 2015), while 80% of families owning homes on the DSNI land trust earn less than \$70,000 per year (“Land Trust 101” 2015). Thus, while Roxbury may have a high concentration of affordable units, they may not be as “affordable” as they might seem, or remain that way for as long as they are needed.

Community land trusts present an appealing alternative, since by definition they limit resale value, incentivize longer-term ownership, reduce speculative purchasing of homes or vacant lots, and strive to promote “development without displacement” and homeownership among low-income residents (Davis 2010, Dwarka 2014, Sungu-Eryilmaz and Greenstein 2007). Additionally as John Emmeus Davis and Rick Jacobus explain, even truly affordable housing with no resale restrictions require larger and larger subsidies in markets with rising property values, while a community land trust model requires less in the way of re-subsidization over time (see Figures 1 through 3 on following page). This makes the model a particularly attractive option to cities with fast-rising housing prices and little federal funding (Mironova 2014). Thus as multiple references have stated and a 2007 survey of CLTs nationwide found, “[t]he CLT

movement has been witnessing growth in the last decade” (Sungu-Eryilmaz and Greenstein 2007).

Figure 1: Typical Housing Subsidy in Hot Market (Davis and Jacobus 2008)

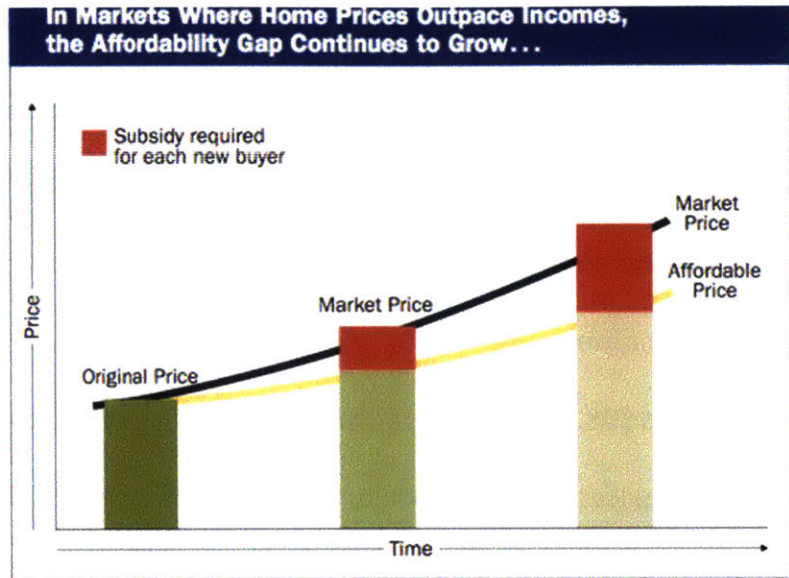


Figure 3: Recapture of Typical Housing Subsidy (Davis and Jacobus 2008)

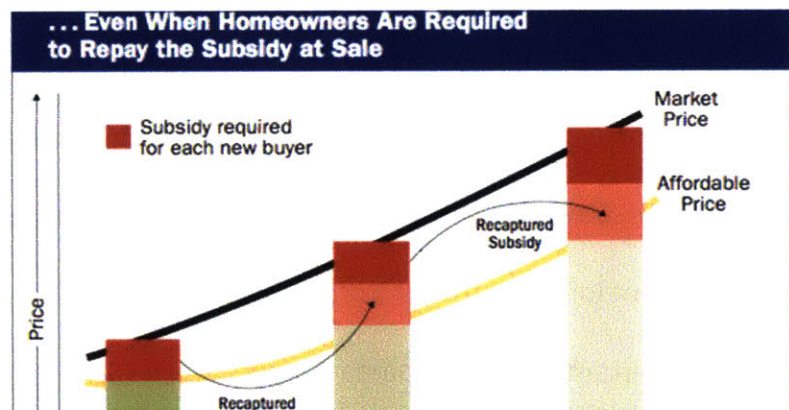
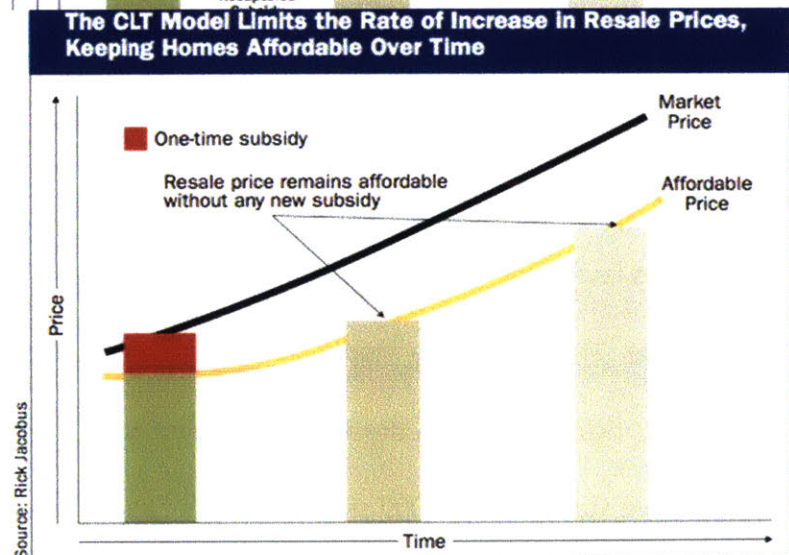


Figure 2: CLT Retention of Housing Subsidy (Davis and Jacobus 2008)



As interest from policymakers and housing advocates in this housing model has grown, there has been a corresponding increase in recent research on CLTs. The mechanisms and property tax implications of restricted resale have been explored (Voith and Wachter 2012, Bagdol 2013), CLTs have been studied in an international context (Wallace 2012, Davis 2010, Moore and McKee 2012), and case studies have examined specific CLTs, including DSNI, from a more sociological perspective (Nagel 1990, Gray and Galande 2011, Thaden et al. 2013, Meehan 2014). This research has contributed to a deeper understanding of CLTs and their effects. For instance, Voith and Wachter explored the tension between municipalities' tax-maximizing priorities and the long-term affordability goals of CLTs, while noting that the model "may prove to be the best of the third-sector [not public, not private] methods for preserving affordability". In order to live up to this potential and overcome any potential resistance from policymakers or the "growth machine", CLTs must be able to back up their claims of affordability protection with hard facts.

However, there has been very little quantitative analysis of CLTs and their impacts on urban communities, apart from working papers published by the Lincoln Institute of Land Policy (which I will explore further in a moment). Kevin Dwarka, in his review of strategies to maintain affordable housing in revitalized areas (in which he includes CLTs), states that comparative evaluation of such strategies' effectiveness "remains underdeveloped in the professional housing literature and is ripe for further study" (2014). Similar points were made by a number of CLT and housing experts I consulted in interviews (see Chapter 5, Qualitative Results).

The primary quantitative study of community land trusts' effectiveness is a Lincoln Institute of Land Policy working paper written by Emily Thaden and Greg Rosenberg in 2010; it compares delinquency and foreclosure rates of mortgaged properties on CLTs to those of properties with traditional private mortgages (both prime and subprime loans). They found that "a prime loan [...] was 5.9 times more likely to be in the process of foreclosure on Dec. 31st, 2009 than a CLT loan", while subprime loans were 27.8 times more likely to be in foreclosure than CLT loans (Thaden and Rosenberg 2010). The authors propose that the difference is due not only to the fact that CLTs limit the housing burden on low-income homeowners by selling homes at an affordable price, but to the "stewardship policies and practices" most CLTs exercise, such as offering pre-purchase education, support to homeowners, and foreclosure intervention. DSNI, for instance, runs homebuyer classes and events and publishes a "Homeowners Guide" with resources on home maintenance and repair financing, among other efforts to support homeowners (*Dudley Neighbors Incorporated Land Trust Homeowners Guide* 2013).

Additionally, as Greg Rosenberg noted in an interview with me, the relationship between CLT and homebuyer goes well beyond the initial purchase:

"[W]e have the ground lease fee, [so] if they miss a payment, it's an early warning system. [Plus we have a] trusted relationship with the homeowner so they talk to us. We can work with them either to keep them in the home or have an orderly sale of the home, so it doesn't affect their credit or go into foreclosure."

Reflecting this reality, Thaden and Rosenberg's findings support the premise that CLTs promote neighborhood stability as well as the financial wellbeing of families and individual homeowners who live on land trusts.

However, the working paper also has its limitations: its data came from a survey administered to nationwide CLT organizations, and may have been skewed by self-reporting or a low response rate. Additionally, the sample includes many smaller and more recently-founded land trusts (the median year for establishment was 1999), which may have a vastly different scale of influence than a relatively larger, longer-running CLT like the Dudley land trust (Thaden and Rosenberg 2010). The housing market characteristics, geographic contexts, and demographics of these land trusts may also vary from those of DSNI. Finally, the paper does not measure the impact of land trusts at a smaller scale, nor does its analysis compare CLT properties to their neighbors or utilize any other spatial comparison. Since CLTs are a primarily place-based, community-focused model (and since their forms, regulations, and operations vary so widely from trust to trust), I believe it is crucial to examine their effects at such a level.

Another study of land trusts, also a Lincoln Institute of Land Policy working paper, relies on similar self-reported survey results and compares individual CLTs, rather than the effects of a particular CLT. Undertaken by Yesim Sungu-Eryilmaz and Rosalind Greenstein in 2007, this study's main goal "was to obtain baseline information from organizations using the CLT model", concerning their structure, operations, and history, "since there is no pre-existing body of systematic empirical information about the work of CLTs". It did not examine the effectiveness or impact of the CLTs surveyed;

moreover, the data gathered relied on self-reporting and may have been skewed due to non-response errors. The authors of this paper recognize the need and opportunity for “systematically address[ing] evaluative questions about the effectiveness of the CLT model” and note that particular questions will require different levels of analysis:

“To understand the contribution that the CLT makes in adding to and preserving the stock of permanently affordable housing, we will need analysis at the level of the local housing market; to understand the role that the CLT makes towards community building, we will need analysis at the level of the community.” (Sungu-Eryilmaz and Greenstein 2007).

A similar 2001 survey of eighteen CLTs nationwide, conducted by George Levinger for the now-defunct Institute for Community Economics (ICE), went into more detail. The survey’s purpose was “to gather information about respondents’ CLT homeownership experience”, interviewing 216 homeowners total. Results largely supported the CLT model; for example, 91% of respondents were satisfied with their home on a CLT, and 95% agreed that the CLT “enabled them to become homeowners more quickly than they otherwise would have” (Levinger 2001). Yet Levinger, too, called for further research at multiple scales and on various topics, particularly given the diversity of CLT operations and contexts.

The one published study that examined a single land trust (rather than a sample of CLTs) from a semi-quantitative perspective, conducted by John Davis and Amy Demetrowitz in 2003, provides the closest analogy to the approach taken in this thesis. The authors examined resales, affordability, foreclosures, and household wealth and

mobility on the Burlington Community Land Trust—a similarly large and well-established CLT, though its housing market differs from that of Boston. The study, which combined portfolio analysis and homeowner surveys found that “the performance of the BCLT’s portfolio of resale-restricted, owner-occupied housing provides encouraging evidence of the model’s effectiveness” (Davis and Demetrowitz 2003). However, one limitation of this study is that it does not provide a consistent control for its analysis. While Davis and Demetrowitz compare median prices of BCLT resales, for instance, to county-level median sales prices of market-rate homes, they do not establish whether this larger area is comparable in terms of demographics, land use, or transit access, nor do they calculate the statistical significance of their findings.

My thesis hopefully helps address part of this research gap and provides a deeper analysis, taking a closer look at the effects of DSNI’s land trust in particular. It takes the unusual approach of using GIS mapping to visualize findings and establish control variables. It also offers a community benefit, in that it will either strengthen the case for DSNI’s land trust in preserving affordability and stabilizing the neighborhood or help show where the model’s effects might be insignificant or unclear.

Chapter 3: The History and Context of the DSNI Land Trust

The story of the Dudley neighborhood, leading to the founding of DSNI and the creation of the community land trust, is an all-too-familiar one in the history of many American cities. It began as a white immigrant enclave before blockbusting, white flight,

and redlining combined with the Great Migration made it the heart of Boston's black community. In the late 1960s and 1970s, disinvestment, municipal neglect, and economic decline brought trouble to the area, while formerly thriving, predominantly black-owned businesses and middle-class families waned. From 1960 to 1970 alone, Roxbury (which includes much of the Dudley neighborhood) lost an estimated 6,000 housing units largely to arson and ill-conceived urban renewal projects (BRA *Boston by the Numbers: Housing* 2013). By the early 1980s, the aforementioned book *Streets of Hope* and the documentary *Holding Ground* as well as contemporary newspaper articles portray a politically powerless and neglected neighborhood blighted by abandoned cars, dumping, and failed redevelopment efforts.

The earliest maps of the Dudley Triangle still in possession of DSNI staff underscore how radically the neighborhood's landscape has changed since then. Whole swathes of streets were empty of buildings, whereas today the remaining vacant lots merely pockmark the neighborhood (see following pages, Figures 4 and 5). Census data bears out this difference: poverty rates were higher in 1980, income levels lower (a median household income of \$11,500 in the triangle, or about \$32,800 in today's terms) (see Appendix, Figures 20 and 21). Yet the area remains one of the poorest in the city (median household income in 2000 was \$27,000, or around \$36,700 today), and still has many more empty lots than other parts of Boston.

Figure 4: Vacant lots in the Dudley Triangle, c. 1987-1988. (DSNI N.d.)

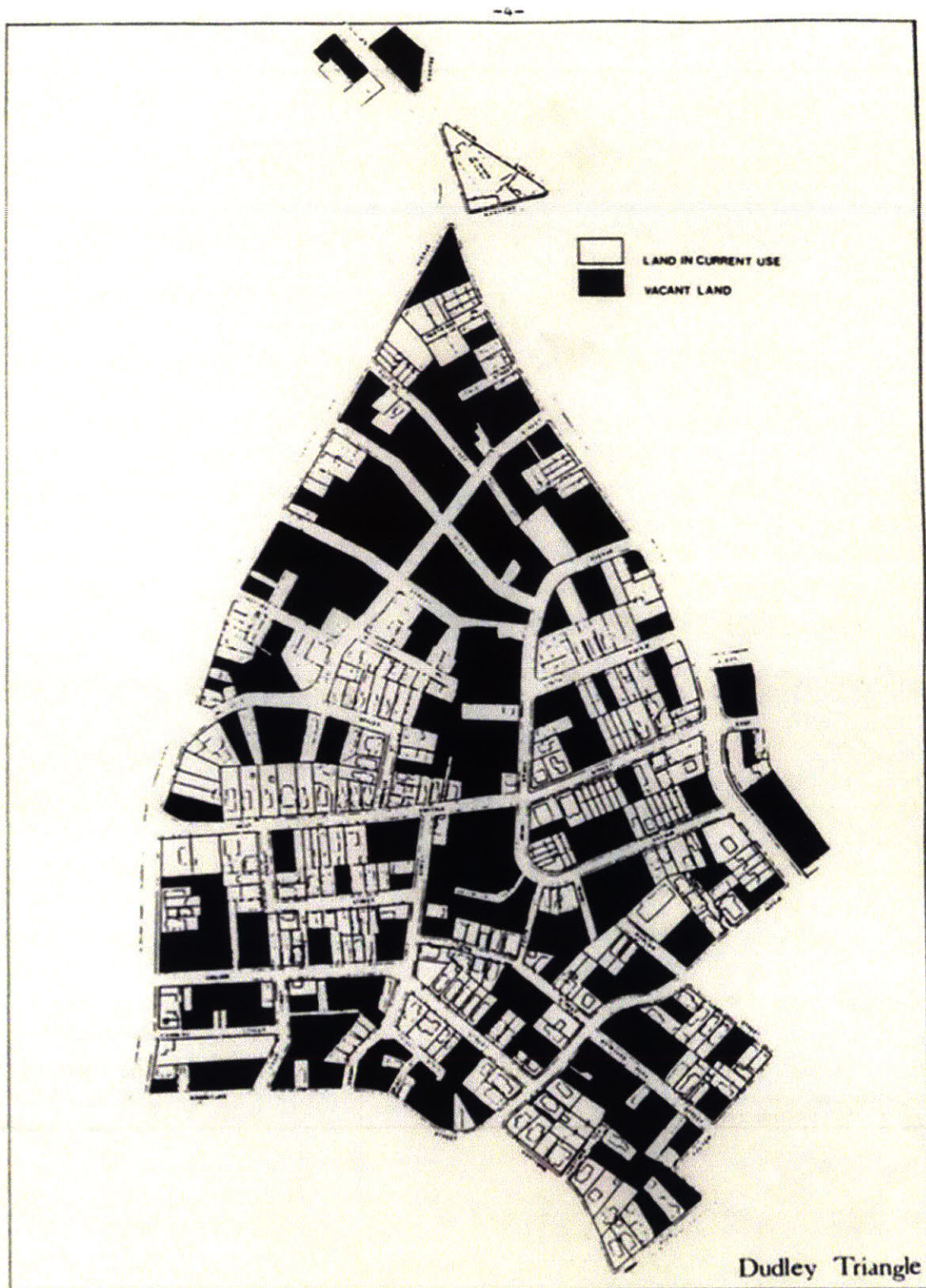


Figure 5: Vacant lots in the Dudley Triangle, 2014. Data sources: MIT, City of Boston Assessing Department, DSNI.



Apart from maps and Census numbers, plenty of residents and DSNI staff members (current and former) remember quite well what the area used to be like. Longtime residents remember that Mary Hannon Park, now bordered by land trust properties and the venue of DSNI's annual Multicultural Festival, was once an unsafe place, where drug dealing was rampant and parents did not allow their children to go play (Everdell 2015, Dwyer 2014)³. As resident Julio Henriquez said, "When we moved here as a family, the whole community was just really devastated," with vacant lots full of litter and dumped cars (*Gaining Ground* 2014). Yet despite these challenges, residents had not given up on their community.

As Laura Gail Spark wrote in her 1992 thesis on DSNI's youth programming, things began to change in the 1980s, when:

[I]ntense city-wide development pressures, coupled with the abundance of vacant land in the Dudley Triangle, caused a reversal of this official inattention.

As the city began looking to oft-bypassed Roxbury plots for potential development opportunities, Dudley residents became concerned that they would rapidly lose control over their community--either via the hands of outside speculators or through continued abuse and dumping on abandoned properties.

Many living in Roxbury had previously seen the effects of urban renewal and development on other parts of the city, particularly the nearby South End and the West

³ This park was reclaimed in the early 90's through the efforts of DSNI community organizers, who organized the first cultural festival and a summer camp in the space. See Spark; Sklar and Medoff.

End, and had witnessed or participated in successful opposition to the proposed Southwest Expressway through the heart of Boston (Crockett 2012).

Around the same time, a new wave of immigration brought many Latino and Cape Verdean families to the neighborhood, and they became involved in identity-based organizations like La Alianza Hispana and the Cape Verdean Community House (Sklar and Medoff 1994). These new arrivals contributed energy and growth to the area (as well as several restaurants that became neighborhood favorites), but they too were concerned about blight, displacement, crime, and the lack of quality affordable housing. As the DSNI website states, the organization “was formed in 1984 when residents of the Dudley Street area came together out of fear and anger to revive their neighborhood that was devastated by arson, disinvestment, neglect and redlining practices, and protect it from outside speculators” (DSNI 2014).

Rooted in these residents’ determined activism and their desire for greater community voice in redevelopment, the newly-formed organization both pushed for immediate halts to dumping and coordinated a long-term, comprehensive planning effort for the neighborhood. Community members also spurred DSNI to establish a tripartite board of governance (common among land trusts), with a minimum of sixteen seats for local residents, twelve of which would represent the major ethnic groups in the neighborhood (Putnam 2003). Apart from the land trust itself, these three features—the sustained emphasis on community organizing and empowerment, a long-term, comprehensive view of planning, and active community governance—set DSNI apart from the main affordable housing developers in the Dudley area.

OTHER ACTORS: COMMUNITY DEVELOPERS IN DUDLEY

DSNI is not the only organization in the area concerned with both community-building and affordable housing. According to Joe Kriesberg of MACDC, there are three main community development corporations (CDCs) operating in the neighborhood: Nuestra Comunidad Community Development Corporation, Dorchester Bay Economic Development Corporation, and Madison Park Development Corporation (2015). A fourth development organization, Quincy Geneva Housing Corporation, has also had some influence on the Grove Hall area. While not a CDC, the multi-service organization Project Hope has partnered with DSNI over the years, and has contributed to housing and stability in the area. However, I will focus here on the first three organizations since it seems they have had a larger direct impact on housing within the study areas.

Nuestra Comunidad was founded in 1981 by community members in conjunction with La Alianza Hispana, born from the same needs and hopes as DSNI: to deal with neighborhood issues like crime and vacancy, to empower predominantly immigrant residents, and to bring new life and new, affordable homes to the community (Nuestra Comunidad CDC N.d.). In fact, Nuestra Comunidad was a member of the Dudley Advisory Board funded by the Riley Foundation, which gave rise to DSNI (Sklar and Medoff 1994). Their current focus area overlaps that of DSNI, and they have partnered as a land trust developer on the Stafford Heights Co-ops, Howard Dacia Townhouses Co-op, and 10 units on Sargent Street (see Appendix, Figure 13).

Founded in 1979, Dorchester Bay EDC has built nearly 1000 units across Dorchester, about three-quarters of which are rental units, and also provides some

home improvement and business loans (Dorchester Bay EDC N.d.). Its service area covers most of the Dudley Village Campus, and they have partnered with DSNI on the land trust's Dudley Village Homes, the Alexander/Magnolia Co-ops, and most recently the Bornstein Pearl Food Production Center (see Appendix, Figure 13). Since community organizations and religious institutions participate in DSNI's tri-partite governance structure, a representative from Dorchester Bay EDC currently serves on the Board.

The oldest of the three local CDCs, Madison Park Development Corporation (MPDC) was established in 1966 in opposition to urban renewal projects that had already razed parts of Roxbury; its original name was the Lower Roxbury Community Corporation. MPDC is dedicated to "promoting the notion of resident-led development", and has developed over 500 units of affordable housing, mostly clustered near Dudley Square (Madison Park Development Corporation N.d.). Over the years, it has shifted from merely focusing on housing development to offering youth programming and other services. Along with Dorchester Bay EDC and Project Hope, a representative from MPDC currently serves on the Board of DSNI.

FORMATION OF THE LAND TRUST

The story of DSNI's creation is well documented in *Streets of Hope*, in *Holding Ground and Gaining Ground*, and on DSNI's website. Less clear, however, is where the idea for a community land trust in Dudley came from. *Streets of Hope*, otherwise quite detailed in its coverage of DSNI's early history, does not describe the precise origins of the land trust concept. Longtime organizer Ros Everdell said it came from community members, out of a desire for community ownership (interview). May Louie remembers

that the now-defunct Institute for Community Economics (ICE) brought the land trust idea to the Dudley neighborhood around 1987 or 1988 (interview). At any rate, when the “Dudley Street Neighborhood Initiative Revitalization Plan” was published in September 1987, this comprehensive plan created by community members and consultants recommended the land trust model, though it emphasized its use as a “mechanism that would allow the acquisition of land” rather than as a means of maintaining affordability. Yet given that development without displacement was a founding goal of DSNI, and given residents’ active involvement and desire for community control, it is easy to see why the land trust concept caught on so readily.

The land trust gained even more momentum early on, as DSNI added a unique tool to its development without displacement arsenal: the power of eminent domain. Commonly cited as the only community organization in the United States possessing eminent domain, DSNI perhaps paradoxically utilized a state law intended for urban renewal projects to gain this unusual power, Chapter 121A (Keating 1994, Meehan 2014, Putnam 2003, Taylor 1995). Among the statute’s goals were “achieving permanent and comprehensive elimination of existing slums, and sub-standard, decadent and blighted conditions and in preventing the recurrence or redevelopment of such conditions” (Massachusetts General Court 1946).

According to *Streets of Hope*, the idea to employ eminent domain first came from community developer Peter Munkenbeck, who along with DSNI’s then-Executive Director Peter Medoff realized it would be difficult to assemble and acquire scattered vacant parcels for development (Sklar and Medoff 1994). DSNI then asked a legal firm

working *pro bono* for them to research the possibility of using eminent domain. The firm members found that it would indeed be possible, under Chapter 121A's provisions, if DSNI managed to "secure the approval of both the BRA board and the mayor" (Sklar and Medoff 1994). Unaware of this behind-the-scenes research, the BRA director independently suggested that DSNI apply for permission to use Chapter 121A, perhaps (as some have suspected) in order to free BRA and the city from the responsibility for the vacant lots and blighted properties that pockmarked Dudley (Sklar and Medoff 1994). Mayor Ray Flynn likewise approved giving DSNI eminent domain powers, having witnessed the strength of DSNI's community organizing in battling illegal dumping in the neighborhood; some suspected this also may have had to do with other Roxbury residents' threats, at the time, to secede from Boston and form a separate city called Mandela (Sklar and Medoff 1994, Overbea 1986).

Whatever the motivations of various city actors, DSNI members saw this as a rare opportunity, yet also a serious responsibility and a potential source of conflict. Many in the community had witnessed the displacement and neighborhood disruption wrought by urban renewal in the West End and nearby South End, and they were understandably wary of a tool primarily used for such mega-projects (Sklar and Medoff 1994, Louie 2014). As former DSNI staff member May Louie notes, "Communities of color were so often targeted that 'urban renewal' came to be known as 'Negro removal'" (2014). Additionally, the BRA had previously used eminent domain to acquire and clear huge tracts of land for the Southwest Expressway, spurring community outcry (Crockett 2012, Molina Costa 2011, Louie 2014). DSNI, by contrast, was (and remains)

explicitly dedicated to community control and participatory planning; its members, staff, and volunteers were determined to use the power of eminent domain to achieve careful, community-driven goals, rather than top-down technocratic directives or speculative development.

COMMUNITY LAND TRUST: AN UNUSUAL APPROACH

The fact that, from its inception, one of the land trust's primary goals was to promote development without displacement sets it apart from many other community organizations and approaches to affordable housing. This seems remarkably prescient on the part of DSNI's founders, given that the Dudley area has gone from a cold market to a much warmer one in its history. As longtime staff member Ros Everdell remembers, when the land trust was first formed, "many people [in Roxbury] had been pushed out of other places [...] out of the South End, out of the West End, even though we had tons of vacant land. [...] Residents wanted to stay, they wanted their children to inherit" (and afford to keep) their homes (interview). Thus, even though the neighborhood had been essentially written off by private developers by the mid-1980s, the past experiences of many community members with urban renewal-fuelled displacement as well as their own hopes to build multigenerational financial stability gave the founders of the land trust a unique forward-looking perspective. It gave them a strong interest in maintaining community control over revitalization efforts, which as previously mentioned was another core motivation behind the establishment of DSNI.

Research indicates that community land trusts provide a much-needed boost for low- to moderate-income minority families towards homeownership and greater

financial stability. Homeownership rates in the US vary widely by race and ethnicity, from “73 percent for whites as compared to 47 percent of Latinos and 45 percent of Blacks”, which contributes greatly towards the racial wealth gap and reduces financial stability for minority families (Sullivan et al. 2015). According to 2010 Census data, the overall homeownership rate in the Boston metropolitan area averaged 66 percent; in that year, 68 percent of white residents owned homes, compared to 33 percent of black residents, and 25 percent of Latino residents (US Census Bureau 2015, DiversityData N.d.). Further research on the full financial impact of CLTs on individual households is needed; however, work by John Davis and researchers affiliated with the National Community Land Trust Network supports anecdotal claims that CLTs serve populations that often struggle to access loans, and reduce the cumulative amount of subsidies required to make up that credit gap.

Community land trusts are also unique because they can represent an alternative system to the typical speculative development and equity-building model, which can in turn disrupt the political status quo. As Logan and Molotch state in *Urban Fortunes*, the “growth machine” view of the city depends on land and its exchange value; political regimes and economic elites ultimately derive much of their power from real estate (1987). This emphasis on growth can lead to development pressures in neighborhoods like Dudley, whose residents may not benefit from the political power or from the private financial returns on development. In separating land ownership from homeownership, the CLT model isolates land’s use value from its exchange value via the ground lease mechanism. This lease, with a 99-year term in the case of DSNI and

numerous other CLTs, both establishes a strong relationship between the CLT and the homeowner and provides the CLT with long-term legal power over the disposal and development of the land. It emphasizes the social benefits (i.e., the use value) of providing affordable housing, retaining long-term affordability, and reducing subsidy loss by restricting the resale price increase (i.e., the exchange value) (Marcuse 2013). While many community organizations, as Logan and Molotch put it, “become a counter-response on behalf of use value goals”, CLTs do more than advocate (1987): they put into practice an alternative vision of what development and land value can look like, particularly in hot or fast-growing markets or when the CLT has a critical mass of land under its control.

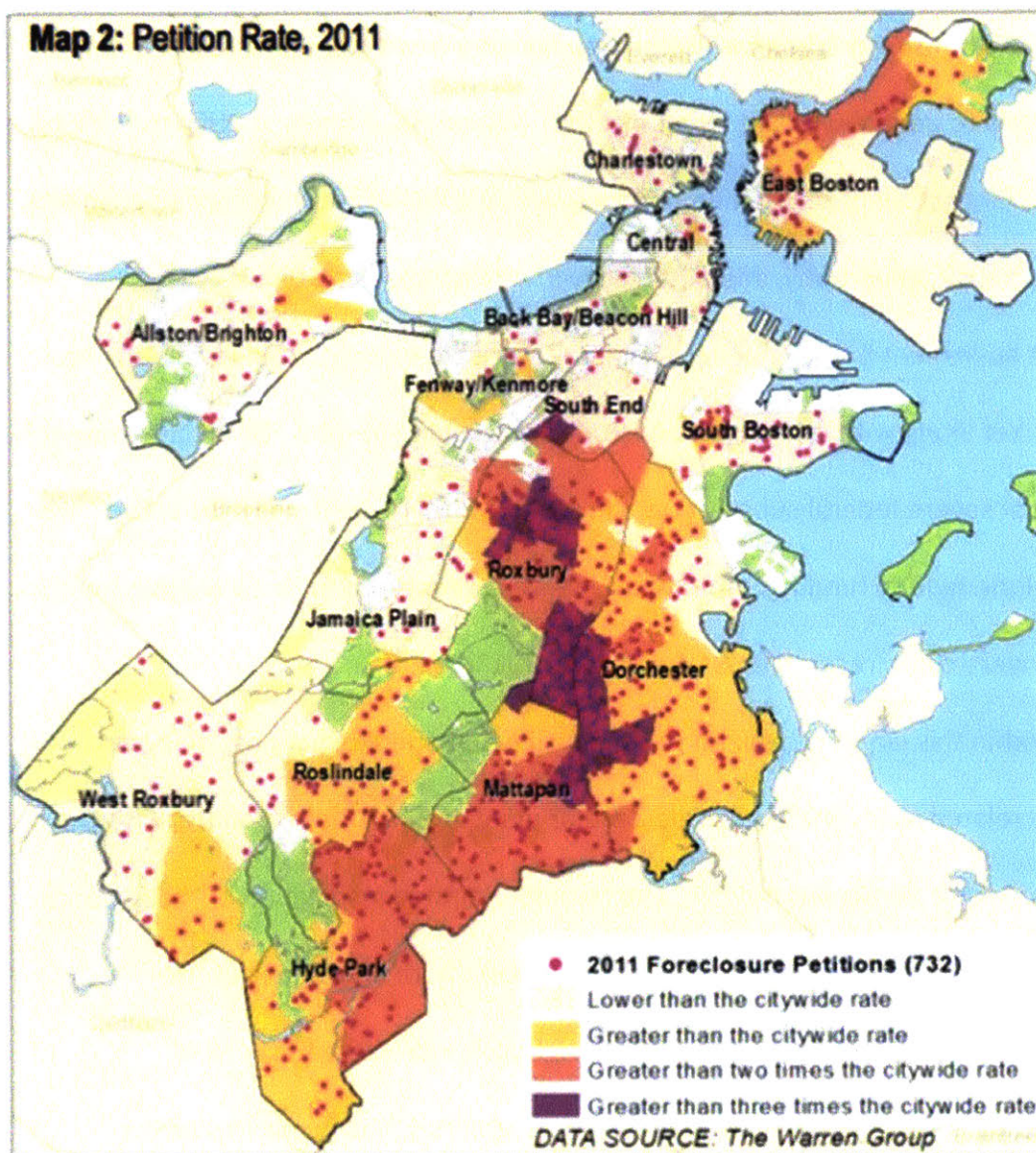
Why does the land matter? While other factors of production and revenue generation are mobile and therefore difficult to control, land is not. This truism not only affects firms and city governments, but urban organizations as well. As Paul Peterson writes in *City Limits*, “urban politics is above all the politics of land use” (1981). In a neighborhood with little economic clout and a history of political and social marginalization, control over land is a significant source of power—and, one could argue, an empowering experience for community members involved in the land trust. If the CLT model does indeed address problems like financial instability in an effective way, while promoting resident participation and control, it could provide a very useful tool for communities facing uncertain futures or development pressures. Thus, a spatial analysis of variables like homeownership rates (measured by owner-occupancy data), vacant lots, building values, land values, and foreclosures, could support the premise

that CLTs can boost neighborhood stability while keeping housing affordable, and could help other communities in Boston or nationwide decide whether to establish or grow their own community land trusts.

HOUSING IN BOSTON: FROM COOL TO HOT

In order to contextualize current and past property values and the other variables under study in the Dudley area, it is important to look at the larger Boston housing climate. Over the thirty years of DSNI's existence, Boston's housing demand has risen considerably, going from a lukewarm market with excess supply to one of the hottest real estate markets in the country (Bluestone et al. 2015). Even the recent recession had only a limited impact on housing prices and supply in the city as a whole, though certain parts of the city did face spatially-concentrated drops in housing values, including Roxbury and Dorchester. These areas saw large numbers of foreclosures as well, according to the city's Foreclosure Reports of 2010 and 2011, Warren Group data, and housing experts I interviewed (see Figure 6 on following page); in fact, two of the three areas targeted by Mayor Menino's Foreclosure Intervention Team (Dacia-Quincy and Langdon-Clarence) overlapped with the Dudley Triangle ("History of Boston's Foreclosure Prevention Initiative" N.d., Boston DND 2010, Boston DND 2011). Stemming largely from predatory loans and recession-fuelled unemployment, these foreclosures caused a ripple effect of evictions and former homeowners being forced to rejoin the rental market.

Figure 6: Neighborhoods hardest hit by foreclosure crisis in Boston (Boston DND 2011)



While Boston has a greater share of affordable units than many other American cities, a large portion of them within Roxbury, there is still a severe need for affordable housing in the city (Bluestone et al. 2015, BRA “Boston by the Numbers: Housing” 2013). As multiple interviewees, the Greater Boston Housing Report cards, and the Mayor’s recent housing report all describe it, Boston’s market as a whole suffered little during when the national housing bubble burst, and prices along with rent have only increased

since then. Tufts housing researcher Rachel Bratt observed, “certainly the last several years [...] the housing market has gotten unbelievably heated up [...] and extremely unaffordable to people who are lower income” (interview). Factors specific to the city, such as its large student population boosting demand for centrally-located apartments, as well as transit, geography, and a relatively low-height housing typology (the dominant apartment building being a triple-decker), have contributed to this strong demand. Yet along with other cities, Boston has struggled to fund affordable housing in the wake of severe federal subsidy cuts since the 1980s. Apart from Hope VI the area has seen little federal funding, more than one expert reported to me, and even housing vouchers were cut in recent years (Woolhouse 2013).

Within this larger context of rising housing demand, Roxbury has also seen pressures related to recent large-scale development around Dudley Square, with the renovation of the Ferdinand Building and the much-touted installation of the Roxbury Innovation Center. In local media, blogs, and reports from area agencies and universities, Roxbury is cited as one of the neighborhoods at greatest risk of gentrification. A recent Bay State Banner article asserted that “while the average African American family with a family income between \$60,000 and \$90,000 can afford a home in the \$300,000 range, single-family homes throughout Roxbury are now selling for \$500,000” (Miller 2014). Local organizations like ACE have held events for community residents concerned about gentrification, and a few local public meetings have been fraught with tension. Furthermore, the addition of new stops to the Fairmount/Indigo commuter rail line on the border with Dorchester (see Appendix,

Figures 14 and 15) as well as further plans for revitalization along that corridor have stoked some fears of displacement as well (“Mapping Neighborhood Transformation” 2014). These pressures demonstrate the value of a thorough analysis of DSNI’s land trust and its development without displacement mission. For all the debate over affordable housing and inequality, there have been few academic attempts to map or quantify these phenomena in Boston, though a recent effort by Boston University’s Urban Symposium (in conjunction with the Codman Square Neighborhood Development Corporation) and the UnGentry map bear attention (Code for Boston/Code for America 2015) (see Appendix, Figure 16).

Chapter 4: Methodology, Definitions, and Hypotheses

EVALUATING THE CLT MODEL

It is hard to find any criticism of DSNI and the DNI land trust, either in the literature or in local media. It has been cited in hundreds of books and scholarly articles, many newspaper and magazine articles, and at least two dozen theses from this very department, primarily as a shining example of community organizing and community-driven neighborhood revitalization. (The one criticism in Robert Putnam’s otherwise glowing description of DSNI as a community builder in *Better Together* is that the organization may need to explicitly address tension between Cape Verdean, Latino, and black American communities within the neighborhood and within the organization’s governance, to avoid appearance of favoritism (2003).) Yet in order to maintain its strong reputation and achieve the important goal of community-controlled

revitalization, DSNI should seek out thorough evaluations of its work and impacts.

Assessments of the land trust's successes and weaknesses will also provide benchmarks for the future and for comparison with other CLTs or housing models.

One limitation to such assessment is that virtually all studies of DSNI have involved qualitative research with little easily comparable information. None have utilized a quantitative or spatial approach to measure the impact of DSNI's land trust on the neighborhood to which it is dedicated. *Streets of Hope* contains some raw data from the late 1980s, such as the acreage of vacant land in the Dudley Triangle, yet it has not been used in any statistical analysis that I have found. While in-depth case studies certainly have benefits of their own, it is difficult to establish benchmarks or analyze physical and social changes over time without numerical or spatial data. This analysis attempts to address this by establishing a control area as a yardstick, against which it is possible to systematically measure the land trust's effects.

A recurring theme in the broader literature on CLTs is that land trust restrictions on resale prices increase or at least sustain the stock of affordable housing. In DSNI's case, I wanted to examine whether this holds true and whether land trust property values remained lower than those of neighboring residential properties. This latter comparison would help eliminate confounding variables and answer the question: are land trust properties more affordable because they tend to be located in neighborhoods with generally lower property values (compared to an entire metro area)? Without this comparison, it would be difficult to tell whether the affordability of land trust properties has anything to do with the land trust, or whether it is merely the result of underlying

economic forces, buyer preferences (and biases), social factors like crime and perceptions of crime, access to transit, street-level amenities, etc.

As mentioned before, community land trusts represent a place-based affordable housing model, unlike financial supports applied to an entire class of citizens or housing types. Additionally, many of the claims (supported by anecdotal evidence) about the benefits of community land trusts are spatial in nature: that they reduce blight in neighborhoods by usually developing vacant lots or abandoned properties; that they maintain housing affordability in areas where housing prices may be increasing or volatile. Finally, most land trusts explicitly focus on a particular neighborhood or area, and DSNI is no exception; thus, it is important to analyze their impact from a spatial perspective.

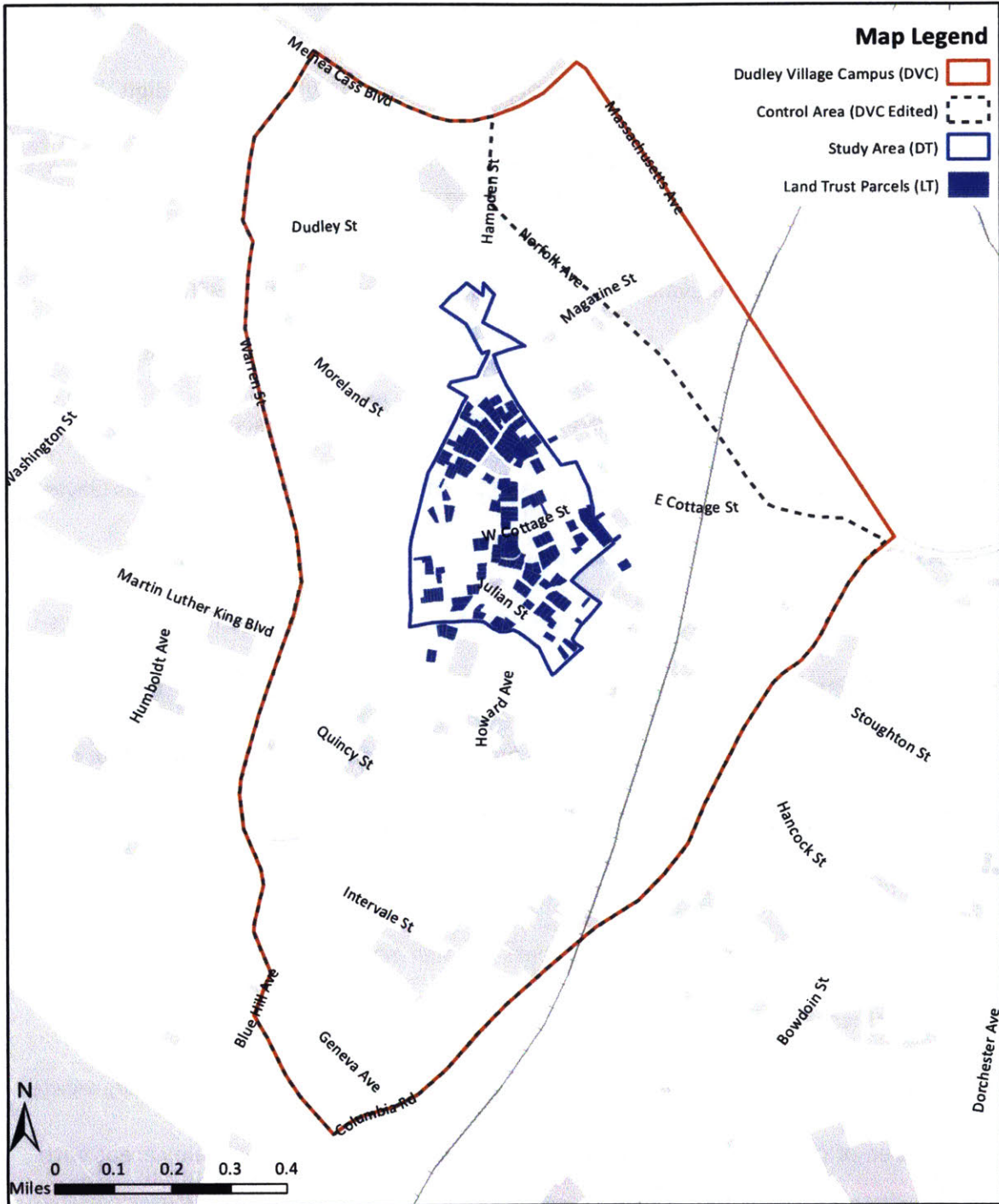
THE STUDY AREA

Currently, the DSNI land trust contains 225 units within the Roxbury neighborhood of Boston, with another single-family home currently under construction, as well as urban agriculture sites and limited commercial space. Fifty of those units are rental, while the remaining 175 are single-family homes or coops (see Appendix, Figure 13). These parcels, for the most part, cluster closely within the Dudley Triangle, the area of approximately 0.1 square miles bounded by Blue Hill Avenue, Howard Avenue, and Dudley Street over which DSNI has eminent domain (see Figure 7 on following page).

The Dudley Triangle, in turn, is encompassed by the Dudley Village Campus, now used by the organization to delineate a service area for programs such as the Boston Promise Initiative as well as to designate eligible voters for the DSNI board of

governance. The Dudley Village Campus (or DVC) covers about 1.4 square miles within Roxbury and Dorchester and is bounded by Columbia Road, Warren Street, Melnea Cass Boulevard, and Massachusetts Avenue (see following page, Figure 7). The land trust, Dudley Triangle, and the DVC serve as useful reference areas because they are used by DSNI staff, volunteers, and the Department of Neighborhood Development, and because they are largely similar in terms of population demographics, transportation access, building typology, and land use (see “Defining Independent & Control Variables” and Appendix, Figures 14, 15, and 17 through 25). Another advantage to examining the Dudley Village Campus is that it is small enough to form a fairly cohesive neighborhood, spatially speaking, while containing enough parcels to make up a strong statistical sample; if it were significantly larger, there would likely be a wider range of land uses and transit options, which could have skewed the data.

Figure 7: Dudley Village Campus, Dudley Triangle, and Land Trust



SOURCES OF DATA

In order to compare these sets of properties, I mapped and analyzed assessed building values and land values from the city of Boston's parcel shapefiles, digitally available with annual updates going back to 2000. These values come from the Assessing Department's property assessment surveys. According to the department's website, all properties are evaluated yearly and are valued in keeping with state law, which in principle "requires that all property be assessed at its fair cash value - what a willing buyer would pay to a willing seller" (City of Boston "Triennial Revaluation"). The valuation process itself undergoes review and certification every three years, as Gayle Willett of the Assessing Department explained.

However, in practice assessed values often do not reflect current market sales prices, particularly when the housing market is volatile. This is largely due to the fact that there is a lag between assessed prices and market value: as Willett explained, the data for fiscal year 2015, which sets the value for all properties as of January 1, 2014, is based on market values and sales leading up to that date, through the year of 2013. Markets with extremely low numbers of sales may also yield less accurate assessed values because the valuation process relies on comparable sales within that time period (Willett 2015). If there are too few to compare, the assessor will aggregate a larger area of properties, which could conceivably skew data for low-sales areas with differences in access to transit, building stock quality and age, etc.

Other sources of spatial data included the Warren Group, a local real estate tracking firm that gathers and sells data on foreclosures and other property

transactions, GIS data available from MassGIS and MIT Libraries, and ten-year Census records accessed through a program called GeoLytics. The Warren Group sources property transaction information directly from the Suffolk County Registry of Deeds and the Massachusetts Land Court; however, neither of these two agencies offers public digital access to multi-address datasets. (Instead, members of the public can only download records for each individual property, which would be unrealistic for this thesis given the number of properties analyzed.) In purchasing foreclosure data from the Warren Group, I was able to secure permission to share the data and maps based on it for non-commercial use. Finally, I confirmed the addresses, construction dates, and ownership of land trust parcels using records shared by Tony Hernandez at DSNi and by a Boston city official. Based on all this data, I defined dependent and independent variables.

DEFINING INDEPENDENT & CONTROL VARIABLES

Since my overall hypothesis is that the land trust has had a positive quantifiable impact on certain measures of housing affordability and neighborhood stability, the primary independent variable is defined as whether a given location is part of the land trust. The null hypothesis, as a result, is that there is no significant difference between land trust and non-land trust parcels in any measures of dependent variables (see Defining Dependent Variables). However, since there may be other factors affecting these measures, I introduced a control variable to boost the rigor of the analysis. As defined previously, the Dudley Village Campus is similar in many respects to the area encompassed by the land trust and is commonly referenced within the organization.

The primary control area, then, is roughly the extent of the DVC not including the land trust (see Figure 7).

However, a core tenet of DSNI and its members is that their interest in community control and revitalization extends beyond the land trust itself, to the entire neighborhood. Most of their initiatives go beyond the boundaries of the land trust, and non-land trust residents of the community serve on the organization's board each year. I thus wanted to examine whether the data indicated any corresponding trends in the dependent variables for the parcels surrounding the land trust.

A secondary hypothesis, then, is that one might see a spillover effect within the Dudley Triangle. For example, if building values are indeed slightly lower on the land trust, perhaps they help keep values of immediate neighbors lower and therefore promote long-term affordability, since valuation is generally based on comparable sales of nearby properties. To test this hypothesis, I used the Dudley Triangle as a secondary study area, comparing it to both the land trust and the larger DVC control area (see Figure 7) and assessing the existence of a spillover effect.

I also sought to ensure that there were no significant differences in demographic characteristics or transportation access between the study area and control area that might confound or skew the results. To do so, I compared ten-year Census data on poverty rates, annual median household income, and racial and ethnic makeup of the overall population at the block-group level, going back to 1980. Using a t-test of means, assuming unequal variance, I found no significant difference in poverty rates or median household income between the study area and control area in 1980, 1990, or 2000 (see

Appendix, Figures 20 and 21). The decennial Census offered this data at the block-group level via the long-form survey only through 2000, so 2010 is not included⁴.

Racial and ethnic demographics similarly showed no significant difference, except in the percentage of Hispanic/Latino residents and residents who marked “other race” in 1980 and 1990, which were higher in the Dudley Triangle than in the study area. However, these differences faded to statistical insignificance by 2000, when my parcel-level analysis began, so it is unlikely they would confound those results (see Appendix, Figures 20 through 25).

I also explored differences in transit access between the primary and secondary study areas and the control areas. Multiple bus routes and major roads crisscross the entire Dudley Village Campus, but it is poorly served by the subway since the Orange Line moved from Washington Street and Dudley Square (see Appendix, Figures 14 and 15). The nearest T stations, on the Orange Line, are around half a mile away as the crow flies; though the Silver Line supposedly offers a form of rapid transit to downtown, in practice it is just another slow bus route. The Fairmount/Indigo commuter rail line does run through the Dudley Village Campus, with a stop in Upham’s Corner and two more at Newmarket and Four Corners/Geneva (see Appendix, Figure 14). The latter two stops were added in 2013 after local advocates fought for transit access (Irons 2013); however, ridership has been low, primarily due to infrequent service (Handy 2013). Ultimately, I ascertained that the DVC and the Dudley Triangle have roughly similar

⁴ Beginning in 2010, the Census replaced the long-form survey with the ACS 5-year survey, which means comparing poverty and income measures between ten-year estimates and five-year estimates may yield inaccurate results. See www.census.gov/hhes/www/poverty/about/datasources/description.html

transit access due to distance from T stations, the similar levels of bus access and major thoroughfares, and the low ridership along the Fairmount corridor. However, this last factor may change in future years if service frequency increases, and moving forward transit access may have a more pronounced effect on parts of the Dudley neighborhood.

DEFINING DEPENDENT VARIABLES

Owner Occupancy

Owner occupancy rates can serve as an indicator of neighborhood stability. Higher rates of homeownership among neighborhood residents are associated with “improved property maintenance and longer lengths of tenure” (Rohe and Stewart 1996); however, they also tend to correlate with higher property values and sale prices. Roxbury’s homeownership rate, around 23%, remains well below Boston’s overall average of 34% (BRA *Boston by the Numbers: Housing* 2013). If DSNI’s land trust is truly living up to its goal of keeping housing at affordable prices while increasing opportunities for low-income residents to become homeowners, then there should be a higher level of owner occupancy on the land trust and, if a spillover effect exists, within the Dudley Triangle. It is possible that owner occupancy data may be slightly inaccurate—subletting part or all of a home is common in Boston, and may not be captured by the Assessing Department—but again, one may assume that this would affect all areas equally, and would thus be unlikely to affect the magnitude of the difference between areas.

Vacant Lots and Foreclosures

Vacant buildings and lots are seen as a hallmark of neighborhood disorder and disinvestment (Graves and Shuey 2013, Graves 2012). It is true that the condition and location of a particular vacant parcel, such as whether it is neatly maintained or a trash-strewn, overgrown lot, may affect its particular impact on surrounding property values, residents' perceptions, or crime incidences, it is clear that overall, a high percentage of visibly vacant properties within a neighborhood is a sign of trouble, as the founders of DSNI contended in the 1980s. Even today, many neighborhood residents continue to voice concern about crime, littering, and development of vacant parcels throughout the Dudley neighborhood, and many community organizing efforts and public meetings still focus on the issue. Given DSNI's longtime focus on vacant lots and its power of eminent domain, one might expect a steadily lower percentage of vacant lots on and near the land trust over time than in the larger neighborhood.

As for foreclosures, according to a recent survey of Roxbury and Dorchester by Boston Federal Reserve researcher Erin Graves, "vacant lots appear to increase Boston residents' sense of unease more than vacant homes do" (2012). While the research is more ambiguous on the neighborhood-level or parcel-level impact of foreclosures, high rates of foreclosures are generally seen as a sign of instability, similar to high vacancy rates. According to multiple housing experts that were interviewed as well as the city's Foreclosure Reports, while the crisis did not substantially affect some parts of Boston, Roxbury and Dorchester—including the Dudley area—suffered from many foreclosures

on sub-prime mortgaged homes. Additionally, as Joe Kriesberg from the Massachusetts Association of CDCs told me, “the vast majority of homes in foreclosure were sold to investors [...] many people became tenants, driving up rent, increasing homelessness and displacement” (Kriesberg 2015). On a large enough scale, this could reduce homeownership and social stability in a neighborhood.

CLTs, including DSNI’s land trust, may prevent foreclosures from being initiated and reduce the number of completed foreclosures within their boundaries. As the aforementioned working paper by Emily Thaden and Greg Rosenberg shows, community land trusts on the whole appear to have far fewer foreclosures than would be expected for the generally low-income populations and areas they serve. May Louie noted that DSNI worked with the city and “tried to negotiate with lenders” to prevent foreclosures not just on the land trust, but in the larger neighborhood (Louie 2015). I believe this should be reflected in the data for DSNI’s land trust in comparison with the control area, particularly during the worst of the recession.

Building Value & Land Value

Given that data for real sales prices and actual rents is incomplete and difficult to find, assessed building values must serve to capture housing prices. As previously mentioned, the assessed values lag behind actual values, and there may be some inaccuracies by virtue of the estimation and modeling involved. However, one can assume these inaccuracies affect all properties equally, both those on the land trust and

outside it, so any error introduced should not affect the difference between these groups.

My analysis is generally concerned with the land trust's impact on affordability—i.e., on keeping building values lower—primarily because this has been central to the land trust's purpose from its inception. As the *Dudley Street Neighborhood Initiative Revitalization Plan* states, “any new development should [...] strive to be affordable to the range of current residents in the community” (1987). From the 1960s through the 1980s, the same redlining, “white flight”-fuelled blight, urban renewal clearing, disinvestment, and arson that spurred residents and activists to form DSNI left the Dudley area virtually abandoned by the market. According to 1980 Census data, the average home value of the block groups encompassing the Dudley Village Campus was around \$18,650 (about \$53,150 in 2015 dollars)⁵.

However, according to the 1987 comprehensive neighborhood plan, by the time DSNI was considering a land trust, the average sales price for a single-family home had risen to \$106,250 (about \$219,500 in 2015), while a triple-decker cost around \$150,000 (around \$308,000 today) (*Dudley Street Neighborhood Initiative Revitalization Plan* 1987). By 1990, Census records show an average home value of nearly \$117,450 (about \$211,000 in 2015) in the Dudley Village Campus block groups. This means that by the time the first housing was being built on the land trust, the neighborhood was already witnessing the effects of Boston's housing market “warming up”, and residents were

⁵ To adjust for inflation, I used the CPI Inflation Calculator produced by the US Bureau of Labor Statistics. See http://www.bls.gov/data/inflation_calculator.htm.

justified in their concerns about speculation and pricing out. Moreover, many were wary of the neighborhood becoming a victim of its own success, experiencing development **with** displacement as many had witnessed in the South End (Everdell 2015). Thus, for the sake of this analysis, I will focus on the impact of the land trust in restraining building values over time, rather than increasing them.

Land values per square foot are also analyzed in an attempt to capture development pressures and neighborhood stability. If the value of lots in a neighborhood is rising dramatically, it could signal strong interest by developers and thus a potential displacement threat, which could lead to neighborhood instability as long-time residents sell or newcomers move in. Higher land values (along with building values) also lead to higher tax bills, which can put a financial strain on low-income homeowners, reducing overall housing affordability. Given how the land trust operates and the restrictions on resale, one would anticipate lower building and land values compared to those of the study area.

SPATIAL & QUANTITATIVE METHODS USED

Spatial analysis of community land trusts is rare, but offers new insights into their impact and context. Datasets were produced using ArcGIS, by spatially clipping parcels using the boundary of the Dudley Village Campus and then removing parcels in the land trust and the Dudley Triangle. I found it necessary to limit the area of analysis in order to account for skewing values. Namely, I slightly altered the boundary of the Dudley Village Campus to remove a largely industrial section in the northeastern corner, whose building values, land values, parcel sizes, and owner-occupancy rates were very

different from those of the Dudley Triangle and surrounding areas, and would have highly skewed the analysis (see Appendix, Figures 17 through 19). This was done in an effort to reduce confounding variables and ensure the control area and study area would be similar enough to allow for accurate comparison.

After verifying the overall consistency of the resulting data and creating binary dummies for categorical variables like vacancy status and owner occupancy, I then compared and analyzed datasets by year using Stata statistical software. To learn whether the dependent variables significantly differed between the study area and control area, I first utilized a two-tailed t-test (assuming unequal variance). Next, I used summary statistics and regression to build up a quantitative picture of the land trust's impact. In the case of foreclosures, I also used Getis-Ord G_i^* spatial analysis tool to identify statistically significant "hot spots" and "cool spots" for foreclosed homes (Center for Regionalism and Analytical Planning 2015).

QUALITATIVE METHODS USED

In order to contextualize and interpret the findings of this analysis, I also conducted interviews with key informants and experts. For each interview subject I employed one of three standardized questionnaires based on the area of their expertise, reordering or dropping questions as necessary to best reflect their knowledge. If given permission, I recorded interviews (which took place either over the phone or in person) for later transcription and took notes to assist my own understanding. To create an initial list of interview subjects, I drew upon the advice of my thesis reader and upon the main sources I used in my literature review, such as John

Davis and Emily Thaden. I then used a snowballing method, asking each interviewee to identify a few other people whom I should contact, and contacted those whose names came up repeatedly.

The interview subjects fell into three main categories: experts on the Boston housing market, particularly affordable housing; those with knowledge of a particular area relevant to my analysis, such as community land trusts or foreclosures; and those with specific knowledge of the DSNi land trust. I conducted twelve interviews total, in person and over the phone, using the standardized questionnaires mentioned before with some adaptations for each source, reflecting their particular expertise (see Appendix for research instruments). In a couple of instances, slightly less formal interviews that did not follow the standardized questionnaires allowed me to better understand processes affecting my spatial analysis and quantitative data. The final stages of reviewing and organizing notes, doing partial transcriptions, coding, and analyzing responses yielded additional insights, cautions, and support for the spatial analysis. I also cross-compared answers to recurring questions, to triangulate points of agreement among sources and identify unusual or unique responses that might reveal new perspectives. All in all, these interviews deepened my understanding of the CLT model and of the history and inner workings of DSNi's land trust, while confirming a general narrative of the Boston housing market underpinning many of my hypotheses.

Chapter 5: Analysis & Results

SPATIAL & QUANTITATIVE RESULTS

The results of the quantitative analysis proved quite interesting and a little surprising (see Figures 8 and 9 on following pages and Appendix, Figures 26 through 40).

The differences between the land trust (study area) and the rest of the Dudley Village Campus (control area) were sharp and for the most part supported my hypotheses:

- building values on the land trust (LT) were indeed significantly lower than those outside the LT over all years except 2000, confirming my hypothesis
- land values, by contrast, were more mixed: significantly higher on the LT in 2000 and 2005, no different from the study area in 2010, and lower in 2014
- vacant lots are quite significantly less prevalent on the land trust than in the

% Change in Proportion of Vacant Lots		
Years	DVC-LT	LT
2000-2005	-4.0%	-13.8%
2005-2010	-5.5%	-9.8%
2010-2014	0.8%	0.0%

surrounding neighborhood in all years, and are generally being developed faster than vacant lots outside of the land trust (see chart at left)

- owner-occupancy rates are slightly mixed: not significantly different in 2000, they later grew to be higher on the land trust at a significance level of $p < 0.05$

- foreclosures were indeed lower on the land trust than in the control area; however, the difference was statistically significant only in 2010 and 2014 (largely due to the small number of observations in 2000 and 2005)

Beyond the land trust, I also compared the larger Dudley Triangle over which DSNi has eminent domain, to see if there are any spillover effects from the land trust.

- assessed building values are significantly lower within the Dudley Triangle than in the control area. In fact, on average, they were lower than the average land trust property, however further analysis revealed this was skewed by a higher percentage of vacant lots in the Dudley Triangle than on the land trust, since vacant parcels' building values are listed as zero. Therefore there may or may not be a spillover effect from the land trust.
- average total land values are significantly lower than in the control area; however, per square foot land values vary considerably
- vacancy rates are more mixed: significantly lower than the control area in 2000 and 2005, they increased to no significant difference in 2010 and 2014—possibly as an effect of the economic crisis or due to inaccurate data entry
- the differences in owner-occupancy rates and foreclosures are likewise mixed and vary by year; foreclosures were slightly lower within the Dudley Triangle than in the study area except in 2005, but not to a level of strong statistical significance

Land Trust (LT) Study Area versus Dudley Village Campus (DVC-LT) Control Area

Figure 8: Results of two-sided t-tests of means

	2000			2005		
	DVC-LT	LT	t	DVC-LT	LT	t
Building Value	\$87,913	\$71,166	(1.366)	\$196,652	\$70,761	(10.570)***
PSF Bldg Value	\$1,349.55	\$52.32	(3.444)***	\$53.22	\$40.19	(6.382)***
Land Value	\$34,011	\$54,781	(-6.850)***	\$44,712	\$59,618	(-4.946)***
PSF Land Value	\$107.10	\$46.92	(20.731)***	\$9.48	\$16.18	(-9.100)***
% Owner Occupancy	26.9%	28.6%	(-0.487)	30.3%	38.9%	(-2.470)*
% Vacancies	18.9%	2.9%	(11.653)***	18.2%	2.5%	(12.867)***
Vacant Parcels	942	5		898	5	
% Foreclosures	0.04%	0.00%	(1.414)	0.14%	0.49%	(-0.708)
Foreclosures	2	0		7	1	
# Parcels Observed	4975	175	5150	4942	203	5145
*** p < 0.001						
** p < 0.01						
* p < 0.05						

	2010			2014		
	DVC-LT	LT	t	DVC-LT	LT	t
Building Value	\$184,816	\$107,093	(4.724)***	\$193,398	\$107,093	(5.230)***
PSF Bldg Value	\$42.68	\$45.00	(-1.354)	\$524.12	\$45.00	(2.000)*
Land Value	\$84,516	\$76,670	(1.270)	\$108,389	\$76,670	(4.528)***
PSF Land Value	\$18.73	\$17.88	(1.296)	\$22.62	\$17.88	(7.033)***
% Owner Occupancy	32.3%	42.7%	(-3.063)**	33.1%	41.8%	(-2.574)*
% Vacancies	17.2%	2.2%	(13.230)***	17.3%	2.2%	(13.329)***
Vacant Parcels	799	5		799	5	
% Foreclosures	1.01%	0.00%	(6.890)***	0.11%	0.00%	(2.237)*
Foreclosures	47	0		5	0	
# Parcels Observed	4655	225	4880	4618	225	4843
*** p < 0.001						
** p < 0.01						
* p < 0.05						

Notes:

- # of Parcels Observed varies from year to year for the Land Trust as number of land trust parcels grows and for the DVC as parcels are combined for development or were entered without complete data (and thus were dropped in Stata).
- Since there can be multiple foreclosures filed per address, the number of foreclosures may not correspond to the number of distinct homes or addresses which were foreclosed on.
- PSF Building and Land Values show high variation, likely pointing to either skewing effects from outliers or inaccuracies in data (for example, inaccurate estimates of floor area).

Dudley Triangle (DT) Study Area versus Dudley Village Campus (DVC-DT) Control Area

Figure 9: Results of two-sided tests of means

	2000			2005		
	DVC-DT	DT	t	DVC-DT	DT	t
Building Value	\$93,240	\$53,302	(2.784)**	\$203,599	\$156,188	(3.0604)**
PSF Bldg Value	\$1,528.18	\$80.64	(3.281)**	\$51.74	\$66.17	(-6.356)***
Land Value	\$35,257	\$25,407	(6.853)***	\$46,008	\$36,576	(4.754)***
PSF Land Value	\$111.69	\$20.77	(44.437)***	\$9.28	\$10.84	(-5.754)***
% Owner Occupancy	28.2%	17.4%	(6.980)***	31.7%	36.9%	(-2.692)**
% Vacancies	19.8%	13.4%	(4.6194)***	18.7%	14.6%	(2.826)**
Vacant Parcels	851	100		805	106	
% Foreclosures	0.05%	0.00%	(1.414)	0.12%	0.41%	(-1.219)
Foreclosures	2	0		5	3	
# Parcels Observed	4300	747	5047	4312	728	5040
*** p < 0.001						
** p < 0.01						
* p < 0.05						

	2010			2014		
	DVC-DT	DT	t	DVC-DT	DT	t
Building Value	\$190,794	\$126,661	(5.529)***	\$199,291	\$136,398	(5.331)***
PSF Bldg Value	\$42.54	\$43.10	(-0.587)	\$570.72	\$49.13	(1.982)*
Land Value	\$86,834	\$67,096	(5.976)***	\$112,011	\$79,126	(6.102)***
PSF Land Value	\$18.54	\$19.36	(-1.783)	\$22.38	\$22.52	(-0.243)
% Owner Occupancy	32.6%	29.9%	(1.448)	33.6%	31.1%	(1.356)
% Vacancies	16.7%	15.2%	(1.051)	16.8%	15.5%	(0.906)
Vacant Parcels	706	107		703	109	
% Foreclosures	1.04%	0.57%	(1.464)	0.12%	0.0%	(2.237)*
Foreclosures	44	4		5	0	
# Parcels Observed	4222	705	4927	4184	705	4889
*** p < 0.001						
** p < 0.01						
* p < 0.05						

Notes:

- # of Parcels Observed varies from year to year for the Dudley Triangle as number of land trust parcels grows and for the DVC as parcels are combined for development or were entered without complete data (and thus were dropped in Stata).
- Since there can be multiple foreclosures filed per address, the number of foreclosures may not correspond to the number of distinct homes or addresses which were foreclosed on.
- PSF Building and Land Values show high variation, likely pointing to either skewing effects from outliers or inaccuracies in data (for example, inaccurate estimates of floor area).

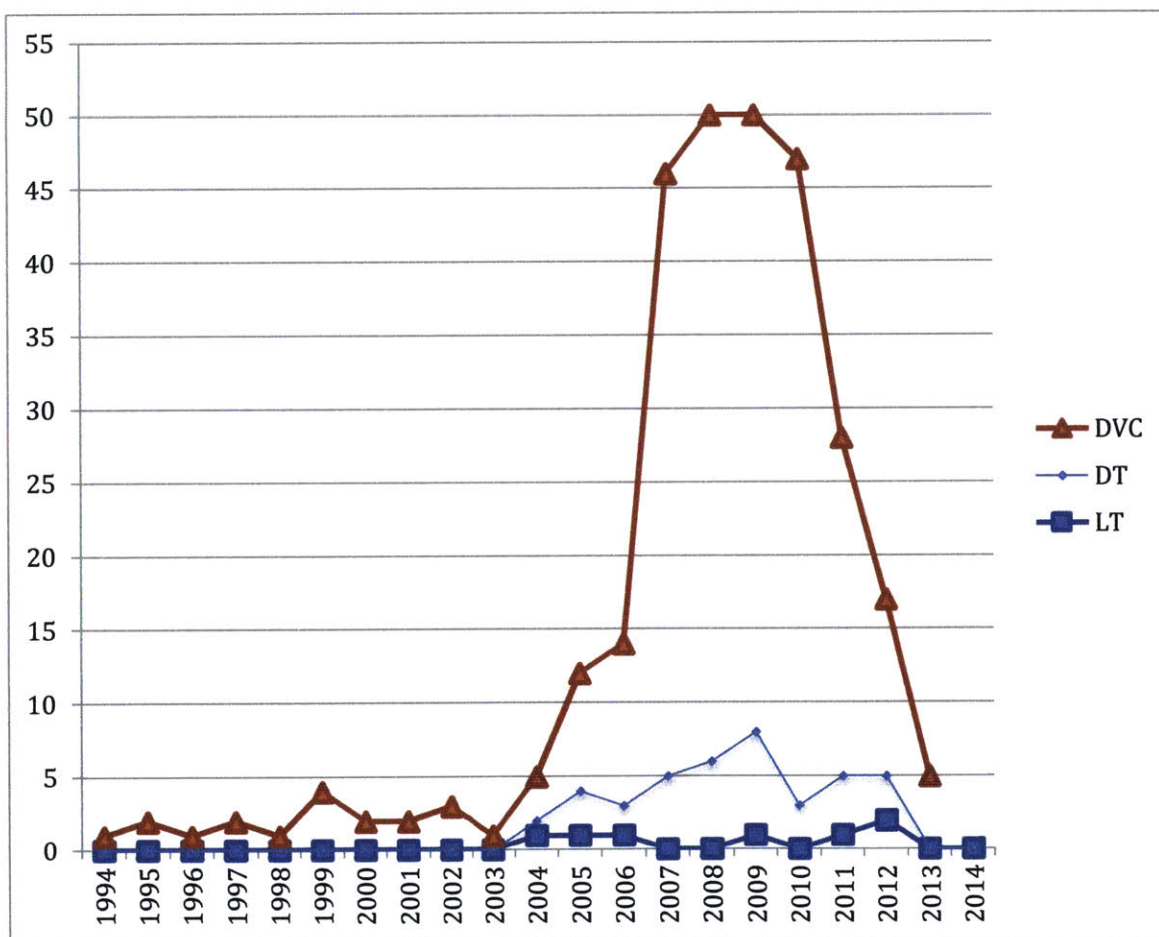
These results offer some support to my hypotheses, based on common arguments about the benefits of community land trusts. First, the lower building values on the land trust bolster the primary claim that this model maintains affordability (see Figure 11 on following page and Appendix, Figures 29 through 32); these average values are much closer to the affordable range for the typical Dudley household. This, along with considerably lower frequencies of vacant lots than one would expect to see (see Appendix, Figure 26), also seems to reflect the stated DSNI goal of development without displacement. While DSNI is clearly building homes and other structures on the land trust, it is distinct from speculative or investor development. In fact, the higher assessed land values on the land trust in 2000 and 2005 might indicate that the option value or exchange value of this land remain high in times of overall real estate appreciation. In other words, if not for the land trust, those same parcels might otherwise sell at a premium to for-profit developers, who would be less likely to build low-income housing on it.

The results also indicate some support for my hypothesis that the land trust model promotes neighborhood stability in the form of lower vacancy and foreclosure rates and higher owner-occupancy rates. Vacant lots accounted for between 17 and 19% of parcels in the control area between 2000 and 2014, and between 13 and 16% of the Dudley Triangle. Only 2 to 3% of the land trust remained vacant, and that percentage fell over time at a generally faster rate than in the control area (see chart on page 47). While foreclosures were not significantly different in 2000 and 2005 (due to very low numbers overall), during the height of the economic crisis the land trust

showed a markedly lower rate. Further analysis shows that in 2008 and 2009, the worst years for foreclosure in Boston, the control area had 44 and 41 foreclosures respectively, compared to zero and one on the land trust (see below, Figure 10).

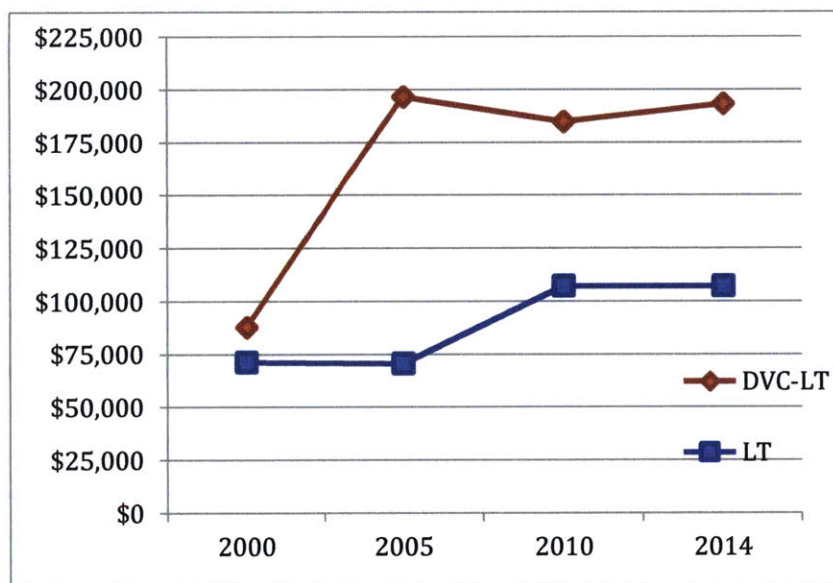
I also conducted a hot-spot analysis of the foreclosures within the Dudley Village Campus, which indicates that spots of significantly higher foreclosure frequency surrounded the land trust (see Appendix, Figures 35 and 36). There was a slight cool spot within the land trust itself and another adjacent to a block of its properties, indicating that the land trust may have had a slight positive spillover effect. However, further analysis would be necessary to evaluate the strength of this effect.

Figure 10: Homes foreclosed by year, 1994-2014. Data source: The Warren Group



Another interesting result is that while building values in the surrounding neighborhood apparently spiked during the housing boom and dropped drastically as the recession hit, building values on the land trust show a steady, if smaller, growth trend (see Figure 11 below and Appendix, Figures 29 through 32). Owner occupancy rates were higher on the land trust as well, and grew at a generally faster rate than in the study area (see Appendix, Figures 39 and 40). These indications seem to paint a picture of a more stable and affordable community, and they largely correspond with assessments by housing experts and those familiar with DSNI.

Figure 11: Building Values in the Dudley Village Campus and the Land Trust, 2000-2014



QUALITATIVE RESULTS

While the responses from most of these interviews provided specific details contextualizing one or more aspects of the DSNI land trust, there were a few overall trends:

- most identified the community-controlled structure of the land trust, communal land ownership and control, and permanent affordability as the critical features of community land trusts, distinguishing them from other affordable housing models
- they generally concurred that while Boston housing prices fluctuated in the 80s and 90s, they have risen sharply over recent years, particularly after the recession; gentrification is a widespread concern, and there is much less federal funding available for affordable housing nowadays
- respondents who know DSNI cited its successes at successfully revitalizing the community, bringing new affordable housing for those who would have otherwise lacked the opportunity, and maintaining a thoughtful, community-driven, long-term approach to redevelopment
- what sets DSNI apart, respondents said, is its focus on community building organizing, its role in shaping development, and the sense of land stewardship

Additionally, two more questions attempted to gauge interest in the community land trust model and to determine whether spatial and/or quantitative analysis was a research gap in this area (though it could be argued that answers to these questions may have been slightly skewed by the act of interviewing itself). Responses about the

change in interest level in CLTs were more mixed: some perceived much greater interest in CLTs in recent years, while others had more qualified responses. For instance Emily Thaden, who currently works for the National Community Land Trust Network, said, “[interest in the model has] taken off in past couple of years. It’s an easier sell in hot market conditions because it’s clear it can combat gentrification [...] we’re getting a lot more calls, doing more federal advocacy and education” (2015).

Responses about the research gap were much more uniform: by and large, those who answered this question agreed that there have been few efforts to systematically map or quantitatively analyze the impacts of community land trusts, particularly at a neighborhood- or parcel-level scale. John Davis, well-known for his work with the Burlington Community Land Trust (now Champlain Housing Trust) and his research on land trusts, supported the work within this thesis:

“This is very valuable research. What you're trying to do does fill a gap in the literature, and I think you would both help DSNI but you would also help the CLT movement to be doing this kind of quantitative, data-based, map-based research.” (2015)

Interviews also drew out a few critiques that offer a useful counterpoint to the generally rosy portrayals of the area’s revitalization. For example, Joe Kriesberg of MACDC observed that “crime rates are certainly lower [than before] but still certainly higher” than in other parts of the city (interview), and longtime DSNI staff member Ros Everdell agreed that crime was still an issue within the Dudley neighborhood, along with low-performing schools (2015).

Another housing expert also critiqued the restricted resale model because it limits equity and therefore household financial success, yet other interview subjects countered that claim. Emily Thaden pointed to research on low-income homeowners and wealth accumulation, pointing out that “they have to own a home for at least seven to twelve years” to accumulate equity, yet only 50% of low-income non-CLT homeowners manage to keep their homes for more than five years, compared to 90% of CLT homeowners (2015). Penn Loh argued that “it creates financial security; you get insulated from the downs, [and] you're not subject to the bubble in the first place” (2015). My findings on building values support this, showing a smoother slope for land trust properties while neighborhood-wide building values increased more steeply (see Figure 11, page #). Generally, interviews confirmed the quantitative analysis, and highlighted broad support for DSNI from many involved in housing research and policy in Boston and beyond.

LIMITS OF ANALYSIS AND DATA IMPLICATIONS

The primary limit to this analysis is that it does not fully capture the true impact of the DSNI land trust. In virtually all of the interviews conducted with those familiar with the land trust, including subjects with no affiliation to DSNI, as well as in the existing literature, the emphasis on community organizing, strong neighborhood networks, and resident participation was seen as one of the land trust’s greatest strengths. Since DSNI and the land trust have been inextricably linked almost since their inception, this focus on community control and involvement is a critical feature of the land trust’s success, not a side benefit. Yet this same feature is difficult to capture

spatially or quantitatively. As Joe Kriesberg noted about community-based organizations more broadly, “[T]he ways in which CDCs often help low-income people live a better quality of life [generally] don’t show up in poverty rates given how those rates are calculated” (2015). It would require perhaps a longitudinal study of land trust residents or an in-depth qualitative analysis using ethnographic observation and interviews with residents, neighbors, and service providers to fully document the land trust’s impact on the lives of those whom it has touched.

A second limit is the availability of the data upon which this analysis relies. Parcel-level digital data was only available dating back to 2000, and demographic characteristics could only be compared using block group-level data up to 2000. More detailed information might become available if archived city records are digitized and shared publicly, if those records have survived. Foreclosure records at the scale required had to be purchased from the Warren Group, which places strict licensing restrictions on the use and sharing of the data. The difficulty experienced of accessing foreclosure data, as well as the potential for other community organizations to benefit from increased spatial data availability and mapping capacity, lend support to local networks of data sharing and calls for increased ease of public access to city records. Perhaps a consortium of CDCs and other housing-focused organizations (see *Other Actors: Community Developers in Dudley*, page #) could negotiate a shared group license to housing data with the Warren Group, or the Department of Neighborhood Development could share the data it purchases from the Warren Group with such organizations for non-commercial use only.

In recent years, Boston has taken positive strides towards greater data access and innovation via its “Open Government” portal and the Office of New Urban Mechanics. Additionally, private citizens involved in projects like UnGentry and Github have promoted open-source mapping of various topics in the city (Code for Boston/Code for America 2015). Yet data on many topics relies on governmental agencies for updating, and until now such agencies had little reason to make records digitally accessible via multiple systems and users, or to update them more frequently than was required for their work. Some of the municipal parcel data used in this thesis, for instance, was incomplete, inaccurate, or out of date. If “Big Data” is to be used for civic good, local governmental entities will need to establish sound policies and structures for data management and sharing.

Chapter 6: Conclusion

The results of spatial and quantitative analysis support certain hypotheses about the DSNI community land trust, while leaving others open to debate. They show a marked pattern of lower building values on the land trust even during a time of rising home prices, reflecting a key goal of DSNI: to maintain housing affordability. Lower rates of foreclosures during the recession also indicate that the land trust is promoting neighborhood stability and financial security for individual homeowners. The ongoing reduction in vacant lots on the land trust, while owner occupancy rates have risen, both at a generally faster rate than in the surrounding neighborhood, lend support to another crucial DSNI goal of “development without displacement”.

Yet the numbers are not always conclusive—land value in particular tells a more mixed story—and it is still not fully clear whether these variables demonstrate a significant spillover effect from the land trust onto its neighbors. Assessed building values are indeed lower in the Dudley Triangle, but vacant lot rates, owner-occupancy rates, and foreclosures vary, sometimes lower or higher within that area. Some of the benefits of the land trust seem to stay within its confines, according to this data.

Interviews generally supported the perception that DSNI's land trust does indeed maintain affordability and that it has contributed to significant positive change in the neighborhood over the past twenty to thirty years. Housing experts were almost unanimous in their assessment of Boston's housing market as very expensive and volatile, subject to ongoing investment and speculation—and equally unanimous in observing that while foreclosures had little impact on this hot market as a whole, it negatively affected particular neighborhoods like Roxbury and Dorchester.

Finally these interviews revealed a possible limitation for future study: some of the things DSNI is best known for, such as empowering local residents to participate more in community planning and political processes, may require more data collection and might be more difficult to quantify. Another area for further study, based on these interviews, would be additional criteria for evaluating the success of a community land trust, such as whether the model promotes maintenance by homeowners who are part of the land trust.

IMPLICATIONS FOR DSNI AND THE DUDLEY NEIGHBORHOOD

Those involved with DSNI, whether as volunteers, staff, board members, partners, or residents, deserve to be proud of the neighborhood: by any measure, it has come a long way from the forlorn dumping grounds of the 1980s, and DSNI has played a vital role in that transformation. The documentaries *Gaining Ground* and *Holding Ground* show, in living color, just how dramatically that change has affected the people and the politics of the neighborhood. In terms of land, one of the key visuals shows the number of housing units built on the land trust as it gradually expands (see appendix); combined with maps of the vacant lots in the neighborhood, it paints a clear picture using data of the real changes wrought by DSNI. Documentation of this change, through visual media, personal stories, maps, and statistics, is crucial to the continued success of DSNI and of the neighborhood in general. It serves as both a celebration of past work and a call to further action.

At the same time, inspiration is not enough to produce change on its own. Even with eminent domain and support from city government, purchasing vacant lots from private owners, engaging community members in collective planning processes, and maintaining the land trust requires funding, and funders increasingly want to see data supporting organizations' claims and quantitative assessments of their programs.

Furthermore, in a climate of reduced federal support for affordable housing, tight credit in financial markets, and rising local real estate prices, DSNI will have to make smart decisions about new projects. The analysis of foreclosures and the impact of the land trust on building values (particularly during the housing boom and bust) will

hopefully lend support to their efforts. Having more information about the land trust and its impact will surely help board members, community residents, and staff plan for the neighborhood's future.

IMPLICATIONS FOR COMMUNITY LAND TRUSTS

Other community land trusts can hopefully learn from this research as well, both from its results and from the structure of the analysis. If the results are indeed generalizable, they can provide several clues about community land trusts: first, they do seem to protect against foreclosures, vacancies, and the volatility of housing prices in a rapidly changing market; second, land trusts may correlate with slightly higher homeownership rates in areas where that is rare, creating stability at both the neighborhood level and family level. Yet CLTs differ widely in their size, age, geography, and real estate market; this case may not generalize well to cold-market cities like Detroit. Hopefully, though, the structure of the analysis itself might serve as a template for other CLTs to evaluate their own success from a quantitative and/or spatial perspective. If CLTs in other cities have mapping capacity and access to similar parcel-level data on land use and assessed values, they could replicate the analysis for their own land trusts. Alternatively, a research institution or organization such as the National Community Land Trust Network could conduct further research along the same lines on individual land trusts or a collection of cases.

IMPLICATIONS FOR BOSTON

Closer to home, this research has implications for local housing policy as well as property assessment and revenue. It suggests that Mayor Walsh and his advisory team were right to include CLTs as a key strategy in their housing plan (*Housing a Changing City* 2014). Walsh and the Department of Neighborhood Development (DND) would be wise to continue past administrations' support for DSNI, both politically and in the donation of city-owned vacant parcels. While about 17% of parcels in the Dudley Village Campus are vacant, that drops to only two percent within the land trust, and most of those parcels are too small, too steeply-sloped, or too irregularly-shaped to build on or use as green space (Hernandez 2015). If nothing else, turning remaining buildable parcels over to DSNI seems like a good deal for City Hall. (On the other hand, DSNI would likely find itself with more snow-shoveling responsibilities until it developed those lots.) Beyond that, however, the fact that land trust properties remain significantly lower in assessed value and seem relatively safe from the vicissitudes of the housing market should draw the attention of local affordable housing advocates and housing policymakers. This should bolster the argument of other organizations and neighborhoods in the Boston area that are already interested in the community land trust model, such as Chinatown, that it could aid those struggling with rising housing prices.

Finally, for those who might argue that lower assessed values (due to the restrictions on equity increases) lead to lower revenues for the city, the statistics on vacant lots tell a different story: the savings from DSNI adding vacant lots to the land

trust and then partnering with developers to build housing or commercial structures more than makes up for the difference between land trust buildings' assessed values and what they would likely be without those restrictions. As suggested in Mayor Walsh's recent housing plan, policymakers would be smart to explore whether other neighborhoods would benefit from a community land trust—though given the clearly severe need for affordable housing, they should try several approaches simultaneously, perhaps targeted towards different income levels. As Dr. Bratt stated, "I'm kind of in the ballpark of saying it's all good, because we just need a lot more of it [affordable housing] [...] the land trust is a great idea, is an innovative idea, I think sometimes though it's a harder concept for people to really understand and get a hold of" (2015). Other interviewees indicated that DSNI has been doing a good job recently of reaching out to other communities, building partnerships with other organizations and activists, and explaining their model, but even more education and outreach would likely prove useful. Finally, better documentation, data sharing, and evaluation could allow future researchers to compare multiple housing approaches and learn what best promotes long-term housing affordability and neighborhood stability.

CONCLUSION

Some of the vacant lots that lay fallow under the snow around Dudley this winter will likely see change by next winter. As the weather heats back up, so does development pressure in a city with a critical housing shortage and a burgeoning economy. In another thirty years, the neighborhood may look as different as it does today in comparison to the 1980s. Based on my research, I believe could change in

essentially one of two ways: towards displacement, or towards stabilized improvement. If the trend of increasing building values continues (see Appendix, Figures 37, 38, and 29 through 32), the Dudley area could become dominated by mostly white, middle-class young adults as gentrification spills over from the South End and North Dorchester. This might be hastened by condo conversion or transit-oriented development along the Fairmount line, if it is primarily luxury condos or so-called affordable units above the neighborhood median income, or by the Roxbury Innovation Center in Dudley Square, if it brings in outside start-ups seeking lower rent at the expense of neighborhood businesses, entrepreneurs, and residents. Additionally, some of the currently affordable housing (from Orchard Gardens to homes built by Madison Park Development Corporation, Dorchester Bay EDC, and other CDCs) may expire and be converted to market-rate units, unless local, state, or federal government implement new policies to prevent conversion. Apart from this housing, much of it built in the last thirty years, the private housing stock in the area is fairly old and sometimes poorly maintained, lowering its value. However, the case of similarly old neighborhoods like Beacon Hill, Mission Hill, and Jamaica Plain shows that if the housing demand is high enough, renovation is well worth the cost, and can yield high returns on resale. These pressures could displace current residents—particularly renters—to less expensive parts of the city or outside of the city entirely.

On the other hand, the neighborhood could experience a less conventional shift: it could remain a bastion of affordability for working families of color within city limits, growing younger but better educated. As *The State of Black Boston* describes it, “Black

and Latino children are spearheading a quiet demographic revolution in this city with many kinds of social and economic implications”, and these children today will be tomorrow’s homebuyers, renters, and workers (2011). The BRA’s “Characteristics of Boston and Its Neighborhoods” report shows that over 42% Roxbury’s population was under age 24 in 2010, compared to around 36% citywide (Lima 2014). Finally, the Boston Promise Initiative (established by DSNI and community partners) might boost preK-12 education locally, fostering further achievement and wellbeing among the community’s children and youth. If home prices remain low—supported by a bulwark of existing affordable housing in the neighborhood, including that of the land trust or depressed due to persisting issues with crime—those young people might find it easier to stay in the neighborhood, some supporting parents as they age in place. They could, with the right affordability protections (and new affordable homes) and more local jobs, solidify the area’s revitalization and help achieve DSNI’s decades-long dream of development without displacement. In order to make this future a reality, however, neighborhood CDCs and organizations like DSNI will need to continue developing innovative funding mechanisms, holding local government accountable to community visions and needs, and forging collaboration.

One such collaborative project is underway even at the time of this writing: on North Avenue students from nearby Madison Park High School, as part of YouthBuild, have been building a single-family home on the DSNI land trust (Hernandez 2015). To make it happen, DSNI drew upon its good relationship with the Department of Neighborhood Development, as well as partnerships with local CDCs and banks. It

would be interesting to follow the story of that home and the land beneath it: how did it become vacant? Once a family moves in, how might homeownership (with a ground lease) affect their lives? What about the neighboring homes—will their property values rise as an owner-occupied home replaces a vacant lot next to them? Or will the land trust's restrictions cause those properties to be valued at a lower level, keeping it more affordable as well? Which is better for the community overall, restricted housing prices along with limited equity or rapidly increasing home values but also an increasing risk of displacement? It would take much more time, data, interviews and analysis to answer these questions. However, by taking a new approach to studying DSNi's land trust, hopefully this thesis has at least opened the door to thorough, critical analyses of their model and its long-term impact.

Appendix

SUPPLEMENTAL MAPS, TABLES, AND CHARTS

Figure 12: Context Map

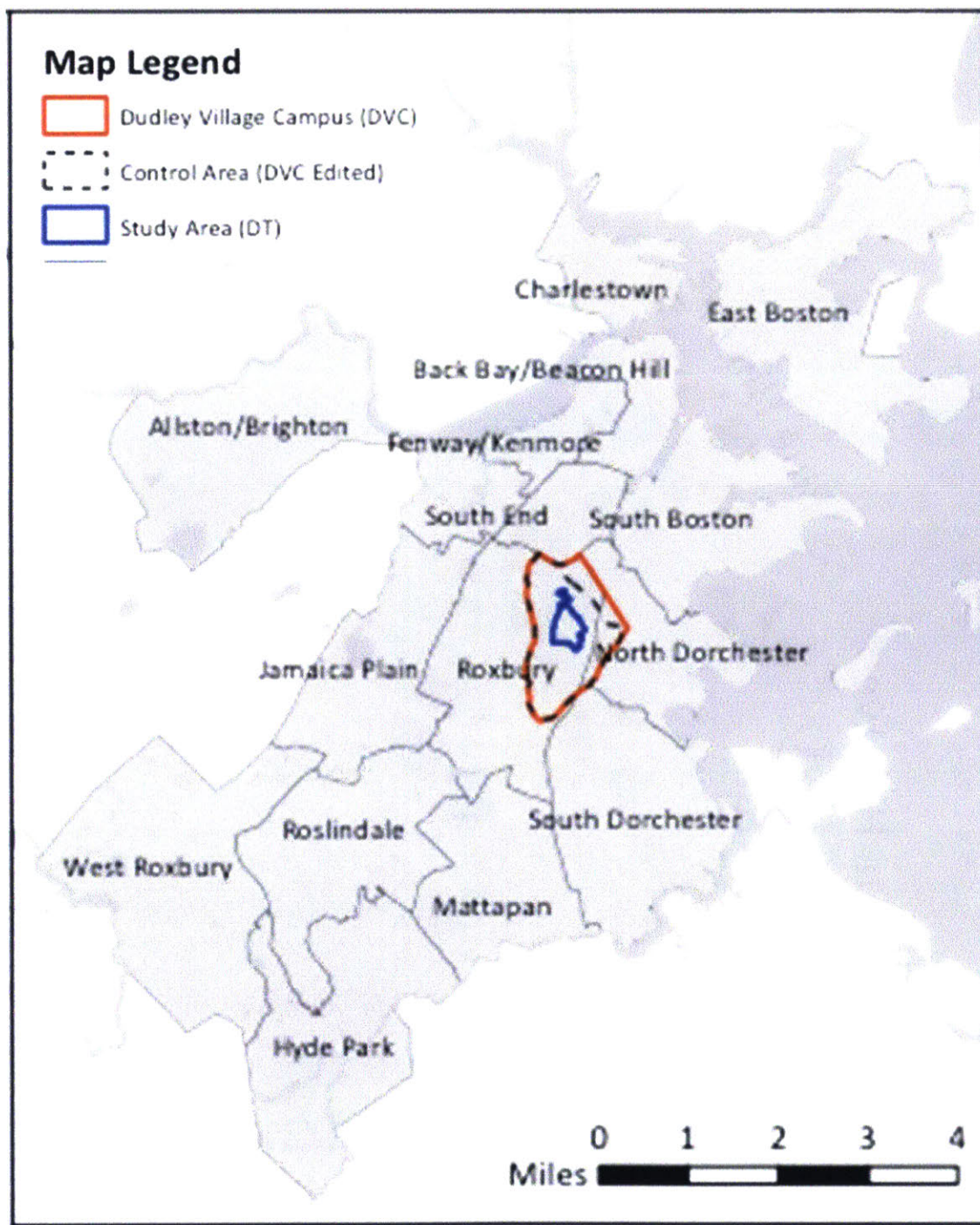


Figure 13: Land Trust Developments. Source: Ben Williams, Sibley Consulting, and DSNI.

DNI-Owned Parcels in the Dudley Triangle

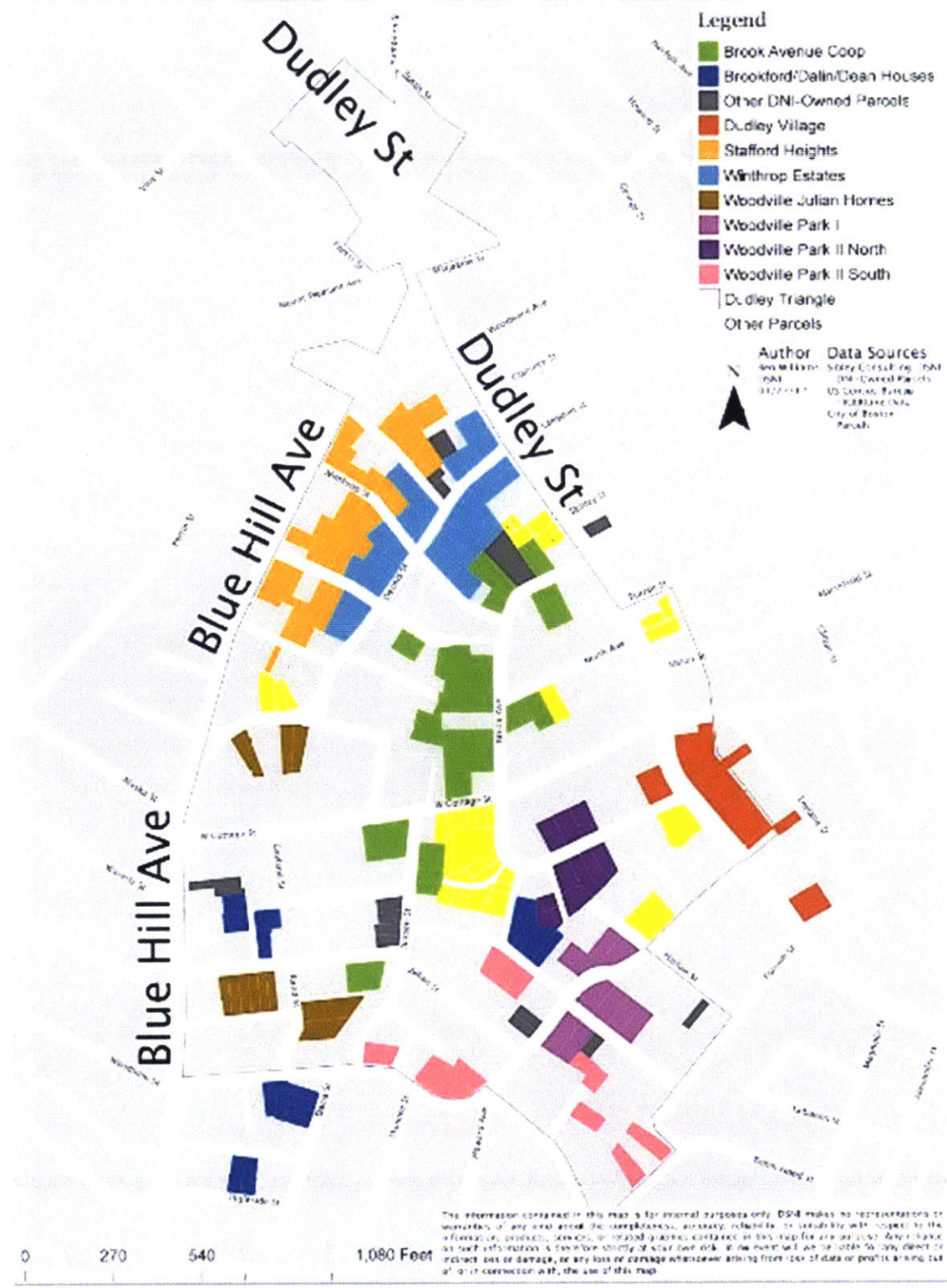


Figure 14: Transit in and Around the Dudley Village Campus, 2014

Map created by Lee Dwyer for DSNI, May 2015. Sources: DSNI, MIT, MassGIS, MBTA.

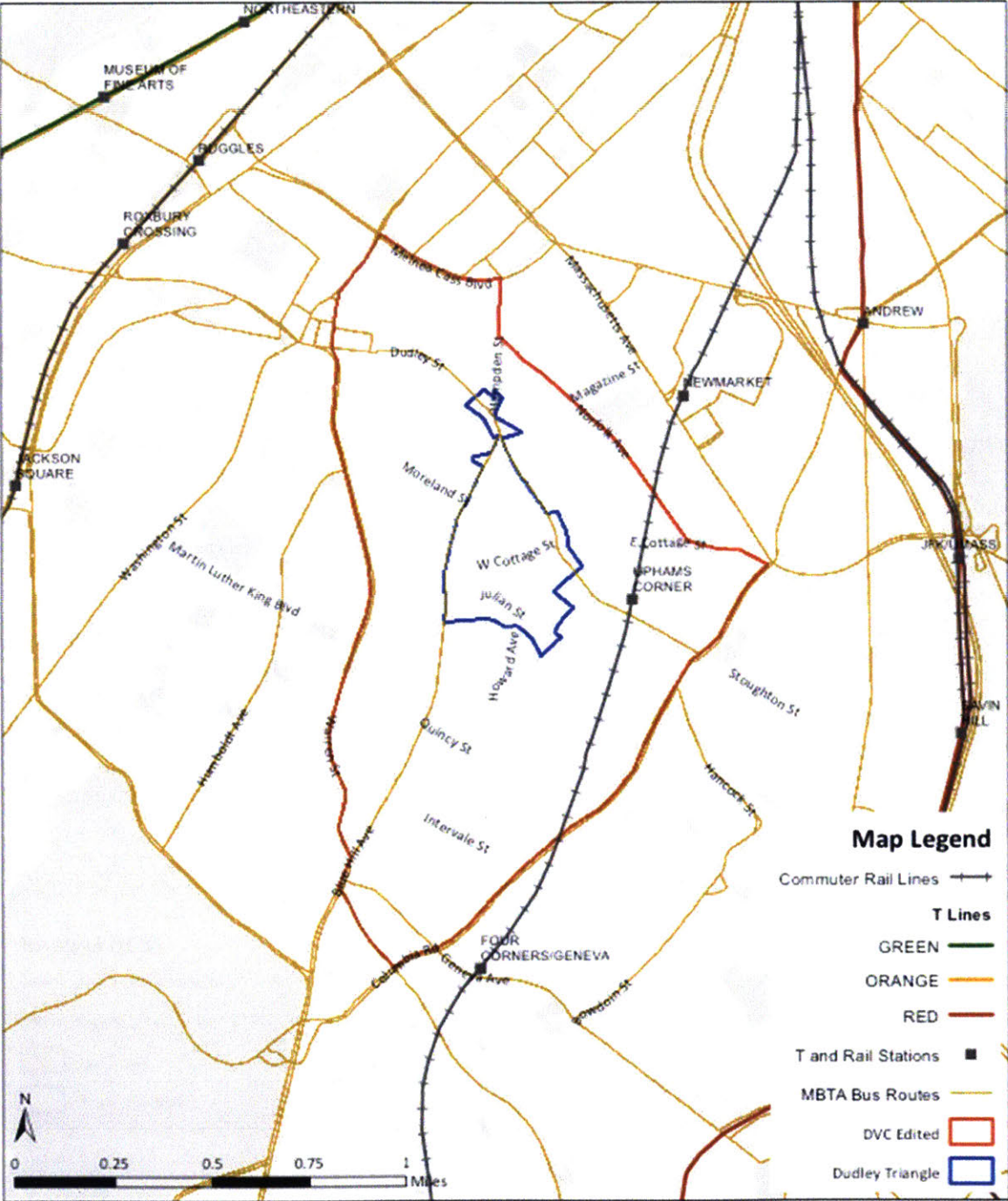


Figure 15: High-Traffic Roads In and Around the Dudley Village Campus, 2014

Map created by Lee Dwyer for DSNI, May 2015. Sources: DSNI, MIT, MassGIS, MBTA.

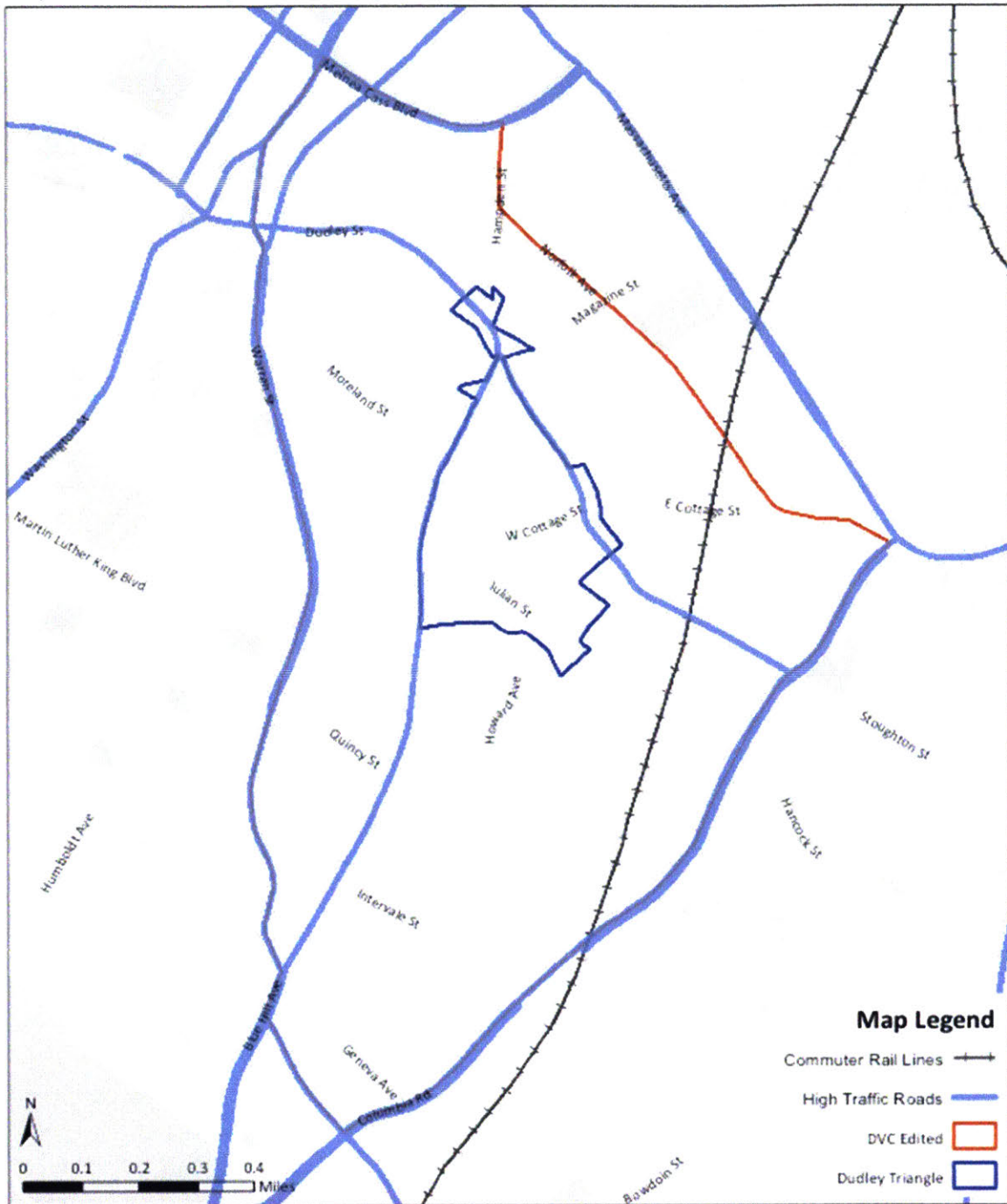


Figure 16: UNGENTRY Map of Owner Occupancy Rates. (Code for Boston/Code for America 2015)

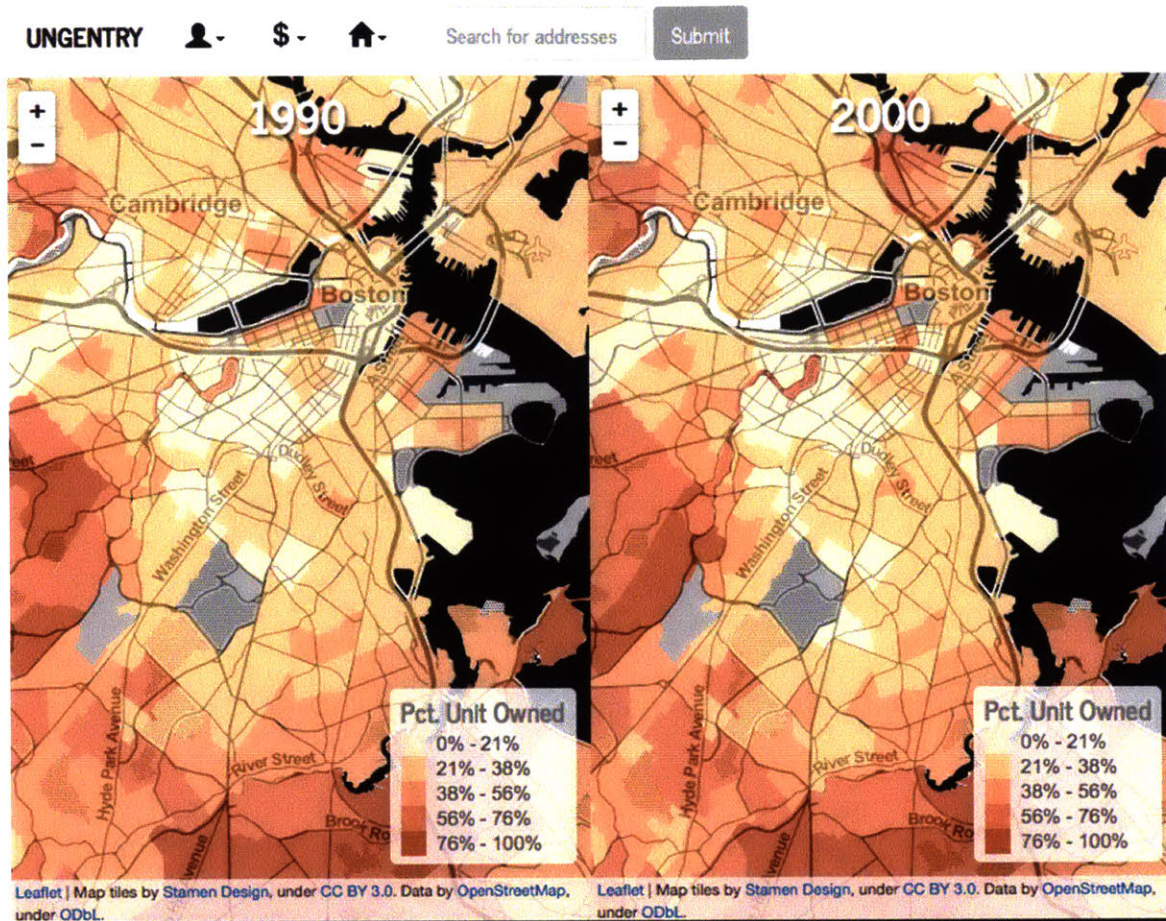
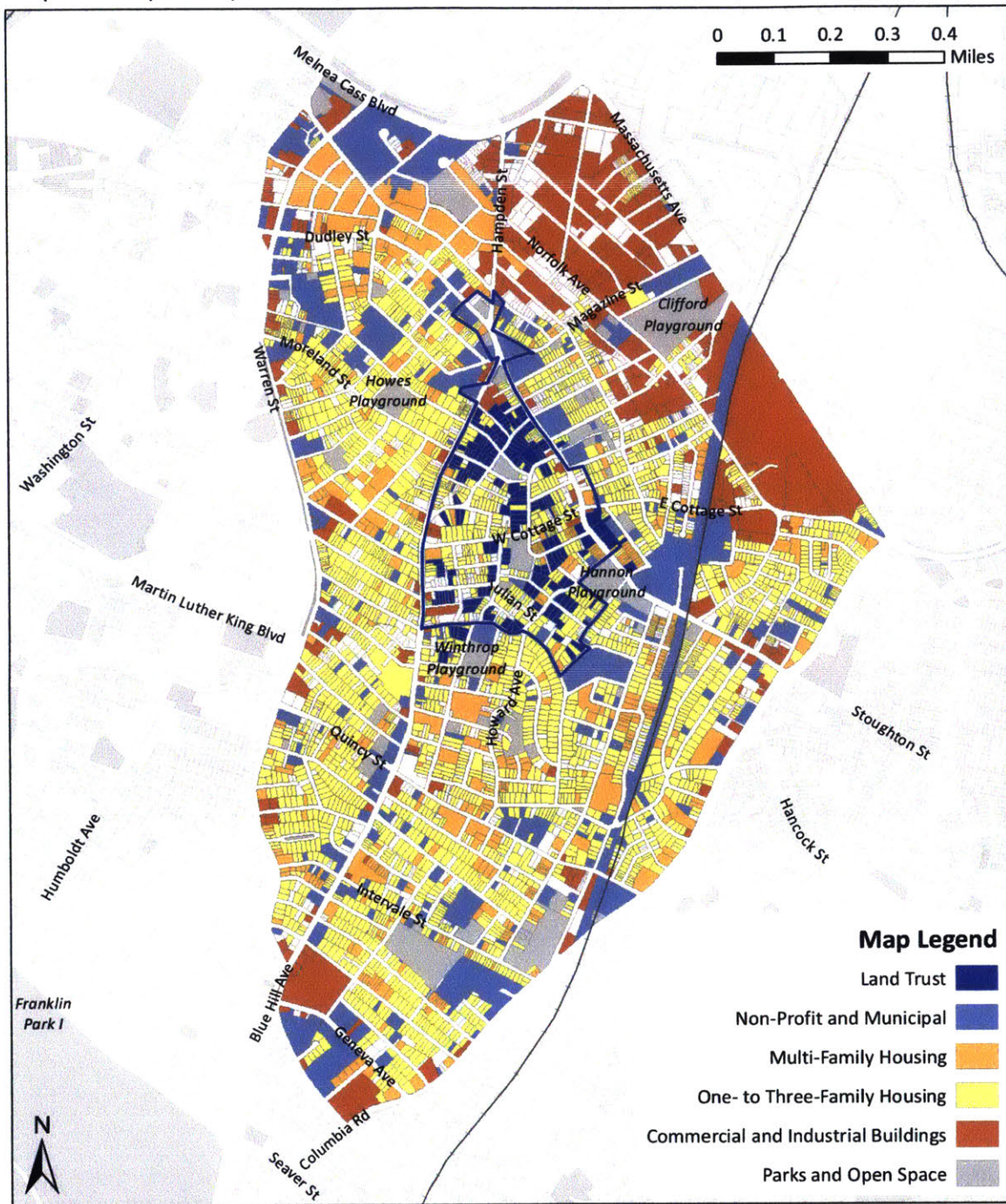


Figure 17: Land Use in the Dudley Village Campus, 2014

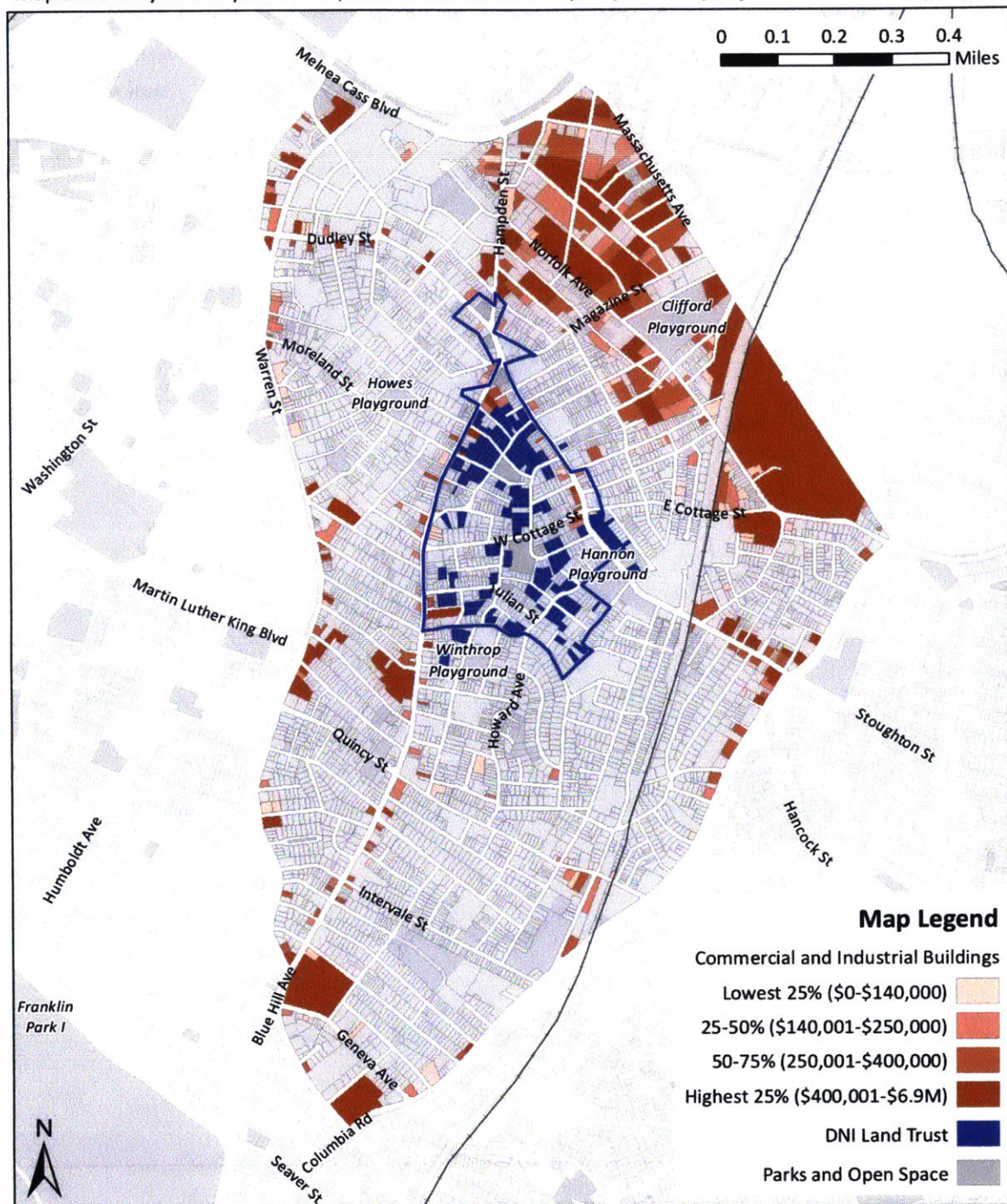
Map created by Lee Dwyer for DSNI, Jan. 2015. Sources: DSNI, MIT, MassGIS, City of Boston Assessing Dept.



*Note the largely commercial and industrial zone in the northeastern corner of the Dudley Village Campus.

Figure 18: Commercial Building Values in the Dudley Village Campus, 2014

Map created by Lee Dwyer for DSNI, Jan. 2015. Sources: DSNI, MIT, MassGIS, City of Boston Assessing Dept.



*Note: several of the top quartile-value buildings outside the northeastern corner are schools or other large, older, municipal buildings.

Figure 19: Dudley Village Campus (DVC) versus Edited DVC

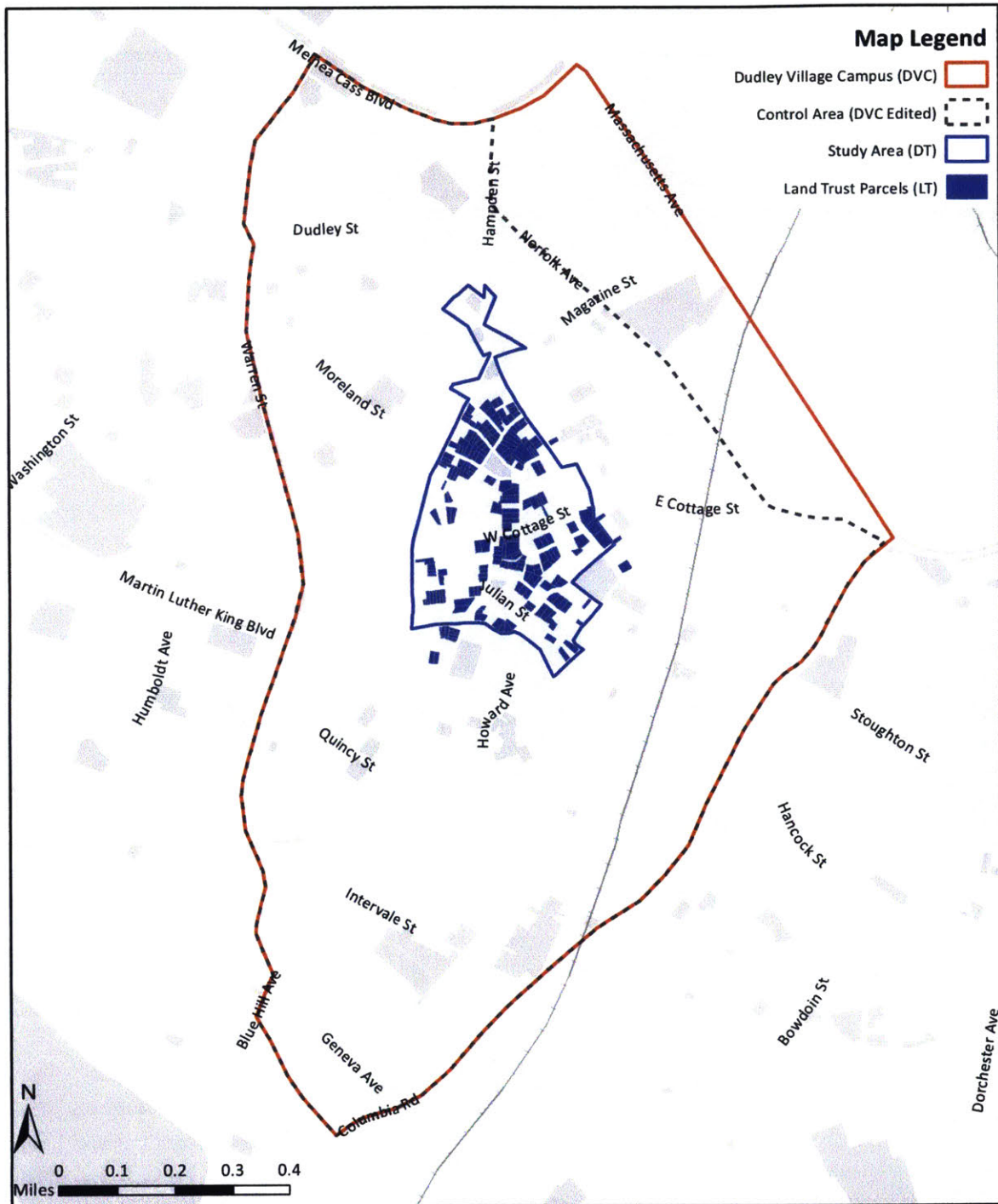


Figure 20: Census demographic results, 1980-1990

	1980			1990		
	DVC-DT	DT	t	DVC-DT	DT	t
Poverty Rate	31.3%	31.3%	(-0.015)	21.4%	22.4%	(-0.378)
Median HH Income	\$11,525	\$11,583	(-0.029)	\$23,460	\$23,840	(-0.207)
Race/Ethnicity						
% Pop. White	17.7%	16.3%	(0.286)	13.8%	11.9%	(0.441)
% Pop. Black	66.1%	54.1%	(1.365)	66.8%	55.6%	(1.291)
% Pop. Latino	15.4%	27.3%	(-2.890**)	18.9%	27.5%	(-1.816)
% Pop. Other Race	16.2%	29.6%	(-2.610*)	16.9%	29.1%	(-2.182*)
# of Observations	40	12		40	12	
** p < 0.01						
* p < 0.05						

Figure 21: Census demographic results, 2000-2010

	2000			2010		
	DVC-DT	DT	t	DVC-DT	DT	t
Poverty Rate	27.5%	27.7%	(-0.059)	See note below		
Median HH Income	\$28,372	\$27,793	(0.250)	See note below		
Race/Ethnicity						
% Pop. White	11.3%	11.0%	(0.139)	14.0%	15.3%	(-0.330)
% Pop. Black	59.2%	52.1%	(1.136)	56.4%	51.0%	(1.118)
% Pop. Latino	21.6%	26.0%	(-1.747)	25.5%	27.1%	(-0.697)
% Pop. Other Race	27.6%	35.5%	(-1.327)	27.7%	32.3%	(-1.098)
# of Observations	40	12		40	12	
** p < 0.01						
* p < 0.05						

*Note: the long-form decennial Census survey was eliminated, replaced by the ACS, beginning with the 2010 survey. This means block-level data on economic characteristics cannot be compared between 2010 and previous ten-year Census records.

Figure 22: Black/African-American Population in the DVC, 2010

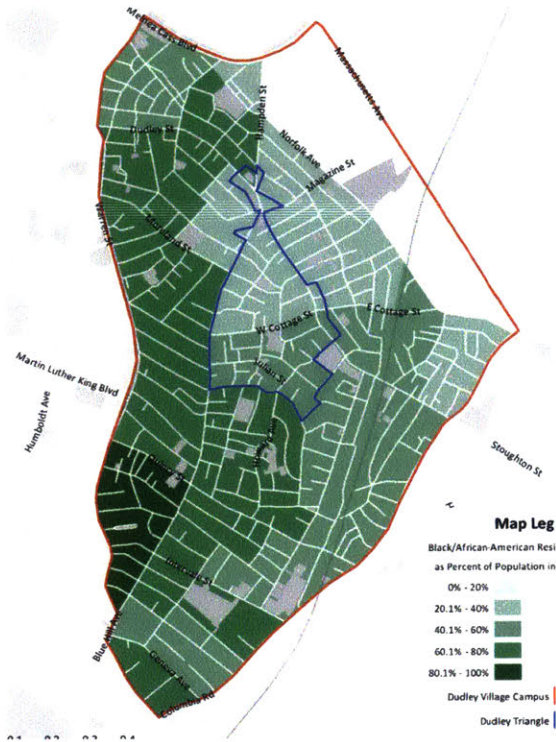


Figure 24: White Population in the DVC, 2010

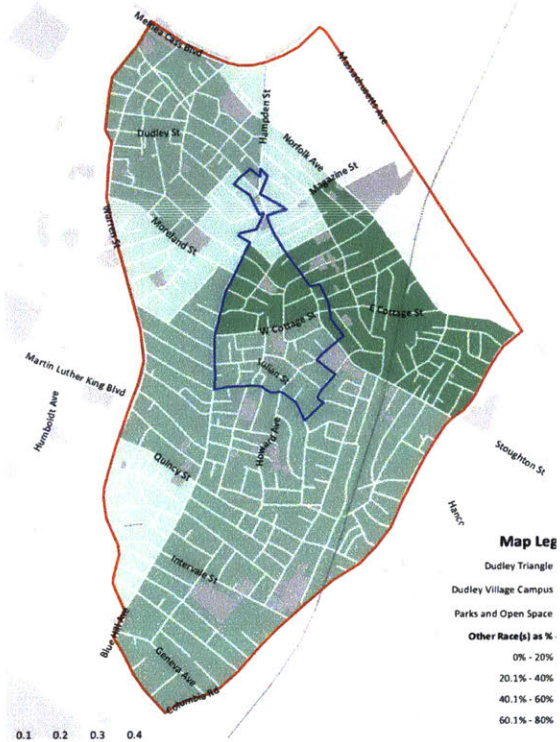


Figure 23: Latino/Hispanic Population in the DVC, 2010

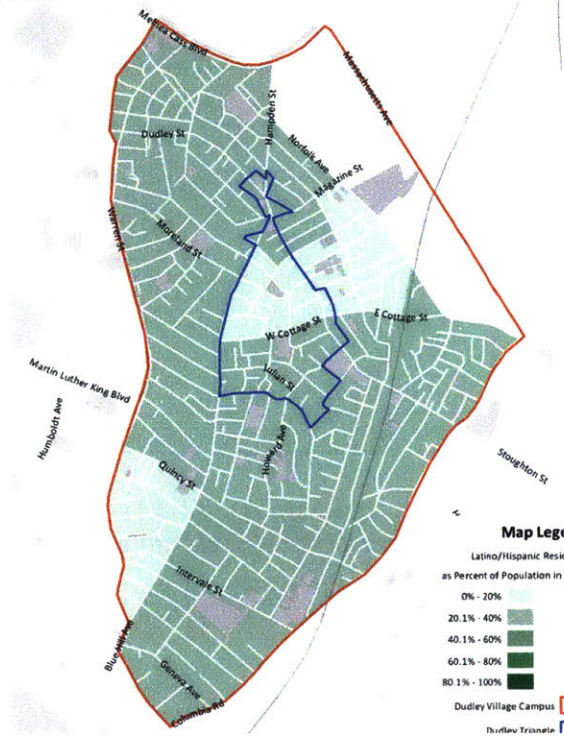


Figure 25: Population of All Other Race(s) in the DVC, 2010

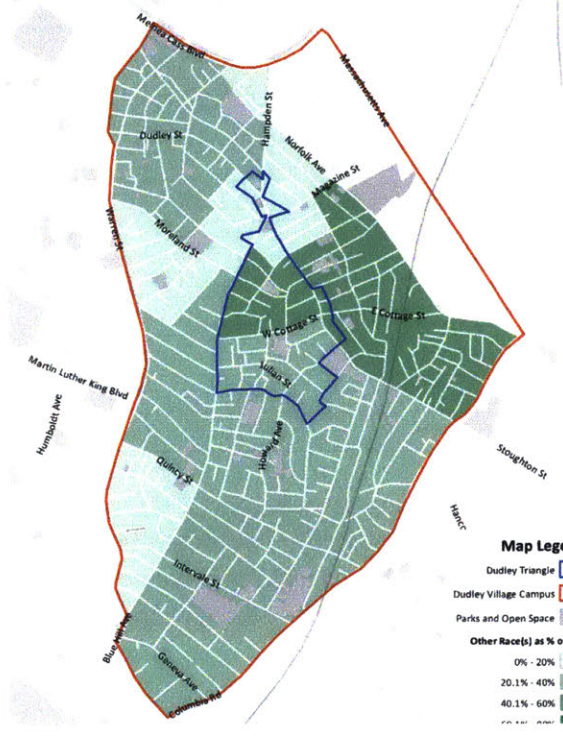


Figure 26: Vacant Lots in the DVC, 2014

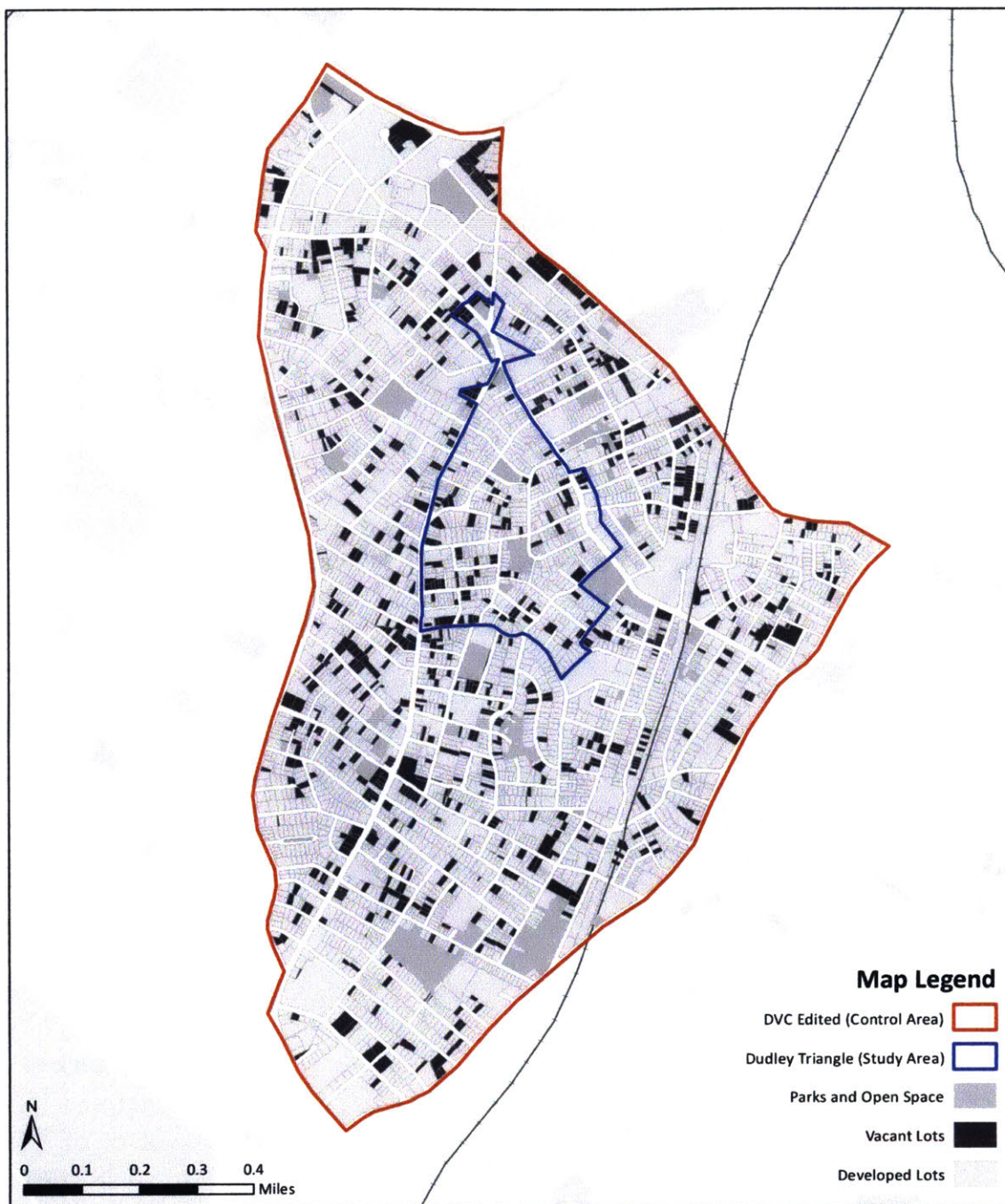


Figure 27: Owner Occupancy in the DVC, 2014

Map created by Lee Dwyer for DSNI, March 2015. Sources: DSNI, MIT, MassGIS, City of Boston Assessing Dept.

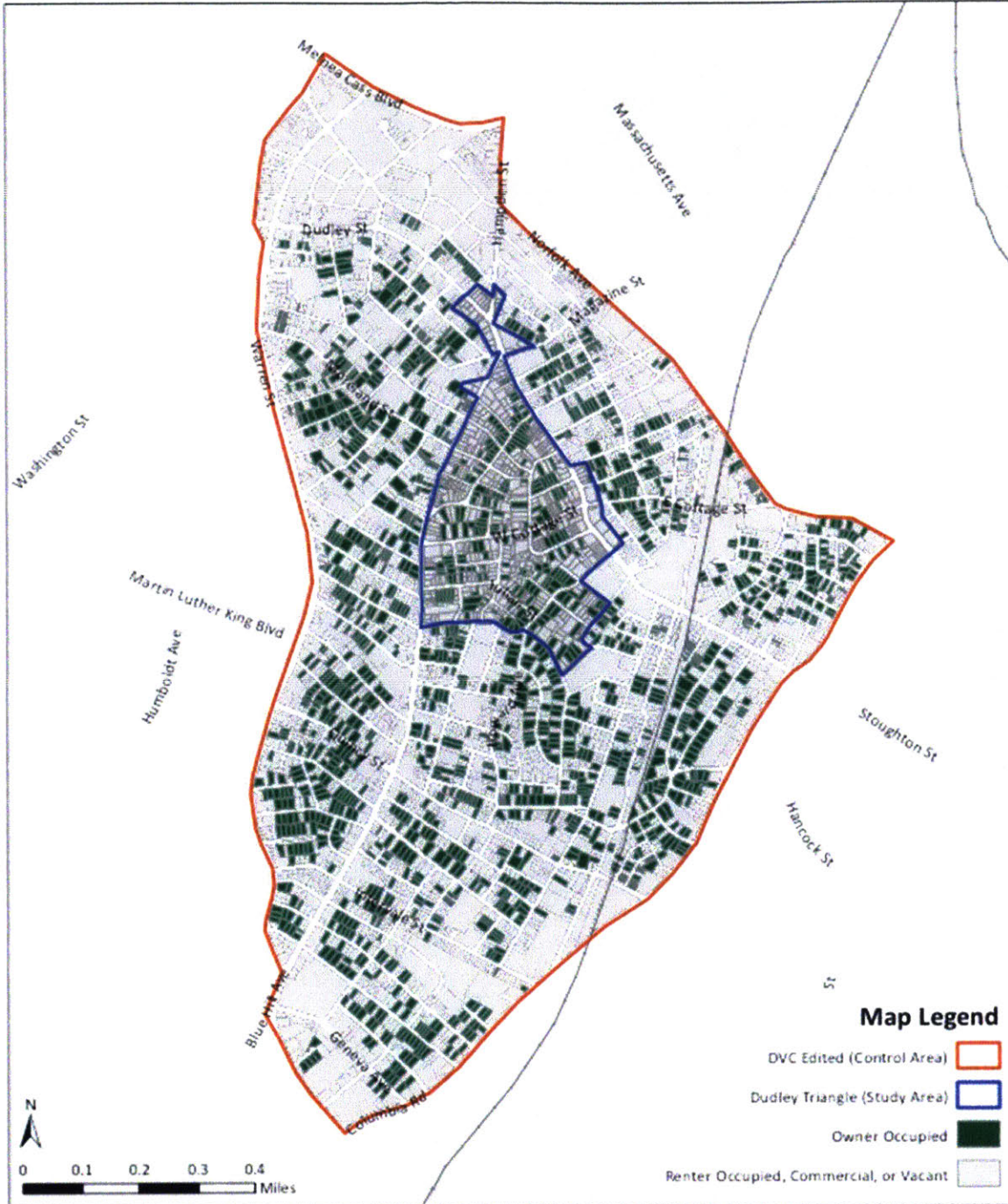


Figure 28: Land Values in the DVC, 2014

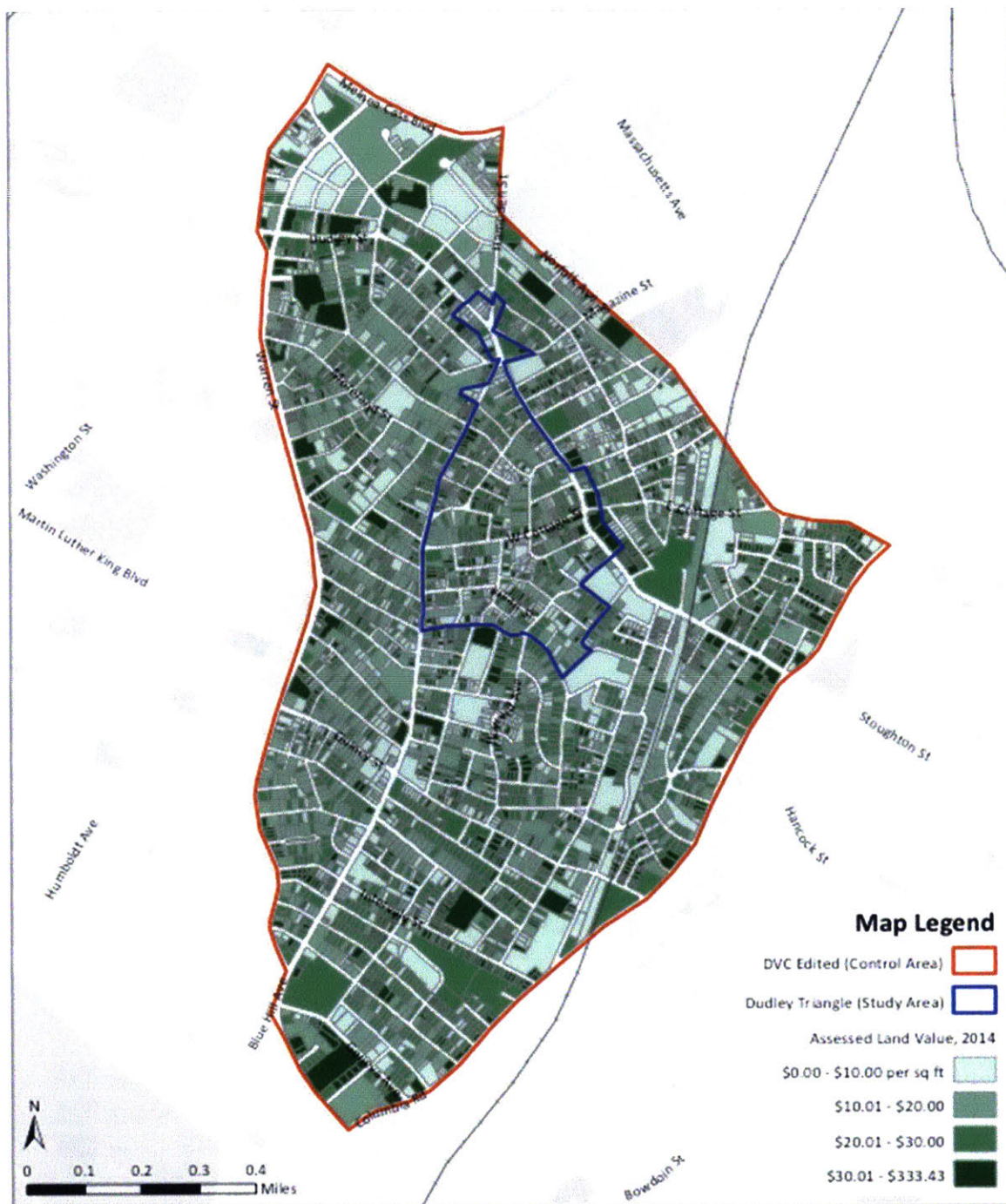


Figure 32: Building Values in the DVC, 2014

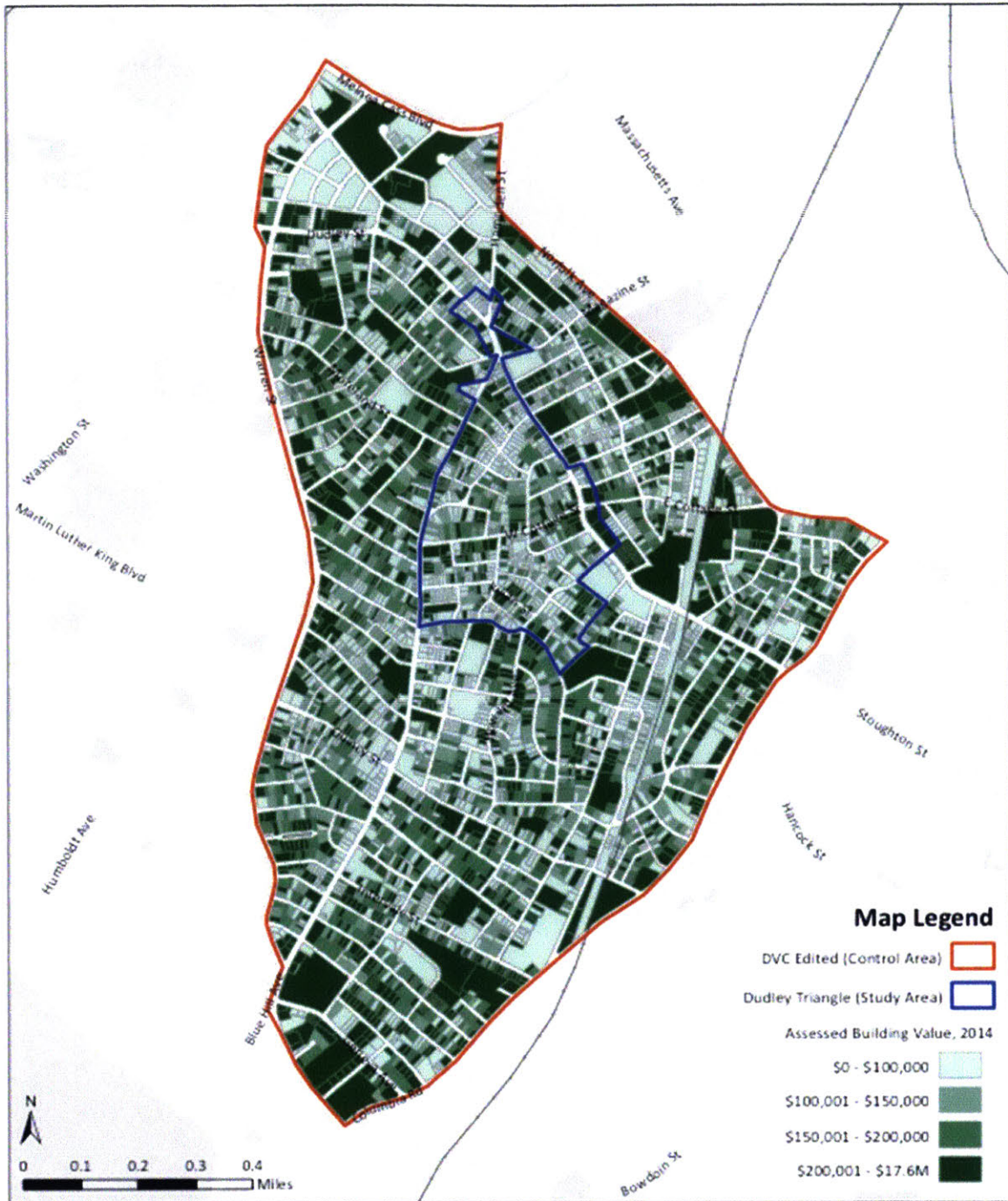


Figure 33: Foreclosures in the DVC, 1993-2014

Map created by Lee Dwyer for DSNI, March 2015. Sources: DSNI, MIT, Warren Group, Boston Assessing Dept.

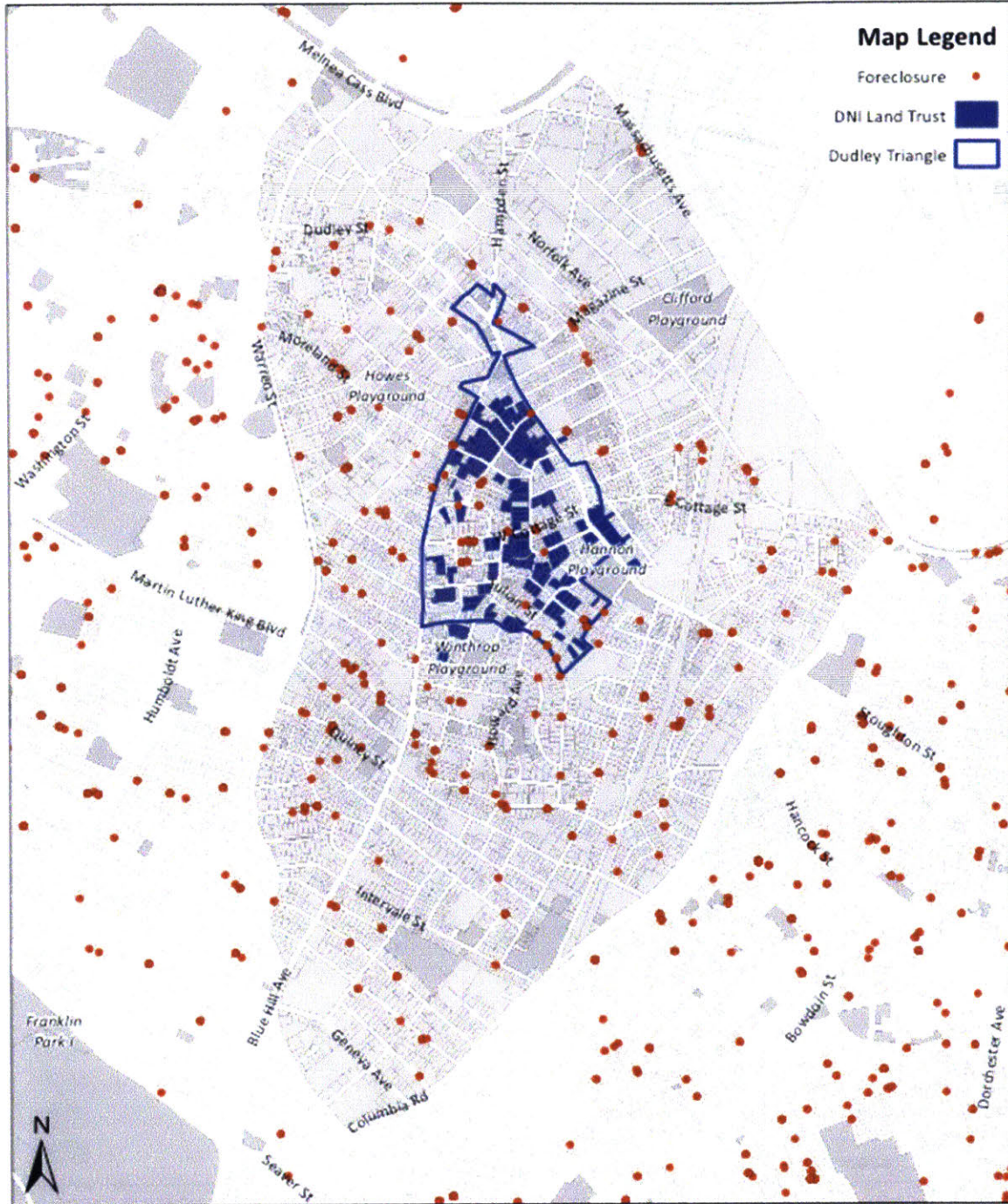


Figure 34: Foreclosures in the Dudley Triangle, 1993-2014

Map created by Lee Dwyer for DSNI, March 2015. Sources: DSNI, MIT, Warren Group, Boston Assessing Dept.

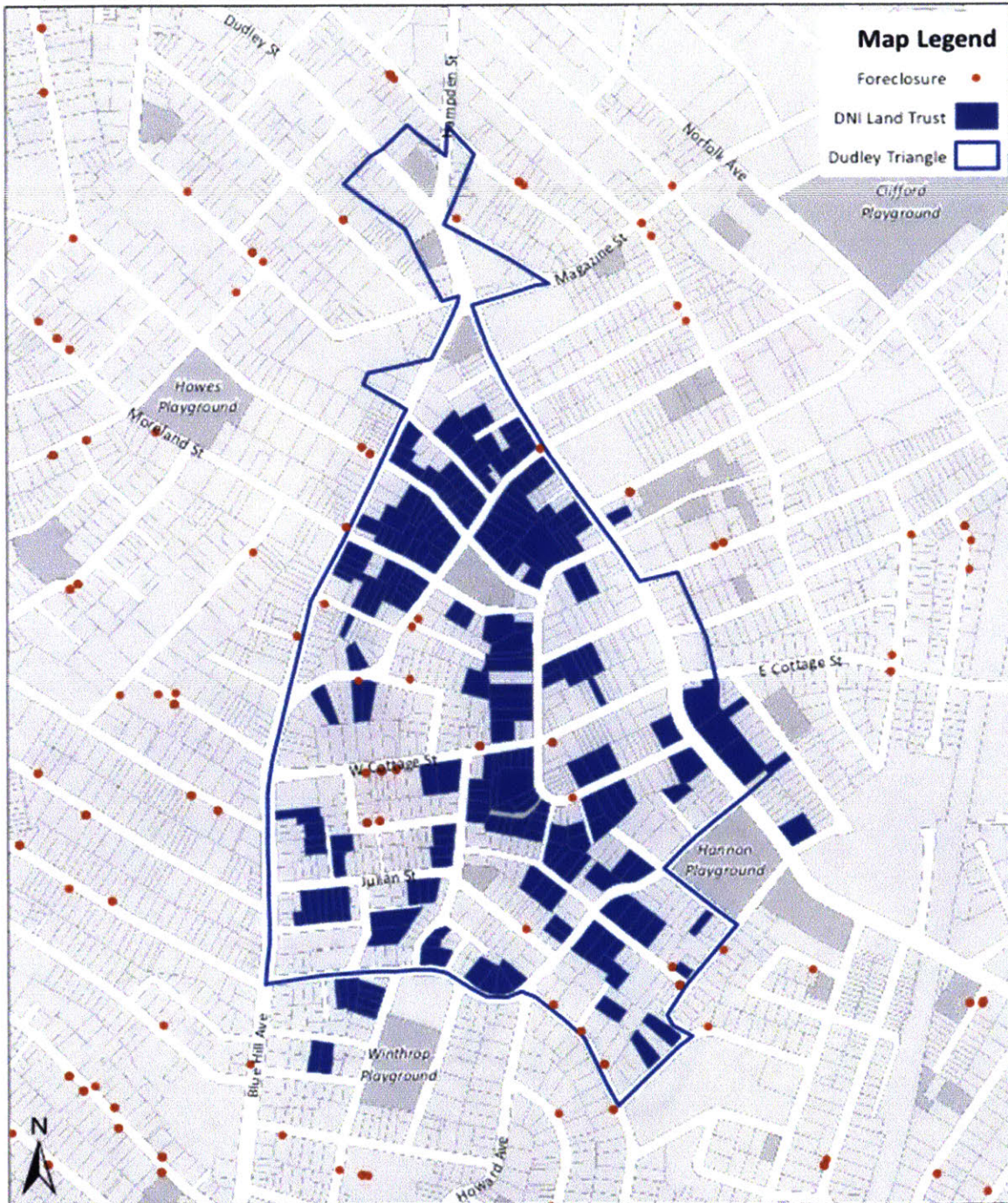


Figure 35: Hot Spot Analysis (Getis-Ord G_i^*) of Foreclosures in the DVC, 1993-2014

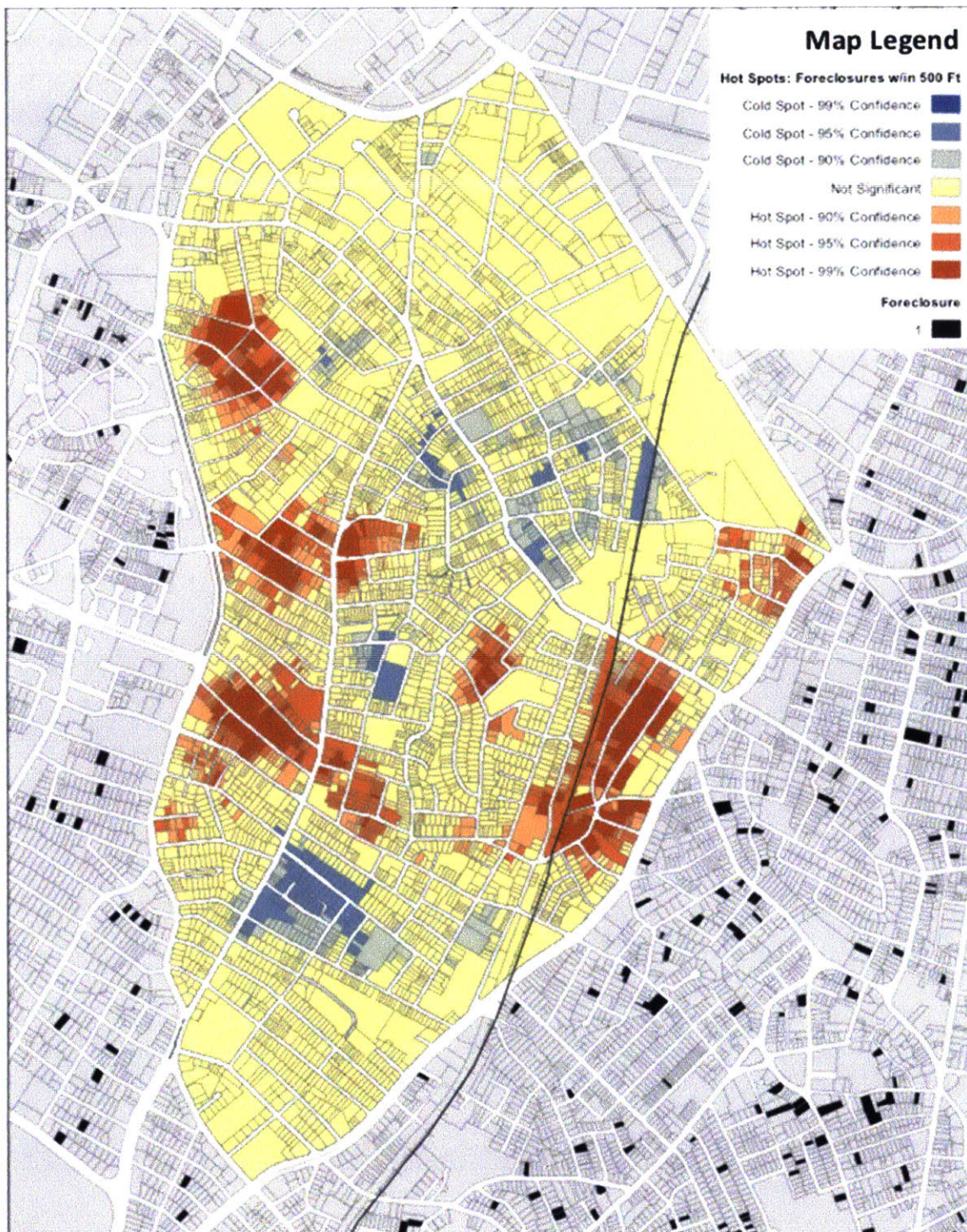


Figure 36: Hot Spot Analysis (Getis-Ord G_i^*) of Foreclosures in the DVC, 1993-2014 (with Land Trust)

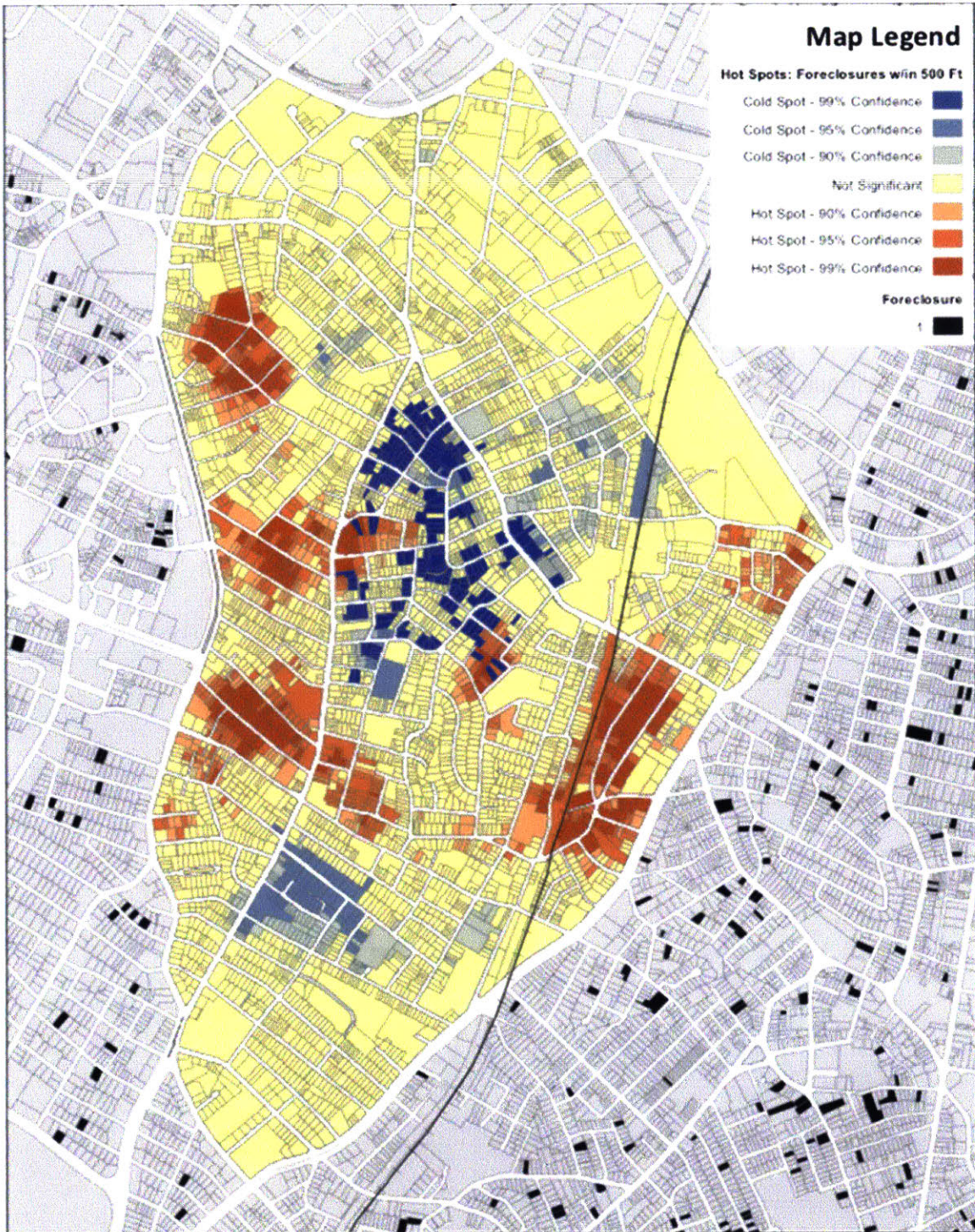


Figure 37: Building Values over Time in the Dudley Village Campus versus the Dudley Triangle

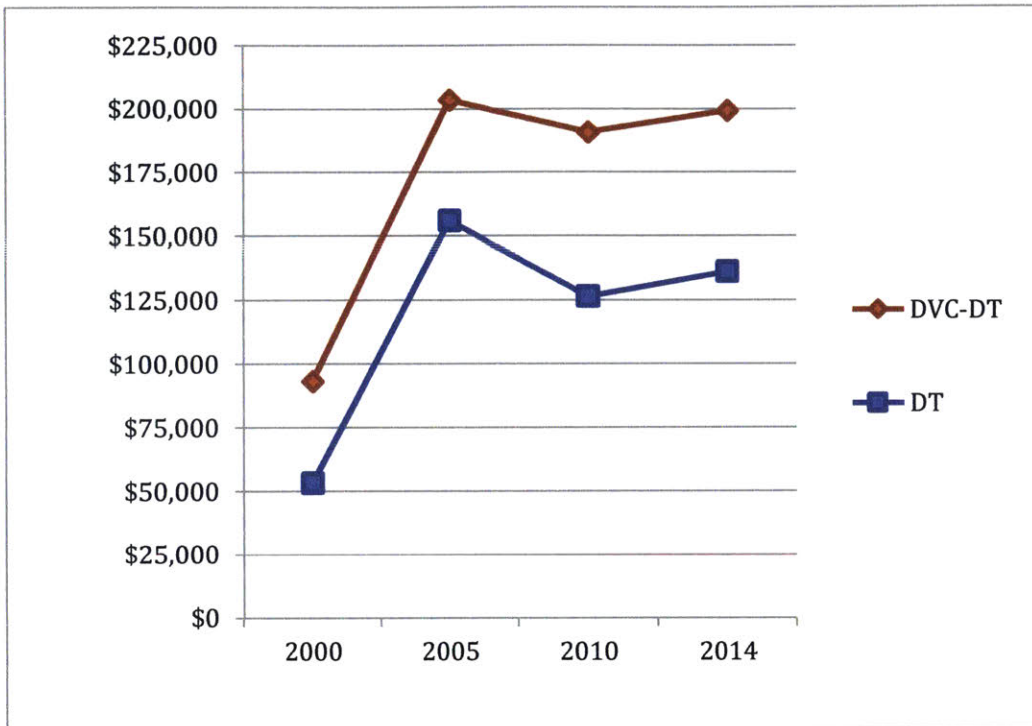


Figure 38: Building Values over Time in the Dudley Village Campus versus the Land Trust

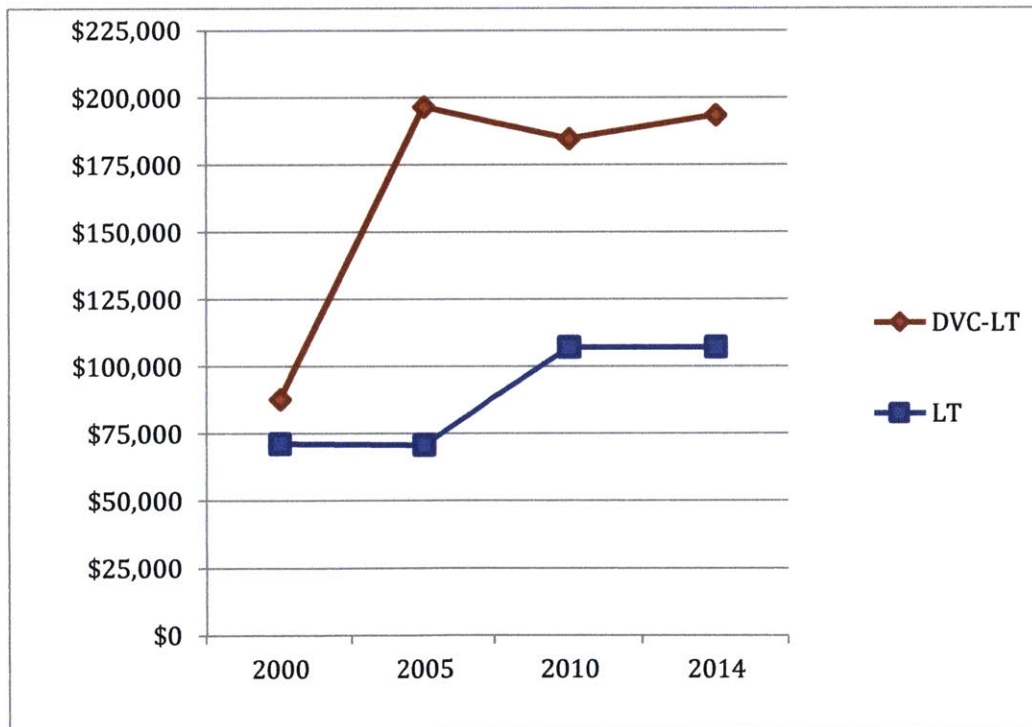


Figure 39: Owner Occupancy Rates over Time in the Dudley Village Campus versus the Dudley Triangle

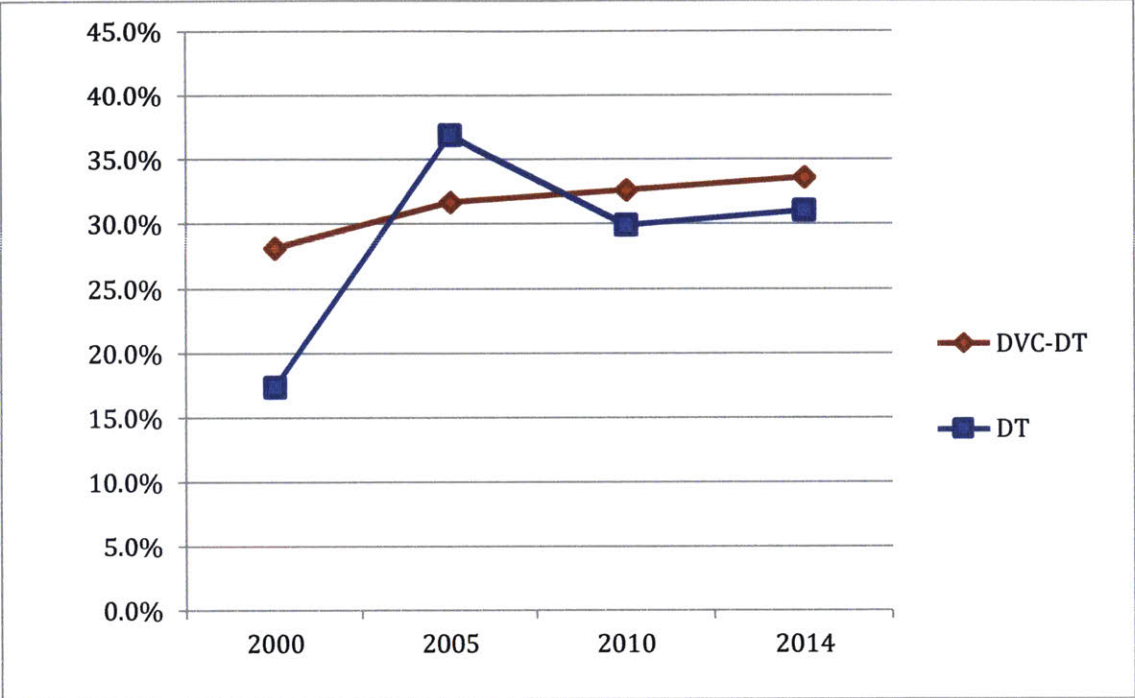


Figure 40: Owner Occupancy Rates over Time in the Dudley Village Campus versus in the Land Trust

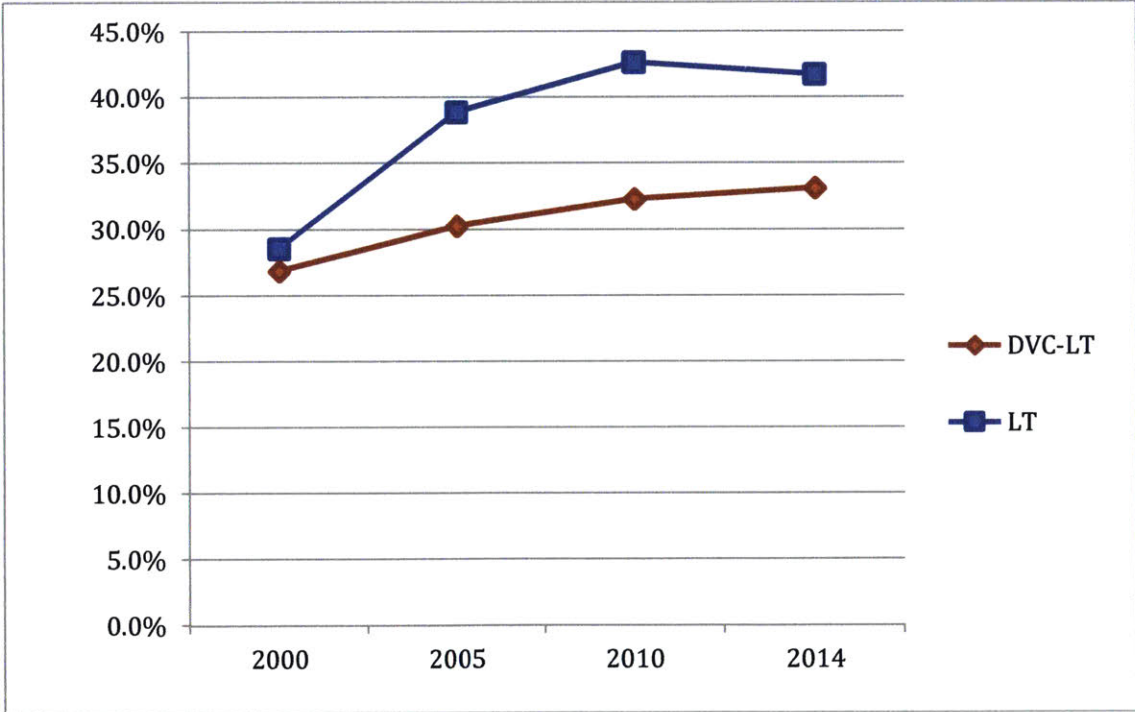
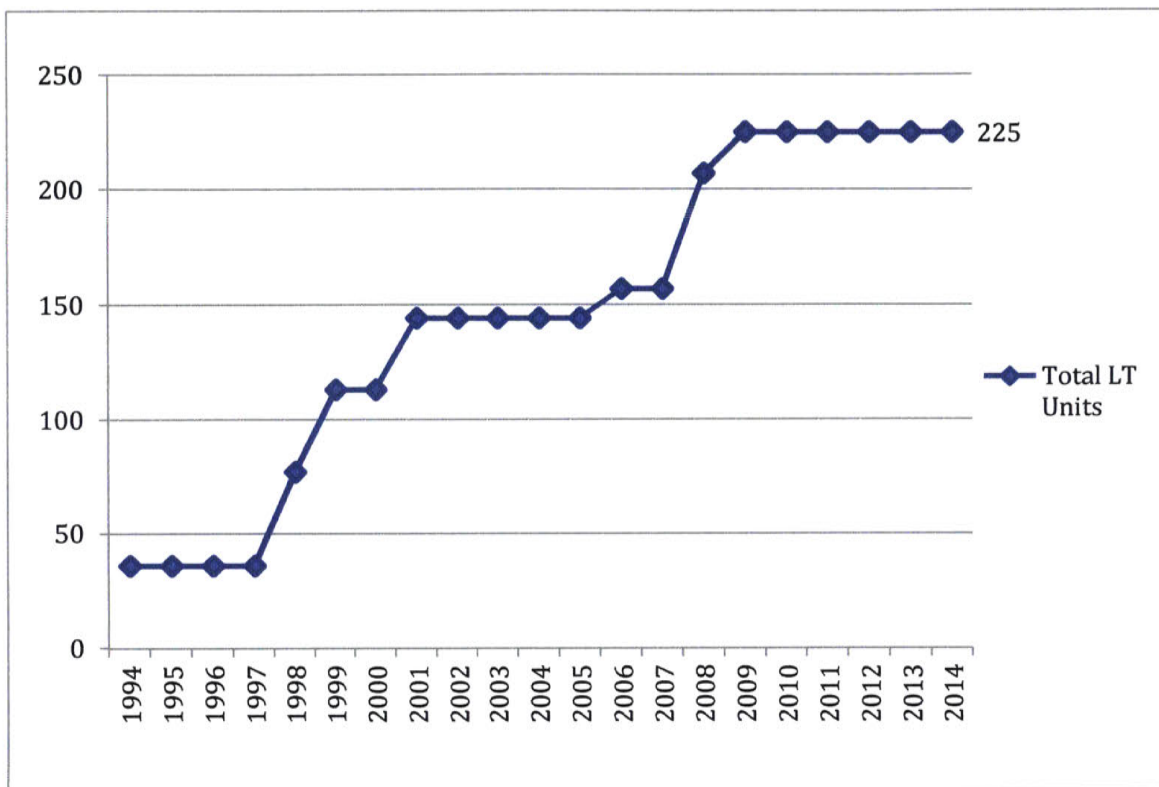


Figure 41: Total Number of Units Built on DSNI Land Trust over Time



INTERVIEW INSTRUMENTS

Questionnaire 1 (for subjects with general knowledge of housing market & history of housing development in Boston)

General Context

1. How, if at all, do you think the overall housing market has changed in Boston over the past 30 years? [Follow-up: The affordable housing market? (define affordable as 50-80% AMI as prompted or relevant)]
2. How, if at all, do you think the demographics of the city have changed over the past 30 years? In other words, do you think the same kinds of people live in Boston now as 30 years ago?
3. What factors have affected the development of affordable housing in Boston over the past 30 years?
4. How did the foreclosure crisis affect Boston as a whole? The Dudley area?

Neighborhood (for those with specific knowledge of Dudley area)

5. What do you think are the greatest current strengths of the Dudley area?
6. What are the greatest current challenges or threats to the neighborhood?
7. Over the past 30 years, what do you think has contributed most to the neighborhood's stability or revitalization?
8. Over the past 30 years, what do you think has most threatened the neighborhood's stability or revitalization?
9. Tell me about the impact of vacant lots on the neighborhood.

Wrap-Up

10. What else do you think I should know about the housing market in Boston? In the Dudley area?
11. Who else should I talk to about the overall Boston housing market? The housing market & history of development in the Dudley area?

Questionnaire 2 (for subjects with general knowledge of community land trusts, their impact, and their operation)

Context

1. How would you define a community land trust?
2. What do you think sets the community land trust apart from other affordable housing models or strategies?
3. [If they know of DSNI]: What do you think sets DSNI's land trust apart from other community land trusts?

History & Effectiveness of CLT model

4. By what criteria would **you** measure the effectiveness of a community land trust?
5. By what criteria do you think others (government officials, community residents, other organizations, etc) would measure the effectiveness of a community land trust?
6. What do you see as community land trusts' original goal(s) when they were first established? How, if at all, has this changed?
7. How well do you think most community land trusts have achieved their original goal(s)?
8. What were the original "best practices" for community land trusts? How, if at all, have they changed?

Affordability & Displacement

9. How, if at all, do you think community land trusts affect housing affordability in the neighborhoods surrounding them?
10. How, if at all, do you think community land trusts affect the population makeup/demographics of the neighborhoods surrounding them?
11. How, if at all, do you think community land trusts affect foreclosure and vacancy rates in the neighborhoods surrounding them?
12. How, if at all, do you think community land trusts affect the level of stability and revitalization in the neighborhoods surrounding them?

General/Wrap-Up

13. Have you seen any other impacts of the community land trust model?
14. Do you think more, fewer, or the same amount of people are interested in the land trust model? Why do you think so?
15. Who else should I talk to about the impact of the community land trust model in general, or DSNI's in particular?

Questionnaire 3 (for subjects with specific knowledge of DSNI's land trusts, their impact, and their operation)

Context

1. How would you define a community land trust?
2. What do you think sets the community land trust apart from other affordable housing models or strategies?
3. What do you think sets DSNI's land trust apart from other community land trusts?
4. Where did the idea for a land trust in the Dudley neighborhood come from?

History & Effectiveness of CLT model

5. By what criteria would you measure the effectiveness of a community land trust?
6. By what criteria do you think others (government officials, community residents, other organizations, etc) would measure the effectiveness of a community land trust?
7. What do you see as the DSNI land trust's original goal(s) (when it was first established)? How, if at all, has this changed?
8. How well do you think DSNI's land trust has achieved its original goal(s)?
9. What were the original "best practices" for the land trust? How, if at all, have they changed?

Neighborhood (for those with specific knowledge of Dudley area)

10. What do you think are the greatest current strengths of the Dudley neighborhood?
11. What are the greatest current challenges or threats to the neighborhood?
12. Over the past 30 years, what do you think has contributed most to the neighborhood's stability or revitalization?
13. Over the past 30 years, what do you think has most threatened the neighborhood's stability or revitalization?
14. Tell me about the impact of vacant lots on the neighborhood.

Affordability & Displacement (for those with specific knowledge of Dudley area)

15. How, if at all, do you think DSNI's land trust has affected affordable housing in the neighborhood over the past 30 years?
16. How, if at all, do you think the land trust has affected the population makeup of the neighborhood? Do you think the same kinds of people live there now as 30 years ago?

General/Wrap-Up

17. Have you seen any other impacts of the DSNI land trust?


18. Do you think more, fewer, or the same amount of people are interested in the land trust model? Why do you think so?
19. Who else should I talk to about the impact of the community land trust model in general, or DSNI's in particular?

COUHES Approval

MIT Committee On the Use of Humans as
Experimental Subjects

MASSACHUSETTS INSTITUTE OF TECHNOLOGY
77 Massachusetts Avenue
Cambridge, Massachusetts 02139
Building E 25-143B
(617) 253-6787

To: Lee Dwyer

From: Leigh Finn, Chair
COUHES 

Date: 12/03/2014

Committee Action: Exemption Granted

Committee Action Date: 12/03/2014

COUHES Protocol #: 1411006728

Study Title: Masters Thesis on the Quantitative Impact of the DSNI Community Land Trust on Housing Affordability and Neighborhood Stability in Roxbury/Dorchester

The above-referenced protocol is considered exempt after review by the Committee on the Use of Humans as Experimental Subjects pursuant to Federal regulations, 45 CFR Part 46.101(b)(2).

This part of the federal regulations requires that the information be recorded by investigators in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects. It is necessary that the information obtained not be such that if disclosed outside the research, it could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation.

If the research involves collaboration with another institution then the research cannot commence until COUHES receives written notification of approval from the collaborating institution's IRB.

Any changes to the protocol that impact human subjects, including changes in experimental design, equipment, personnel or funding, must be approved by COUHES before they can be initiated. You should retain a copy of this letter for your records.

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