ALL AT ONCE:
Integrating Sustainability into Arts-Focused Neighborhood Development in a Hot Real Estate Market

By

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ABSTRACT

Cities with industrial legacies often seek to redevelop former brownfield sites into opportunities for economic growth. Some of these same cities are also attempting to promote neighborhood-scale arts-oriented development for that same purpose. In this research, I explore whether and how cities with both rapidly intensifying real estate markets and a growing creative economy promote neighborhood-scale arts-oriented development projects. My research is based on the premise that integrating city-wide environmental, social, and economic sustainability into these projects is more likely to create civic spaces that meet the competing long-term interests of multiple stakeholder groups than projects focused on meeting contending needs in separate, dissociated locations. Based on a year-long study of the ARTFarm for Social Innovation in Somerville, Massachusetts, I examine the challenges of implementing mutually reinforcing environmental remediation, arts-based development, and sustainability in a rapidly intensifying real estate market. I base my analysis on key informant interviews, close readings of site planning documents, and other data gathered as a participant-observer at planning meetings.

To date, ambiguous land use tenure agreements and a narrow focus on integration within the bounds of a 2.2 acre site have eroded the ARTFarm's ability to pursue multidimensional sustainability and meet stakeholder interests. I conclude that projects like the ARTFarm could act as a staging area and home base for sustainability initiatives and programming on a network of sites rather than being confined to activities on specific and consequentially often problematic sites. Cities could use these projects as the context to enlist private developers to help fund remediation by ensuring that a portion of the remediated land gets returned to the public for well-planned environmental and social uses. Shifting to a coordination role enables ARTFarm to deploy a distributed network of urban experiments that seek creative ways to optimize sustainability objectives on publicly owned land.

Thesis supervisor: Lawrence Susskind
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Linking Arts-Oriented Community Development, Brownfield Redevelopment and Sustainable Development

The term "sustainable development" has been dogged by vague definitions, multiple interpretations, and conflicting plans of action since its appearance as an international policy mandate in the 1980s. The 1987 United Nations Brundtland Report defines sustainable development as " development that meets the needs of the present without compromising the ability of future generations to meet their own needs." (United Nations) This broad mandate of sustainable development requires simultaneously pursuing sustainability across environmental, social, and economic dimensions in ways that take into account the complex interactions between and among these dimensions on planet earth.

Environmental sustainability involves preserving the health and resilience of natural systems and minimizing human impacts on these systems' abilities to thrive. Environmental sustainability intersects with economic and social sustainability as humans attempt to meet their needs for food, energy, a clean living environment, and cultural/spiritual enjoyment.

Social sustainability involves acting in ways that promote justice, equity, fairness, freedom of cultural expression, human health and wellness, community development, individual and collective rights, and meaningful connections to history, place, tradition, and agency for change. Social sustainability is inextricably linked in with environmental sustainability through health, culture,

and access to natural resources and to economic sustainability through justice, rights, employment, and arts and knowledge production.

Economic sustainability involves generating and distributing value through systems of exchange of goods and services that meet human needs and desires in ways that reinforce—rather than detract from—social and environmental sustainability. Economic sustainability relies on environmental and social sustainability because these systems of exchange depend on stable and healthy human and natural systems.

Enacting sustainable development necessitates continuous and simultaneous efforts to achieve environmental, social, and economic sustainability. Simultaneous pursuit of these multiple objectives requires collective action between different interests groups who, without a system or process for collaboration, may try to maximize their own gain at the expense of other groups, natural systems, and future generations.

Cities with industrial legacies are seeking to develop former brownfield sites. Some of the same cities are also seeking to promote arts-oriented development and to emphasize sustainability in new development efforts. Emphasizing all three objectives simultaneously may be difficult, but there are good reasons to try. At the heart of all three, it turns out, is a focus on involving a wide range of stakeholders in the planning process (from project conceptualization through implementation and on-going adjustment). In this thesis I explore the prospects for linking these three community development ideas. My focus is the city of Somerville, Massachusetts that, for a variety of reasons, is on the cusp of such an effort.

The community development literature demonstrates that cultural flagship projects tend to attract tourism and (typically wealthier) "out-of-towners." Cities often use these cultural flagships projects – typically designed by high-profile architects with state-of-the-art infrastructure -- to catalyze growth in underdeveloped real estate areas. (Grodach 2010) While these projects can be enormously successful, they do much less for local residents than creating neighborhood-scale arts districts that meet the needs of local "maker" communities and provide a gateway to broader commercial, retail, and real estate development efforts that spill over into other parts of the city. My view is that utilizing neighborhood arts spaces as a platform to support cross-sector collaborations may be a particularly effective way to spur local job creation and to meet other local needs. Researchers have noted that places with neighborhood arts oriented development platforms can meet a host of local economic, social, and cultural needs including youth employment, local business development, (Markusen and Gadwa) and increased cross-sector collaboration. (Grodach, "Art Spaces in Community and Economic Development: Connections to Neighborhoods, Artists, and the Cultural Economy")

Taking this idea one step farther, linking brownfield redevelopment and the promotion of urban agriculture with the creation of neighborhood arts districts could achieve multiple local objectives in a way that reinforces and enhances each one, all the while growing the city tax base through private real estate investment. For cities that want to redevelop brownfields to promote sustainability in a variety of ways, linking these objectives to the creation of neighborhood scale arts districts may make it easier to overcome typical obstacles to each of

these objectives when they are pursued separately. Brownfields redevelopment adds non-productive land to the tax rolls and removes threats to public health. Former brownfields are often in the heart of the city where neighborhood arts districts can attract the greatest number of users. Arts districts need subsidized land or public property to keep costs down. Brownfields, which fulfill all these requirements for cheap land, can also benefit from spatial pairing with green infrastructure such as bio swales that help hold stormwater onsite and decrease runoff into the surrounding rivers and streams, along which many of these brownfields have historically been sited. Brownfields that may be too costly to clean up to the legal standards required for residential zoning can benefit a multiplicity of public interests through this mutually reinforcing programming.

Intensifying real estate areas with lots of brownfields, particularly those in the center of former industrial cities, tend to have the density of public transportation access required to more equitably serve populations with low car ownership such as young people, artists, low-wage workers, older and other individuals on fixed incomes, and mobility-impaired people. Locating economic development districts on former brownfield sites with adjacent public transportation both supports mobility (and thus economic opportunities) for these populations and creates potential savings in greenhouse gas emissions from reduced car use by other segments of the population who may be employed in these areas in the future and may reduce reliance on cars due to easy access to their jobs without them.

In contrast, when pursued separately, arts development, sustainability, and environmental clean up can remain fractured, spatially disaggregated, and in

some cases nearly impossible to achieve in areas with hot real estate markets, where the potential of land sales to private developers keeps public interventions on land cheap, temporary, and path dependent on existing networks of stakeholders who may fail to consider equitable distribution of community benefits from these projects. In a policy environment of thematic separatism, cities are more likely to focus on optimizing land use for one policy objective at the expense of the others. This isolated approach risks eroding the effectiveness of each discrete community development policy intervention *in situ*. Furthermore, because of limited land in these markets, such an approach may lead cities to pursue policy goals on land parcels at such a distance from the real estate epicenter, that they effectively remove those policy goals from the spatial agenda of large portions of the city's densest areas.

In a world of policy silos, arts, sustainability, and environmental clean up policies create economic development and urban infrastructure that potentially decrease their effectiveness for ensuring equity and sustainability. In terms of the arts, with creative economies tend to develop flagship cultural projects that concentrate resources in the hands of few arts developers, rather than nurturing cross-collaboration between existing neighborhood-scale arts businesses that both guide neighborhood growth and keep cultural and economic capital circulating through arts communities and related sectors.

With regard to urban sustainability measures, in a fractured policy landscape, installations that require dedicated space such as green infrastructure projects for stormwater management, urban agriculture projects, wildlife corridors, and public open space to reduce the urban heat island effect, all get

consistently pushed to the outer edges of the cities, where they remain disconnected from environmental clean up projects which they could in theory help support. In terms of brownfield remediation, without catalytic approaches to brownfield clean up that reaches beyond the bare minimum needed to interest private sector buyers, city clean up efforts remain haphazard and quick-fix-oriented, designed to translate into one-time profits from land sales as opposed to opportunities to nurture more sustainable economic development models for local communities.

In high-value areas, the land that cities own is often property that the private sector has not yet found a way to transform into a profitable investment, often due to contamination. By executing robust clean up efforts that utilize local, state, and federal funds and expertise where necessary, cities can transform contaminated blank zones into sites where important policy objectives rarely addressed by the private sector in these real estate markets, can be accomplished.

However, in order for cities to meaningfully address equitable distribution of economic value created by projects and the community access which public land necessitates, consensus building process must take into account a range of stakeholder needs and interests without buckling under the financial and political pressures created by land sales in a hot real estate market. These pressures may be partly alleviated by neighborhood-scale development projects that keep cultural and economic assets in circulation through a distributed system of property owners, local artists, and local businesses, rather than a flagship arts-oriented icon owned by a single development company.

In cities with limited land and hot real estate markets, pressures to develop all available open space for market-rate housing and commercial uses can undermine city policy goals of ecological sustainability, food access, local economic development. However, these high-value areas in cities are also often at highest risk of stormwater mismanagement, lack of public open space, fossil fuel dependency for electricity, economic and housing displacement of artists and other community members, and public health risks associated with contamination. These areas crowded with private commercial development are in particular need of environmental, local economic, artistic, cultural, and food access amenities that an integrated policy approach aims to provide.

In this thesis, I look at the prospect of these three separate community development objectives reinforcing each other by considering the case of Somerville, Massachusetts, a city of about 80,000 people in the Boston area. Sustainability advocates argued that using the site for urban agriculture made the most sense. The real estate community had their eye on the site as a location for upscale housing and commercial development (which the market would certainly support). Extensive public engagement of these competing stakeholders led to a sense that merging these objectives might be the best way of meeting the city's long-term interests.

The questions at the heart of this thesis are:

A. Can and should cities with hot real estate markets and a growing creative economy use neighborhood-scale arts-oriented development projects to

pursue environmental, social, and economic sustainability goals in mutually reinforcing ways?

B. Can cities utilize arts-oriented development projects to create civic spaces that meet the competing long-term interests of multiple stakeholder groups more effectively than spatially disaggregated efforts that seek to meet contending interests in separate locations?

In the case of the Somerville ARTFarm for Social Innovation, a group of city officials, artists, and urban agriculture groups are attempting to concretize the principles of sustainable development by pursuing environmental, social, and economic sustainability all on one 2.2-acre brownfield site. The project organizers' initial vision was to achieve these three objectives in one place. However, by choosing to pursue each one separately without combining the process or seeking mutually reinforcing partnerships between them, the ARTFarm project's intent has shifted away from environmental sustainability and social sustainability, reducing the overall impact of the project in terms of sustainable development. After over two years of work, the organizing team's plans for ARTFarm have shifted in intent from a three-way sustainability project to prioritizing certain economic development interests over other types of sustainability. The transformation of intent is indicative of the practical challenges involved in moving from principles to action on sustainable development.

In this research, I trace the process by which this shift occurred and identify the affects of several key pressures on three-way sustainability

development project outcomes in cities with hot real estate markets. My findings suggest that simultaneous pursuit of environmental, social, and economic sustainability through a consensus building process can generate more value for the system then single-issue pursuit because it both precludes the suboptimal results of zero-sum negotiations and maximizes the mutually reinforcing capabilities of the three types of sustainability. I synthesize these findings in a systems dynamics model that offers points of intervention for cities engaged in three-way sustainable development projects. Single-issue pursuit lacks a system to which to adequately address through land use agreements, returns to capital, sense of control, capture the flag, etc. and create piece-meal communications and decisions, disappearance of urban agriculture, paltry community engagement, missed opportunities for mutually reinforcing policy objectives.

CHAPTER 1:

Taking the Field: Brownfield Redevelopment, Flagship Cultural Projects, and Neighborhood-Scale Arts Districts

1.1 Reinforcing Brownfield Clean Up, the Arts, and Sustainability

In this chapter, I explain how cities can create mutually reinforcing links between brownfield redevelopment, arts or culturally oriented neighborhood development, and environmental sustainability in projects on public land. I argue that linking these three separate community development ideas in a single project has the potential both to strengthen the individual project and to further the sustainability and economic equality objectives of the neighborhood and the as a whole. Particularly in hot real estate markets, cities are under considerable pressure to sell off public land for market-rate housing and commercial development. The literature shows that the network of arts-oriented spaces within a community can spur jobs creation, youth development, and accretion of cultural/creative capital through increased collaboration across sectors. City-owned land, once remediated, can provide much-needed public open space in dense urban areas. This public open space can serve a variety of urban ecological functions such as hosting raised-bed urban agriculture projects, green infrastructure for stormwater management programs, ecosystem services provision through pollinator hosting, community gardens, and – depending on site conditions --- neighborhood-scale renewable energy projects.

Because cities are not under the same time pressures for quarterly returns on investment as real estate investors in the area, cities can afford to take the time to thoughtfully design programming and partnerships that seek mutually-reinforcing relationships between environmental clean up, ecological sustainability, and arts-based economic development on city-owned land. City-owned land in hot real estate markets can provide infrastructure for incubating arts-based businesses in what would otherwise be an unaffordable location, giving them access to a competitive marketplace of ideas and the chance to collaborate with other sectors that may not traditionally have seen artists and artisans as partners.

Broadly speaking, sustainable development initiatives at the local level such as renewable energy projects, stormwater management, urban agriculture and healthy food access, provision of ecological services through trees and pollinators, and public open space all require some degree of dedicated space and agreements with other contiguous land uses on how the space can be best used. Cities that have made former brownfield land accessible to arts-oriented development projects can, as proprietors of the land with more flexibility than private developers, facilitate conversations and develop plans for how to share space with sustainability uses as well as arts uses. Cities that rely on the three mutually reinforcing development strategies of brownfields redevelopment, arts-oriented development, and environmentally sustainable development, may stand a better chance of accomplishing their community development goals than cities who pursue these goals either separately or not at all.

To begin, I describe the community development context for cities with hot

real estate markets by comparing it to cities with slow-to-non-existent real estate markets in terms of the financial, spatial, and political pressures that hot-market cities face. Next, I list the (relatively few) case studies in which cities are redeveloping brownfield sites for environmental sustainability and community benefits within the framework of arts-oriented projects. I then present several examples of how cities respond use brownfield redevelopment projects to generate tax revenues and community benefits while preserving infrastructure and decreasing threats to public health.

I next present some of the potential community benefits and criticisms of "creative class" – led development, an economic development strategy that some cities choose to employ alongside brownfield development. Cities attempt to develop the "creative class" in two very different ways: cultural flagship projects designed to attract visitors to an iconic building or structure, and neighborhood scale arts-oriented projects designed to create a mosaic of cultural development sites distributed within a neighborhood. I compare the literature on flagship developments and neighborhood-oriented developments with respect to their potential to provide community economic benefit, tax revenues, and city publicity. The literature suggests that arts-oriented neighborhood projects distribute community benefits more effectively than flagship projects for several reasons, including neighborhood projects' increased local business ownership, wider potential for jobs creation, and the arrangement of cultural assets in a robust yet distributed network rather than a single spatial location.

I then briefly return to brownfield redevelopment, this time focusing on the community engagement tools and processes that the literature suggests produce

the best results for sustainability, environmental clean up, and community benefits. I conclude this section with a review of consensus building methods, suggesting that these methods provide a template for the kinds of community engagement needed to effectively combine brownfield redevelopment, arts-oriented development, and sustainability in mutually-reinforcing development projects.

1.2 Literature Review in Summary

The findings from the literature review are presented here in summary, with sources listed in subsequent sections. There is a sizeable literature on large-scale brownfield redevelopment projects that aim to support city's social policy goals such as affordable housing, increased parks or open space, or increasing public health due to legally mandated clean up efforts. Cities eager to increase their tax base and thus their economic prosperity will often partner with corporations and non-profits to redevelop brownfield sites for sports stadia, large-scale commercial developments, and flagship cultural development projects. The literature distinguishing flagship cultural projects from neighborhood – scale arts districts/clusters suggests that the latter have a higher probability of producing positive externalities such as local jobs, local business development, and increased agglomeration of cultural assets in neighborhoods.

In land use development projects, a substantial literature covers the process of decision-making and community engagement, particularly when residents and other stakeholders stand to loose or gain from the results of the

development process. A notable subset of this research is the literature on Consensus Building, which describes a series of processes that encourage stakeholders to propose and recommend packages of agreements on multiple points of negotiation at one time, with the goal of creating a workable and implementable agreement that meets all stakeholders' core interests. Consensus building methodologies have been used around the world by cities, developers, and community groups both as a means of avoiding litigation and making development decisions in land use disputes and new development projects. There is a very small literature that examines the process by which cities and partnering stakeholders redevelop brownfield sites for a neighborhood-oriented arts district when real estate pressures of planned transportation development creates short timelines and increase the perceived need for public space in an area of rapidly privatizing land interests. The small set of example cities that are in fact developing brownfield sites using arts-oriented strategies with an eye on sustainability suggest a need for the research into the mutually-reinforcing development potential of these three strategies. The rest of this chapter describes the literatures in which I situate my thesis research on this topic.

1.3 Hot–Market Pressures on Community Development

Managing community development in a hot real estate market (particularly development aimed at promoting greater income inequality and meeting sustainability objectives) is quite different from managing development in a slow or non-existent real estate market. In hot real estate markets, land is scarce and

therefore costly. In terms of financial incentives, hot-market cities stand to collect far higher revenues from land sales and parcel taxes than in slower markets. The pressure on cities from the public and private sectors to sell off public land increases, potentially leading to hastier development decisions focused on short-term gains rather than long-term development strategies. In terms of space, though demands for open space, infrastructure, and other amenities are similar to demand in low-intensity markets, the amount of land available for these uses is highly constrained. Thus, cities must meet a wider variety of stakeholder needs on a smaller amount of land, which adds spatial complexity and political contentiousness to development decisions. Increased financial, spatial, and political pressures combine to create a substantially different land development context in hot-market cities (such as Austin, Somerville, and San Francisco) as compared to slow-or-no-market cities. (such as Detroit and Cleveland)

Due to their experiences navigating these financial, spatial, and political pressures, many cities (and their citizens) recognize that unscrupulous land redevelopment in hot real estate markets often leads to social, cultural, and housing displacement, (Twigge-Molecey) increased economic and spatial inequality between and among neighborhoods, (Madden) and increased environmental costs associated with consumption patterns of more affluent lifestyles, despite the presence of "green building" standards and other amenities. (Rood et al.) Given these potential negative impacts and the spatial, political, and financial pressures described above, cities with hot real estate markets must carefully design land uses to accomplish multiple policy goals in one space, and are thus particularly well positioned to benefit from the reinforcing

effects of combining brownfield redevelopment, arts-oriented development, and sustainability-oriented development.

1.4 Neighborhood Arts Clusters and Environmental Sustainability

In cities with hot real estate markets that are subject to the pressures and challenges described above, flagship and neighborhood arts oriented projects can be combined with other elements to promote more sustainable patterns of urban development. For example, they can be combined with (and become a justification for) environmental cleanups. They can be combined with efforts to promote urban farming. If they are going to be sustainable, such projects must address environmental clean up, public access to open space, affordable housing, other ways of avoiding sprawl and gentrification.

The literature on neighborhood arts development combined with other urban sustainability initiatives is limited. Much more common are programs that combine an aspect of sustainability such as green jobs, environmental clean up, or urban agriculture with community economic development in poor areas. For example, in the post-2008 housing crash, Detroit has been investing in urban agriculture platforms that include green jobs, land use development, and employment development for low-income residents. (Bonfiglio, Groc, and Pendola) The city of Syracuse, NY initiated a public-private collaboration in 2010 called the Near Westside Initiative, which aims to deconstruct (instead of demolish) vacant and dilapidated buildings using local labor and then give tax breaks for buildings that are refurbished or rebuilt according to LEED standards.

The city plans to sell or lease a portion of the vacated and refurbished warehouses to artists. (McKeon 2010)

Brownfield redevelopment projects happen all over the world and at varying scales. An example of a large-scale brownfield redevelopment project is the 4.5-acre CERES community environmental park built on a former landfill outside of Melbourne, Australia. CERES is run by a non-profit with support from the City of Melbourne and features an organic farm, permaculture nursery, orchard, and classroom space for workshops and events. The park's stated mission is to "address the causes of climate change, promote social wellbeing and connectedness, build local and global equity, and embrace and facilitate rapid change." (ceres@ceres.org.au, 2015) The project includes an onsite biodigester for farm waste and food waste, a solar array, and a 4 KW wind turbine. Building stock includes a retrofitted historic farmhouse and newly constructed office space, and a solar-powered aquaponic greenhouse with 21,500-gallon fish tanks to fertilize the indoor farm. Due to its scale, location on the city periphery, and promotional strategies, CERES is more of a flagship brownfield redevelopment site with a sustainability theme, though absent is any sort of focus on neighborhood arts development in the organization's platform.

In addition to operating at various scales, places that consistently prioritize ecological sustainability in their policy-making may be more inclined to integrate sustainability parameters into their arts development projects as well their brownfield redevelopment projects. Cities such as Seattle, Portland, San Francisco, Berkeley, and Los Angeles that have strong sustainability policies at the city and regional level may see a greater number of sustainability measures

built into their neighborhood arts districts by virtue of stricter building codes, energy efficiency and renewables incentives, and other city-wide policies. The literature, however, has few examples, at least in the United States, of places where cities are pursuing sustainability platforms and arts-focused community development in integrated policy-based ways that manifest in physical spatial plans and infrastructure changes. Though these are centers for arts and cultural activities, they lack focus on neighborhood scale arts development that specifically attempt to advance sustainability initiatives beyond the (albeit, in some cases, highly robust for the US) standard sustainability practices in the city as a whole.

1.5 Brownfield Redevelopment in Hot Real Estate Markets

This section describes several models for brownfield clean up and how cities attempt to derive communities benefits from these brownfield redevelopment projects. The literature suggests that community engagement strategies for brownfield development projects, when designed and implemented effectively, can greatly enhance the development outcomes for neighborhoods, particularly for low-income communities that are more likely to live near contaminated sites and, by extension, potential brownfield redevelopment sites.

Large and small cities are trying to promote redevelopment of polluted and abandoned industrial areas as opportunities for economic development on previously underdeveloped land. Often labeled 'brownfield sites,' former industrial sites can be contaminated due to prior uses or migration of pollutants from

neighboring sites. Brownfield sites are "real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant." (US EPA) The US Environmental Protection Agency notes that "cleaning up and reinvesting in these properties protects the environment, reduces blight, and takes development pressures off green spaces and working lands." (US EPA 2006) Cities with hot real estate markets are keenly interested in redeveloping these sites for both the environmental benefits described above and the increases in revenue from the potential sale of these redeveloped sites.

In addition to potential environmental and financial gains, city-scale brownfield redevelopment can help cities utilize existing infrastructure on (albeit potentially contaminated) land. In some cases, maintaining existing infrastructure can cut future costs by preventing the need for expenditures on new infrastructure. According to Adrian Pilon, former president of the Montreal Centre for Excellence in Brownfield Redevelopment, brownfield redevelopment is a focal point for cities seeking sustainable development options because "they are located near the core of cities", making them ecological -- and potentially economical—alternatives to development of land on the city periphery. (Lam 2004, 37) A 2004 study produced by the Canada's National Round Table on the Environment and the Economy estimates that brownfield development "could yield up to 7 billion dollars annually in public benefits, including increased tax revenues, lower municipal infrastructure costs, and reduced health risks." (Lam 2004, 38) The environmental and health benefits, combined with potential cost savings

By remediating contamination, brownfield development projects can increase property values. However, in the absence of other policies, this development can in turn exacerbate gentrification and displacement. The question of how to redevelop formerly industrial land – that in many cases could be converted into valuable community or real estate assets due to location along waterfronts, in downtown areas, or in up-and-coming (gentrifying) neighborhoods – has been particularly relevant within the past 15-20 years in cities with growing populations of white-collar professionals in their 20s and 30s. Cities such as Amsterdam, Rotterdam, Berlin, Christchurch (New Zealand), New Orleans, Detroit, Pittsburgh, Baltimore, San Diego, Los Angeles, Boston, and New York are all launching efforts to turn formerly vacant land into "ideal neighborhoods" where broader policy objectives such as 'sustainability', 'livability' or 'community-building' can be achieved simultaneously. In these large and mid-sized cities, private land developers, non-profits, and city governments have been structuring partnerships that allow for a range of for-profit, non-profit, and public open-space uses on each site.

Factors that influence how brownfield redevelopment projects affect surrounding communities include phasing, real estate cycles, and funding availability. How cities choose to phase and seek funding for brownfield remediation projects shape how clean up is managed and the degree to which public and private stakeholders derive economic benefit from the project.

Brownfield projects vary in terms of how developers choose to phase the clean up. They will often subdivide the property by severity of contamination in order to guide the phasing of remediation projects. For example, in the case of

the Heifer International Center in Little Rock, Arkansas, the developers divided up the site and developed parts for commercial use in order to generate revenue for the on-going and more costly remediation components on more complex parts of the site. Architects phased construction so that the main building could be built on what was projected to be relatively clean ground while the truck and rail yard sites were being remediated. (Solomon 2009) A more complex case occurred in the 1990s, at Monarch Beaver Range Beaver Dam in Wisconsin. Developers proposed to facilitate the cleanup process in exchange for being able to buy a parcel at a time at its pre-cleanup price. The county government would be responsible for the actual cost of remediation, and would indemnify the developer and future owners from liability. In the end, the developer – Martin Sell (AIA) – reported making most of the money back by "creating more value for the property." (Solomon 2009, 10) Though developers generated profit on this site, reports were unclear about whether and how the city benefitted from the project other than having cleaner sites in the neighborhood over all.

In addition to providing new economic opportunities for private developers, brownfield redevelopment projects can also contribute to accomplishing housing policy, infrastructure renewal, and workforce development goals at both the city and neighborhood scales. One such example of brownfield-remediation community development is the Rainier Court housing development project in southeast Seattle's Courtland neighborhood. The 7-acre brownfield redevelopment site funded by state, federal, city, and private development funds is located in a part of Seattle designated as an 'urban village' in Seattle's 1994 plan to control growth and sprawl. The plan includes "high-density housing and

employment in areas with infrastructure and services already in place." (Baerny 2004, 25) South East Effective Development (SEED), a community development corporation that has been in the neighborhood since 1975, coordinated the redevelopment process. The site's designation as a brownfield formed the basis for the city of Seattle's and King County's joint application for an EPA assessment and helped SEED apply for a cleanup loan from the state of Washington. The project raised $25,000 in EPA funds to remove leaky underground storage tanks and conduct groundwater sampling. Testing revealed the presence of soil and groundwater contamination, including PCBs, petroleum, solvents, and heavy metals. The City of Seattle provided $7.6 million in Community Development Block Grant loans and helped coordinate $1.6 million in other federal grants. The project also received a $440,000 loan for site clean up from the State of Washington's revolving loan program. According to the project developers, "having loans available from the state and city in turn helped sweeten the deal for banks," which the project later leveraged for loans for further clean up efforts on particularly contaminated portions of the site. Rainier Court project broke ground in October of 2003. As of 2013, the four-phase project is 75% completed, and includes 70 apartments and townhomes of affordable senior housing. According to SEED website, the total cost of the project is estimated at $13.7 million. Clean up and construction created approximately 145 jobs and, once completed, the complex will have 5 permanent jobs. (Calander 2014)

Stakeholder engagement and ongoing feedback were crucial to the success of the project. A taskforce of Courtland neighborhood residents has stated that SEED has been "very good at engaging the neighborhood" (Baerny

2004, 27). Neighbors have said that SEED "listened carefully to our recommendations" and described the combination of clean up and gaining low-income housing as a "win-win situation." (Baerny 2004, 27) SEED hopes that "this development will be a catalyst for other development in this part of Seattle." (Baerny 2004, 27) In cities like Seattle with hot real estate markets, design and execution of on-going thoughtful community engagement determines whether the benefits from brownfield redevelopment extend into community development projects or remain under private developers' exclusive purview.

1.6 Economic Development through the "Creative Class"

Brownfield redevelopment can be a way of stimulating economic growth through increased tax revenues and potential community benefits. Another key way that some cities are developing their economies is by implementing Richard Florida's idea about building and expanding the creative class. Cities that choose this strategy actively promote themselves as leaders in attracting the creative class of artists, entrepreneurs, and creative industries more broadly. Referencing this "creative class", Richard Florida maintains that cities can employ tactics and strategies through which "with the right formula, the creative city can be constructed, the creative class lured, and creativity can be cultivated." (Long 2009, 212) In some ways, this notion of the possibility of industrial-city-turned-creative-haven reflects the branding that the city of Somerville and other cities with hot real estate markets have been trying to generate for its next phase of its urban development.

Though at times economically profitable, Florida's model has been heavily criticized by urban planners, geographers, and economists who claim that it overlooks the likely potential side effects of gentrification, sprawl, and the loss of public spaces in the wake of 'creative city' development efforts. An example from the literature that resembles Somerville's industrial-turning-'creative' economy is the city of Milwaukee, which has attempted to recast its industrial, "brew town" image along the lines suggested by Florida" (Long, 2009, 212). According to Zimmerman, results of creative city development in Milwaukee accelerated net job loss (with unemployment highest among minorities) and increased income inequality. Thus, the approach of creative-economy-led development increased the spatial divide within the city in a pattern of "striking juxtaposition of a downtown saturated with investment dollars and surrounded by wide arcs of capital flight" (Zimmerman, 2008, 240). Florida does acknowledge the potential externalities of the creative city development model including "the loss of housing affordability, uneven regional development, sprawl and ecological decay, mounting stress and anxiety, and political polarization" (Long, 2009, 214).

The Milwaukee case provides several clear warnings for formerly industrial cities with hot real estate markets like Somerville that seek to deploy a "creative economy" strategy when developing new projects. "Attempting to cultivate creativity in a traditionally...working-class city can greatly exacerbate the existing socio-economic divide" (Long, 2009, 218) Long also suggests that one way of reducing or eliminating some of the externalities of creative city development is to emphasize "civic participation and public action" (Long, 2009, 218). Civic action and participation in brownfield clean up at the city level typically

happens through local organizations, sometimes with outside technical and financial support. The extent to which cities choose to build on existing community organizations and networks to seek public input and engagement for projects reflects city's willingness to seek input and also the over-all political culture of a place.

Long's work in Austin, Texas demonstrates that creative city development can incrementally create "landscapes of cultural and experiential consumption accessible to the preferred core of the creative class." (Long, 2009, 217) He argues that providing cultural and consumption resources to visitors and revenues to the creative class may generate increased prosperity for the creative class itself, but may increase economic inequality in the neighborhood through preferential access. The only way to dampen these problems is to begin with a clear strategy for blunting the adverse effects of gentrification while both ensuring some way of sharing the profits created by the new development and ensuring public access to whatever new sites are created. As with brownfield redevelopment, creative-class-led development's best chance for extending economic benefits to the surrounding community is through a robust public engagement process and careful planning to avoid displacement.

1.7 Infrastructure-Based Cultural Flagship Development Projects

Once remediated, former brownfields provide grounds for various city economic development strategies. Cities eager to attract the creative class may undertake arts-oriented development projects on these sites to catalyze

economic growth. The literature outlines at least two divergent land use strategies that cities use to accomplish arts-led economic growth: flagship cultural development and neighborhood-scale arts development. Cities that rely primarily on flagship projects to catalyze economic growth create iconic development projects that benefit cities and developers, though they may not include the redistributive and economically equitable qualities of neighborhood scale projects. I will discuss the flagship strategy in this section, followed by the neighborhood-scale strategy in the next section.

Cities undertaking flagship cultural development will often commission a high-profile to design an architecturally unique new project or redesign a project that builds on existing iconic cultural resources, including artifacts of the city's physical infrastructure. Many of these flagship sites, rich in industrial heritage and infrastructural resources, are also brownfields. Flagship development strategies seek to develop a regional or even world heritage site – level tourism industry by commissioning large-scale developments with well-known architects and designers that lend emblematic symbolism to the project.

While these flagship projects are meant to symbolize bold visions for new city development, some researchers are critical of the notion that flagship development projects can actually generate growth without an existing ambiance of arts-based development. According to Grodach, flagship cultural projects are "highly dependent on a variety of contextual factors and ... should be positioned to build on existing arts and related commercial activity rather than gamble that they will generate new development from scratch." (Grodach 2010, 353) Successfully accounting for these "contextual factors" determines whether

flagship projects spark neighborhood and city wide economic development. However, even if no other measures are taken to embed flagship projects in the wider city context, they may still spark economic growth through attracting tourism and local visitors, even to areas that were former brownfields and thus previously avoided by outside visitors.

In the case of the Bethlehem Works project, the city of Bethlehem, PA used a 124-acre former steel plant to create a flagship-style development that now serves as an "arts campus" for the new creative class in Bethlehem, attracting visitors from around Pennsylvania and the northeastern US. The largest privately owned brownfield in the US, the site housed Bethlehem Steel, the nation's second largest steel factory, which was in operation along the Lehigh River from 1857—1995. In the early 2000s, numerous planning attempts by government agencies, politicians, arts administrators, philanthropists, and two large community groups, conversion of the steel plant never advanced beyond the preliminary planning reports. ("National Museum of Industrial History: Construction Updates") After years of debate in the Pennsylvania legislature, and the passage of a tax incremental finance (TIF) district in 2000, the site has been slowly redeveloped to include the Sands Casino Result Bethlehem (opened in 2010), and a 300-room hotel. The National Museum of Industrial History and a 'technology center' are under construction. ("National Museum of Industrial History: Construction Updates")

In addition to a museum, hotel, and casino, the site also includes a 9.5-acre 'arts and cultural campus', the land for which was donated by the Sands Casino. The cultural campus houses the ArtsQuest community arts center with a

two-screen independent cinema and performance space, and the SteelStacks 'arts campus' (opened in 2011) that includes indoor and outdoor performance space, exhibit space, a café, concert hall, and PBS39's public media education center. SteelStacks has had with over $80 million invested as of 2014 with plans to continue expanding. (See Figure 1) The SteelStacks complex won the 2014 Urban Land Institute Global Award for Excellence, nominated as "an excellent example of how communities can work together to find creative solutions for reusing abandoned industrial sites and brownfields." (Divine) SteelStacks had 850,000 visitors in 2013. Though this project transformed a sprawling industrial eyesore into a tourist attraction and cultural development site, the literature did not mention community engagement or on-going community benefits projects that resulted from land development.

Figure 1 The ArtQuest Complex at SteelStacks in Bethlehem, PA.

Source: Urban Land Institute and Wallace Roberts & Todd (WRT) 2014 (Divine)

While potentially divorced from community benefits and the redistribution of economic value they generate, cultural flagships can sometimes achieve such a high degree of emblematic status that they become internationally renowned sites that draw in tourism from around the world. One such cultural flagship

brownfield redevelopment project, the Zollverein Coal Mine complex in Essen, Germany was elevated from regional significance to a world heritage site. (See Figure 2) The complex has over 80 structures on approximately 247 acres. It operated as a coal mine and processing facility for 150 years, mining its last coal in 1986 and finally closing its doors in 1993 due to a drop in demand for coke. ("Rust Wire » Blog Archive » Lessons from Germany's Ruhr District, Part 1") The Zollverein Foundation, established and financed by the State of North Rhine-Westphalia (NRW), collaborates with the regional and local historic preservation authorities and local environmental agencies to manage the site. By 2008, the European Union (36%), the City of Essen (2%), Germany (6%) and the regional NRW (56%) invested approximately €165 million to rehabilitate the site. ("Rust Wire » Blog Archive » Lessons from Germany's Ruhr District, Part 1") The site currently includes 2 historical museums, a concert hall, seasonal swimming pool, (see Figure 3) art installation and exhibition spaces, ceramics studio, 5 restaurants, ice rink, recreational area, and plans for a Ferris wheel (under construction) that

Figure 2 The Zollverein Coal Mine Complex UNESCO World Heritage Site.

Source: "Zollverein Coal Mine Industrial Complex in Essen - UNESCO World Heritage Centre."

takes riders up over the site among the industrial structures. The site also includes the Zollverein School of

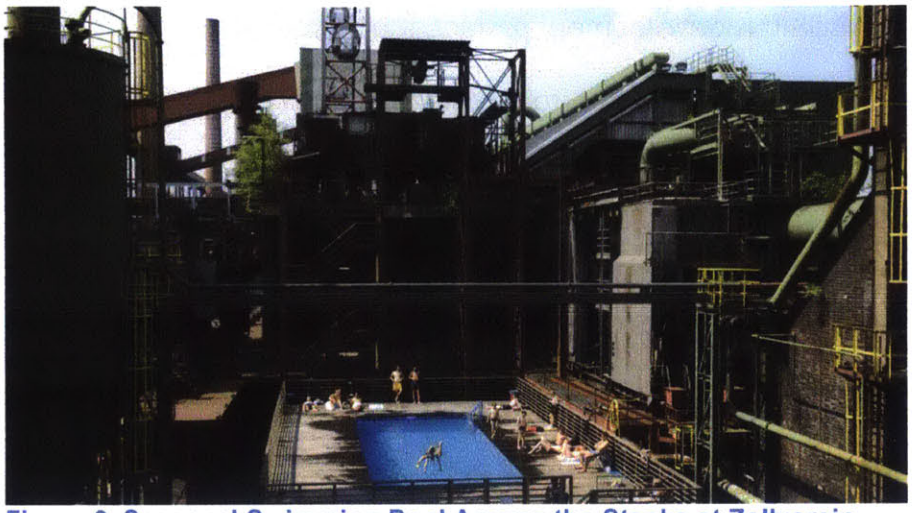

Figure 3 Seasonal Swimming Pool Among the Stacks at Zollverein

Source: Stiftung Zolverein

Management and Design, a 5-storey 35sqm cube located on the corner of the site. The school's construction was completed in 2006, designed by Japanese firm SANAA. (Kazuyo Sejima, Ryue Nishizawa) (Kelly) The Zollverein Foundation manages the property and is entrusted by the World Heritage Institute to develop it sustainably "for the purpose of culture and design, entertainment and tourism." ("Zollverein Coal Mine Industrial Complex in Essen - UNESCO World Heritage Centre")

As with the Bethlehem Works project, there is little discussion in the literature about the community engagement process behind this brownfield-turned-heritage-site. When redeveloping brownfield sites for arts-oriented uses, cities often choose to sell off the land to private developers who agree to manage clean up in hopes of reaping profits from its subsequent development. By passing on remediation costs to the private sector and seeking funding through state and federal resources, cities hope to clear the way for future urban development based on the increased land values of a large tract of flagship

remediated land.

In contrast to neighborhood-scale arts development projects, these flagship redevelopments tend to concentrate resources in a defined spatial area and are often managed by a single company or entity. As opposed to neighborhood-scale arts development where land sales occur over time and with a variety of different owners and developers, flagship projects tend to cover large tracts of land that could be highly profitable once developed, and are typically purchased by a single developer. From a city's point of view, a single large sale simplifies the legal and financial logistics of land sales and can provide a degree of much-valued certainty for city budget planning. Thus, cities may prefer an up-front sale of large parcels to a single developer over a patchwork of sales spread out over time.

While this organizational arrangement can generate coherent (and potentially more profitable) programming, particularly if a private company is managing the site, the entity may be less inclined to negotiate with other potential stakeholders, due to the concentration of decision-making power in one organization. In addition to guaranteeing cities budgetary certainty and defrayed clean up costs, this type of hasty land sale to private developers can also inadvertently strain community engagement efforts through increased time pressures. Cities that feel pressure to develop former brownfield sites and pass on clean up costs to developers risk loosing sales if they do not act fast. However, because a substantial portion of the community engagement occurs in the period before the project is actually built, at the time in which cities feel the most pressure to sell off land to developers, cities must potentially choose

between a robust process and money in its coffers. Though cities have various legal obligations to account for a range of stakeholder interests in a development project, if the project is hastily planned up front, other stakeholders in the project may loose a large portion of the negotiating power they possessed early on in the project. Once the land is in the hands of private developers, it may be difficult for cities to negotiate community benefits agreements that combine a broad set of (potentially disparate) stakeholder interests.

Though often found in hot real estate markets that present challenges for community engagement and environmental clean up, brownfield redevelopment flagship projects can also be found in rural areas. One such example is Julie Bargmann's AMD&ART Park project at a former coalmine in Vintondale, PA. (See Figure 4) Bargmann and her collaborators have turned the brownfield sites into a park that "decontaminates acid mine drainage through a series of filtering basins... gaining physical presence in the Litmus garden, where native plantings range in color from acidic orange to alkaline blue to illustrate different stages of soil treatment." (Lam, 38) (See Figure 5)

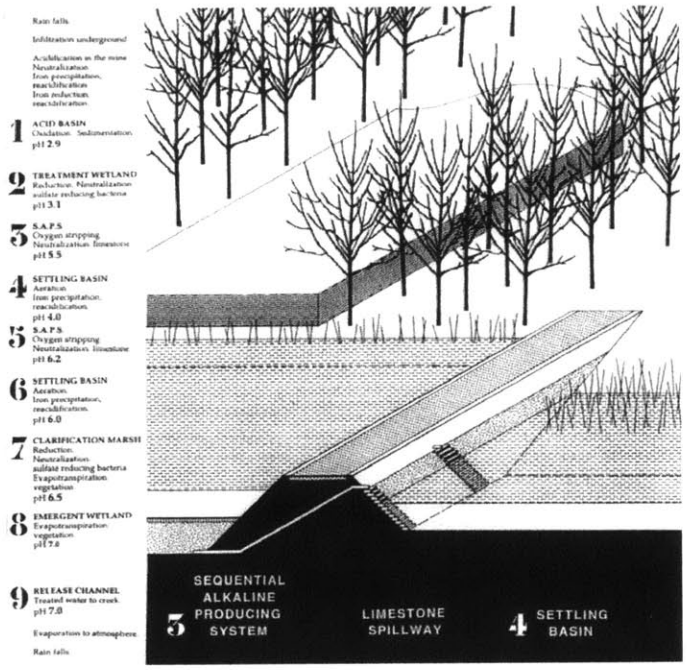

Figure 4 Nine-Step Remediation at Vintondale

Source: D.I.R.T. Studio, 2008 "Pruned" report.

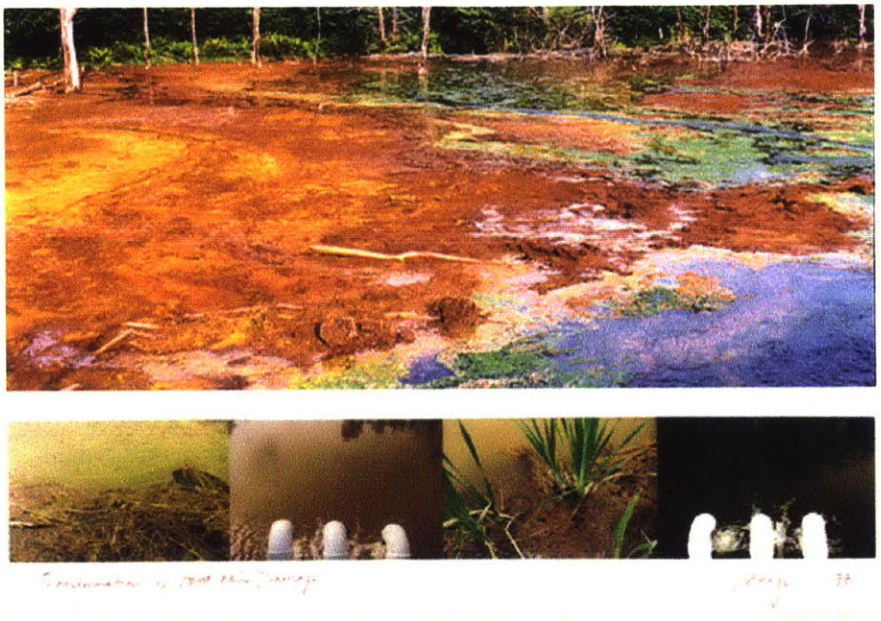

Figure 5 Filtering Basins in "Technicolor Poison" by Julie Bargmann

Source: D.I.R.T. Studio, 2008 "Pruned" report.

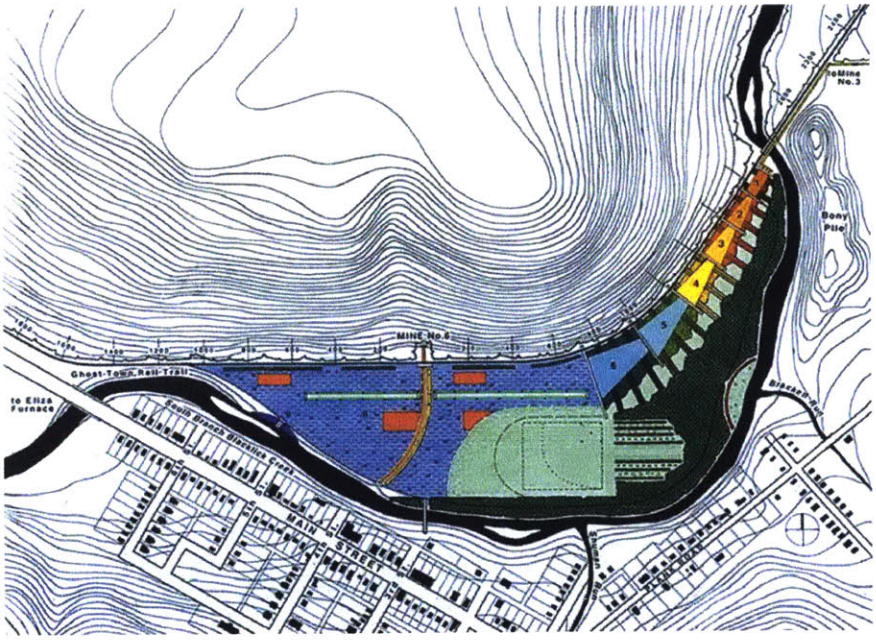

Figure 6 Map of AMD&ART Park

Source: D.I.R.T. Studio, 2008.

The project was completed in 2004 by Bargmann's Virginia-based studio D.I.R.T, (Dump It Right There) in collaboration with artist Stacy Levy, historian and AMD & ART non-profit director T. Allan Comp, hydro-geologist Robert Deason, and AmeriCorps Interns. (See Figure 6) While towns in rural areas still experience legal and societal pressure to clean up brownfield sites, since many of these rural projects are in much slower real estate markets and are managed by a combination of entities including state, county, and local governing bodies, there may be more leeway for artists to intervene, creating another avenue for arts-oriented development of a slower, more spatially-distributed sort. Though beyond the scope of this research, artist-led brownfield redevelopment in rural areas may offer unique possibilities for planning and community engagement.

1.8 Neighborhood Scale Arts-Oriented Economic Development

Returning now to urban land development, flagship cultural projects are usually designed to spur citywide economic growth via arts-themed development on a single large site. In contrast, some cities develop neighborhood-oriented, smaller scale projects that might also focus on the arts, but do not necessarily seek to attract the creative class to areas where they are not present. These neighborhood-oriented projects are also worth considering for the wider range of community uses that they incorporate in comparison with flagship developments.

These spatially distributed development patterns in neighborhood-scale arts-oriented projects provide opportunities for community engagement and mutually reinforcing programming for sustainability and brownfield

redevelopment. A neighborhood cultural district is defined as "a recognized, labeled, mixed-use area of a city in which a concentration of cultural facilities serves as the anchor for attraction." (Frost-Kumpf in Markusen and Gadwa 2010, 386) Cities engaging in creative-economy-led development often "fail to build decision-making frameworks where artists, smaller scale organizations, and a multiplicity of distinctive cultural communities can participate in cultural planning." (Markusen and Gadwa 2010, 388) At the neighborhood scale and in smaller cities however, cultural initiatives are often public-private-community partnerships. (*Ibid.,* 385) Though the economic outcomes of these projects vary considerably between cities, the literature suggests that the sheer diversity of possible development strategies and physical structures included in such developments can potentially provide more opportunities for diverse uses and partnerships than a single flagship project.

Cities that pursue neighborhood-oriented arts development strategies may choose to work with private companies, artist collectives, non-profits, and residents using a variety of institutional frameworks. In his 2011 study of the arts and cultural district patterns of Dallas-Fort Worth, Grodach distinguishes between four types of arts spaces:

- *Artist cooperatives:* established, managed, and owned cooperatively by artists;

  Arts incubators: spaces that offer low-cost technical administrative and professional assistance and exhibition, rehearsal, and/or office space for

arts organizations, arts-related businesses, or artists;

- *Ethnic-specific art spaces:* spaces dedicated to the presentation and display of the history, art, and culture of a specific racial or ethnic group;

- *Community arts or cultural centers:* multifunctional and multidisciplinary spaces that typically focus on arts consumption and participation for residents of their immediate neighborhood or citywide.

Grodach studied 12 arts spaces in Dallas-Fort Worth that included a sampling of each of the four different types described above, and were developed in cluster-like spatial patterns within specific neighborhoods. He found that arts spaces in Dallas-Fort Worth are involved in neighborhood revitalization activities and tourism activities, arts education, and incubating artistic production. (Grodach, 2010 "Art Spaces in Community and Economic Development: Connections to Neighborhoods, Artists, and the Cultural Economy, 83") However, he also found that "the social networks that art spaces help individuals build do not bridge different cultural fields" because though artists add value to other sectors through a range of products and services, and even support themselves through work in multiple sectors, they often have very little formal assistance with regard to actively building connections and bridges between sectors in the economy. (*Ibid.* 84) To increase the value of collaboration across sectors in neighborhood scale arts development projects, Grodach recommends that artists can build on their expertise with partnering with other public, private, and non-

profit entities to form partnerships that broaden their incubators and enable artists to work in other sectors. Incubator spaces can "explore new tenant mixes" that allow start-up cultural enterprises to access resources, bring individuals together from different fields to increase collaboration and new employment opportunities, and create programs aimed directly at cross-sector collaboration and employment. (*Ibid. 84)* Fostering this sort of collaboration is an important task that cities undertake when designing neighborhood-scale development strategies.

Some cities build arts districts around artist's centers that are hosted in a variety of neighborhoods and can stretch across genres. Examples in Minneapolis-Saint Paul include Homewood studios, in a northeast Minneapolis African American neighborhood, Intermedia Arts that concentrates on residents and areas within a five zip-code area on the city's poor south side, and Interact, a center for artists with disabilities. (Markusen 2006, 1933) Other centers in the Twin Cities include the Loft Literary Center, the Playwright's Center, the Textile Center, and Filmmakers' Project, Minnesota Center for Photography, Northern Clay Center, and a printmaking studio. These centers offer mentorship opportunities for young artists as well as access to critiques, studio space, and materials needed for their work. In the case of Minneapolis, these centers are not confined to a specific area within the neighborhood, and thus contribute to a mosaic of different arts-based options around the Twin Cities area. (*Ibid.,* 1933) This spatial coordination of this "mosaic" of cross-sector arts organizations that contribute to the cultural identity and economic development of the city is as a result of deliberate policies at the city level that were well-funded, well-

coordinated, and specific to the neighborhoods in which they are embedded.

Cities, advocacy organizations, and some researchers use economic impact assessments to support the claim that arts and culture investment at the neighborhood scale will contribute jobs, economic output, and public sector revenues in a regional economy. This theory, though popular with many former industrial cities looking for economic development opportunities, remains controversial. According to researchers like Markusen and Gadwa, these theories and claims "remain under-tested" in that they do not build or test causal models of the cultural sector's contribution to economic development. (Markusen and Gadwa 2010, 382) They further argue that economic impact assessments typically do not reveal the beneficiaries of associated real estate appreciation or provide information on former residents who may have been displaced in the process. (*Ibid.* 382) It is incumbent on planners and cities to consider these impacts and engage in initiatives and processes to actively address them with neighborhood residents, artists, and city economic development departments.

In service to bolstering neighborhood economic benefits from arts-based development, Stern and Seifert recommend cultivating cultural clusters with modest concentrations of cultural providers (both non-profit and commercial), resident artists, and cultural participants. By comparing the concentrations of cultural clusters in Philadelphia in from 1997-2006 and positive correlations with improved housing market conditions during roughly the same time period, they conclude that cities should nurture neighborhood cultural clusters given their "potential for generating social benefit purely beyond commercial success as well as their strategic importance to the health of a city's and region's creative

economy." (Stern and Seifert 2010, 276) Planners can maximize the benefits generated by cultural assets agglomeration in neighborhood cultural/arts clusters in three ways: (*Ibid.* 275-276)

1. Given the significant positive externalities associated with cultural clusters, invest in profit-seeking (not necessarily profit-maximizing) land development strategies including small loans for pre-development while providing technical assistance.
2. Engage in strategic place-making including infrastructure, community and park facilities [as separate from arts facilities] and other community amenities.
3. Explore workforce development strategies that use arts centers to connect young people [and newly-arrived residents] with resources and opportunities to form networks and collaborative ventures.

Based on these three development guidelines, the literature describes a variety of community benefits and "positive externalities" that stem from neighborhood-scale arts-oriented development. Cities can tailor this development strategy such that it reinforces environmental sustainability, economic equality, and environmental clean up. If thoughtfully designed, the community engagement process for this sort of development builds on a neighborhood's spatial diversity and unique characteristics in such a way that a complex set of stakeholder interests combine into customized development appropriate for the

scale and policy goals of a particular place.

1.9 Public Engagement Processes for Environmental Remediation Projects

Though arts-oriented development focuses on generating economic growth in creative ways, the fact remains that the urban land that cities hope to redevelop, regardless of the strategy, is often contaminated and requires clean up prior to use for economic development purposes. Community engagement processes that occur for arts-based development become more complex when combined with the fact that brownfield sites need to be remediated. After outlining some basic themes of community engagement in environmental clean up projects, I argue that consideration of environmental clean up's interaction with arts-oriented development, particularly at the neighborhood scale, is crucial in theorizing ways to develop sites in which the three goals of environmental sustainability, environmental clean up, and arts-based development are mutually reinforcing.

Environmental clean up is related to the level of acceptable risk as determined by design goals for the site. "The level of cleanup is related to the level of risk." (Solomon 2009, 2) In the early 1990s, the federal government established cleanup standards for an individual site based on Applicable or Relevant Appropriate Requirements (ARARs). Depending on the site, these cleanup standards can be: chemical specific (i.e., maximum contaminant levels for drinking water); location specific (i.e. restriction based upon land-used

considerations such as wetlands, historical sites, or sensitive ecosystems); and action specific (i.e., design, construction, or operational requirements. (Lederman and Librizzi 1995, 22) These ARARs are combined with risk assessment methodologies to determine the answers to the question "how clean is clean enough?" for a given site. These standards do not mention design decisions; rather, they refer to a set of technical parameters within which uses and testing results must fall in order to be deemed "safe" from the perspective of the US federal government.

Brownfield remediation decisions go far beyond technical calculations because they involve perceptions of risk, financial incentives, and community design goals. From the mid-1990s to the mid-2000s, the literature focused primarily on remediation technologies and financial incentives for developing brownfield sites. The literature at that time maintained that along with time and cost associated with remediation, "uncertainty of future liability and public perception" present barriers to economic redevelopment of brownfield sites. (Lederman and Librizzi 1995, 21) Because of the complex nature of contamination – buildings, land, and groundwater – "it is imperative for developers of brownfields to integrate the ultimate use of the property and surrounding environment into any development and remediation strategies." (Lederman and Librizzi 1995, 22) Because state and federal environmental regulations for brownfield remediation are based primarily on desired end uses, community engagement to determined the types of land uses desired becomes crucial to environmental clean up efforts.

When discussing stakeholders, particularly in cases where brownfield site

remediation requires substantial technical expertise, case studies have tended to consider the variety of technical stakeholders, decision-makers, and experts as the main stakeholders in the project. (Dair and Williams 2006, 1353) Research has noted that there is significant variation in development outcomes, from project that meet the bare minimum requirements for clean up, all the way to projects that become examples of best practices case studies for future projects to emulate.

1.10 Consensus Building Processes

In brownfield redevelopment projects that take into account stakeholder-determined end uses and seek to spark neighborhood-scale arts-oriented development, thoughtful decision-making should be predicated on a consensus building process that is robust enough to account for stakeholder interests in creative and effective ways. The processes by which neighborhood level sustainable development projects that have an arts and sustainability focus are done needs to emphasize public and stakeholder engagement. Consensus building includes an array of practices in which particular stakeholders, selected to represent different interests, come together for face-to-face, long-term dialogue to address a policy issue of common concern, often with the help of an experienced facilitator or 'neutral.' (Susskind, McKearnan, and Thomas-Larmer) The process strives for *informed consensus*, which is reached "when all parties involved have agreed (overwhelmingly) that they understand exactly what's in the proposal or package, and that they can live with that proposed settlement."

(Susskind and Cruikshank)

The underlying premise of such negotiations is that when stakeholders effectively represent the interests of their constituencies (not just rehearse entrenched positions) and agree to use their ingenuity, skill, and creativity to work out a package of agreements that meet the interests of all the parties as much as possible, then the agreements are more likely to be upheld, sustainable, and create benefits for the parties above and beyond a temporary agreement. Scholars of consensus building propose that this is a very different outcome from 'majority rules' decision-making so often found in public and private sector negotiations, which often leave parties divided, resentful, and with less effective agreements over all. (Susskind and Cruikshank) The complex sets of interests, concerns, and expertise involved in arts-oriented brownfield remediation projects requires a nuanced approach to consensus-building that seeks to source stakeholder creativity and motivation from within the group as well as outside experts.

Consensus building processes are not only about producing agreements and plans but also about experimentation, learning, change, and building shared meaning. (Innes and Booher) "On one level, collaborative planning can be seen as a strategy for dealing with conflict where other strategies have failed. On another level...[it can function] as part of the societal response to changing conditions in increasingly networked societies, where power and information are widely distributed, where differences in knowledge and values among individuals and communities are growing, and where accomplishing anything significant or innovative requires creating flexible linkages among many players." (Innes and

Booher 1999, 412) It is these flexible linkages among players that can lead to future collaborations between stakeholders and, in the case of neighborhood-scale arts-oriented projects, can spark further arts-based development growth over time.

The literature on consensus building helps illuminate the kinds of processes required for arts-based brownfield redevelopment that includes economic equity and environmental clean up. Describing the process by which decision makers in such projects can be held accountable, Susskind explains that "stakeholder engagement guarantees communities, organizations, and companies affected by public decision-making a role in formulating project designs, policies, programs, or 'solutions' that can meet as man of the most important interests of the relevant stakeholders as possible. Final decisions are still made by public agencies, given their formal statutory authority. But, officials can be held accountable in a different way if the choices they make... diverge from the recommendations produced by all the stakeholders working together." (Susskind) Using the example of collaborative water management disputes, Susskind notes that " while scientific input is important in water allocation decisions, it is not decisive. Non-objective judgments – about whose interests should be given priority and how problems should be framed – always dominate technical judgments about how much water is likely to be available and what uses of that water are appropriate given water quality levels." (Susskind) In terms of environmental clean up of contaminated sites and water quality management disputes alike, non-objective value judgments about what standard of cleanliness (and therefore what uses are permissible) with land or water are important to

keep in mind because they guide decision-making and can also be the starting point for new and creative packages of agreements. Having a template for standardized brownfield redevelopment may be of little assistance when the redevelopment seeks to include a variety of community development goals in the negotiation, goals that legislators may have not anticipated. Consensus building becomes crucial for these types of projects because cities have no template for this sort of publicly owned land development.

A Consensus Building Approach to process seeks to "to produce agreements that are ***fairer*** (in the eyes of all the parties), ***more efficient*** (reached more quickly at lower cost), ***more stable*** (because there is not an unhappy minority seeking to overturn whatever agreement has been reached) and ***wiser*** (because scientific and technical information is taken seriously rather than subject to attack in court)." (Susskind, Kangasoja, and Peltonen) The consensus building approach – as defined by Susskind and Cruikshank in *Breaking Roberts Rules (2006)* – includes 5 steps:

(1) Convening to agree on the structure and preliminaries of the process;

(2) Assigning responsibility and roles e.g. of participants, facilitator, ground rules, observers etc.;

(3) Facilitating group problem solving using a mutual gains approach;

(4) Reaching agreement by striving for unanimity based on meeting the most important interests of this concerned; and

(5) Holding people to their commitments, which include keeping the parties in touch with each other to address issues as they come up. (Susskind and Cruikshank)

Local, indigenous knowledge of place and space are key to reaching agreements about resource allocation. In order to create sustainable agreements, "it is the responsibility of political leaders to involve scientific and technical experts who know how to work with stakeholders to ensure public learning so that every future decision is easier for users to understand." (Susskind) While a consensus building approach is not appropriate for all decision-making processes and disputes, it can be particularly effective when:

> No individual has adequate knowledge or information to make an informed or wise decision; when highly divergent views must be reconciled to move forward; when cooperation and support will be needed to implement an agreement; and/or when decision makers are seeking an integrative and elegant decision that generates innovative and creative solutions to the issues at hand. (Susskind, McKearnan, and Thomas-Larmer)

When executed effectively, consensus building can produce high-quality agreements, innovative strategies, intellectual capital, (mutual understanding, shared problem frames, agreed upon data) social capital, (trust, relationships) and political capital (ability to work together for agreeable ends). (Innes and Booher) Beyond coming to agreements that help address immediate policy and

decision-making concerns, Innes and Booher note that consensus building can be valuable from a societal perspective because it "links the distributed intelligence of many players so they can form a more coherent and responsive planning system which mirrors the networked, evolving social context." (Innes and Booher) In the case of neighborhood-scale arts development projects that incorporate brownfield redevelopment and environmental sustainability measures, the consensus building model can "link the distributed intelligence of many players" into an evolving development strategy in a hot real estate market.

1.11 Consensus Building for Environmental Clean Up

Though few projects (if any) in the literature have used consensus building for neighborhood-scale arts + sustainability development projects, consensus building has been used extensively in brownfield clean up projects around the world. The following examples brownfield remediation projects contain several lessons for cities engaging in arts-based sustainability projects on formerly contaminated sites. Consensus techniques have helped resolve environmental disputes in communities faced with either a growing threat of pollution or the aftermath of industrial accidents ("Using Dispute Resolution Techniques to Address Environmental Justice Concerns: Case Studies") The Consensus Building Institute (CBI) in Cambridge, MA outlines a range of alternative approaches to litigation in cases where overburdened communities are working to come to agreements with all parties concerned that are "fair, just, stable, and wise." ("CBI's Mutual Gains Approach to Negotiation") Some of the lessons

learned outlined by the CBI and the US-EPA in environmental justice consensus-building processes include:

" Work with agency officials, facility workers, and other groups to establish appropriate division of labor, maintaining flexibility over the timing and agenda-setting of negotiations.

Identify and secure the representation of relevant interests, paying particular attention to the most vulnerable segments of the population and their unique concerns.

Prepare constituencies for the kinds of tradeoffs they will be asked to make, and forecast the level of community organization necessary to implement and monitor the desired arrangements.

Secure needed technical and neutral process assistance, paying close attention to a facility's relative influence over environmental quality, the representative set of changes that could be encouraged at the facility, and the qualities and desired tasks of a professional neutral.

Work with the neutral to develop parameters for negotiation, including an agenda, ground rules, and timing for deliberations with other parties. Pay attention to the questions that arise in the context of a community demanding action following an accident." ("CBI's Mutual Gains Approach to Negotiation")

Stakeholder engagement processes that optimize only for environmental clean up efforts alone do not necessarily produce fair, stable, efficient and wise agreements. Even in cases where consensus-building approaches produced robust, bar-raising environmental outcomes, projects still risk exacerbating housing affordability problems in areas they seek to redevelop. For example, the Bo01 development project in Malmö, Sweden became an exemplary case study of environmental planning (akin to a flagship project for sustainability), although it has not successfully addressed issues of the gentrification that the new development has been exacerbating since its completion in 2006.

The Bo01 project employed a process akin to consensus building process in order to create a metric for all of the different types of environmental attributes of a neighborhood space. The community engagement process (called a Creative Dialogue with stakeholders – though the process was not carefully stipulated) generated two metrics with which to evaluate development proposals for the site and design elements of the final site build-out:

1. Green Space Factor (modeled on the City of Berlin's 1994 policy): a weighted set of design criteria (e.g. green roofs, trees with trunk diameter of more than 1.4" covering at least 270 square feet, and stone paved areas with open joints for water flow) that stipulate the qualities and quantities of desired open space for the project.

2. Green Points list of 35 design biodiversity elements (e.g. 'all plants have some household use,' inclusion of frog habitats, and on-site treatment of grey water in the courtyards) of which developers must include 10 in their final proposals.

The planners used these create criteria for development, has discussion, and all things are on the table, and these kinds of criteria may be a step in helping certain interests and stakeholders clearly articulate their interests and giving choice and options about how to create a package that would aid in the consensus building process. The project management planned for a

neighborhood scale brownfield redevelopment project of a former automotive manufacturing plant with the goal of 100% renewable energy on site. There are 1,400 units on the site with a population density of 26 residential units per square acre and 50% open space. Toxic soils were replaced and/or sequestered, and planners deployed storm water management strategies to minimize re-contamination of groundwater. (Austin)

A wind turbine provides most of the electricity for the housing development while district wide geothermal storage network provides almost all of the heating and cooling for the neighborhood. While energy efficiency results were not as high as 100% renewable sources as hoped, it is still a strong example of how neighborhood-wide brownfield development can contribute to a city's sustainable development goals in energy, spatial planning, waste management, and even biodiversity. The city employs an ecologist to track patterns of regeneration in flora and fauna as the project develops. (Austin)

Though exemplary in terms of environmental performance, complaints about the unaffordability in both the Bo01 neighborhood and the surrounding neighborhoods have dogged the project since its build-out. Without the robust sets of commitments to proposing packages that meet the interests of all stakeholders in projects, community engagement processes that optimize for one type of project performance, though admirable, will not produce outcomes that are sufficiently fair, efficient, stable, and wise. The Bo01 project's failure to effectively address issues of economic displacement serves as a cautionary tale for planners in arts + sustainability neighborhood projects on former brownfield sites. In hot real estate markets where timelines are tight and land use pressures

are high, designers of community engagement processes are faced with enormous pressures. However, in order for cities to meaningfully address equitable distribution of economic value created by projects and the community access which public land necessitates, consensus building process must take into account a range of stakeholder needs and interests without buckling under the financial and political pressures created by land sales in a hot real estate market. These pressures may be partly alleviated by neighborhood-scale development projects that keep cultural and economic assets in circulation through a distributed system of property owners, local artists, and local businesses, rather than a flagship arts-oriented icon owned by a single development company. If carefully managed by partnerships between cities and community groups, brownfield redevelopment projects can provide cheap access to land in desirable real estate locations for community development projects such as arts-oriented spaces.

In the case study that follows, I trace the development of one city's plans for an arts-oriented neighborhood-scale project with added sustainability features (urban agriculture and public open space) in a real estate market that is rapidly heating up due to the introduction of a new transit line in the next several years. Through the outlining the successes and shortcomings of this project's planning process, I explain how these three community development ideas (arts-based, brownfield remediation, and environmental sustainability) can generate mutually reinforcing outcomes and how cities might consider designing future projects with these ends in mind.

CHAPTER 2: Research Design

Analyzing the factors that make sustainable development work at the site scale, especially the extent to which stakeholder engagement turns out to be crucial, in a hot real estate market, could probably emphasize quantitative measures in carefully selected neighborhoods and cities across the country (or even the world). Given how little has been written about the ways these factors or elements of a city's development strategy interact, I decided, instead, to adopt an exploratory case study approach. This is a preferred analytical method when examining "a contemporary set of events over which the investigator has little or no control, and when the focus is on a contemporary phenomenon within some real-life context." (Yin 1994, 1-9) Having identified a gap in the literature regarding whether cities can or should pursue (simultaneously) their concerns about sustainability, brownfields redevelopment, job creation for artists or makers, and a concern about economic fairness in a hot real estate market, I decided a much more exploratory approach was called for. The nearby city of Somerville, Massachusetts offered an ideal setting in which to explore these interactions. The Brickbottom neighborhood has been an industrial area for more than 200 years. It began as brickyards, then became rail yards, then factory back lots, and today it is home to freight rail, commuter rail, and artists housing. The Brickbottom Artists Association is a 150-unit live-work complex in the southwest corner of Brickbottom. Over a year ago, one of the artists living in that complex approached Professor Larry Susskind about the design and project planning of the site that would become the ARTFarm. I was fortunate enough to receive an

invitation from the artist and later the Somerville Arts Council to get involved in this project and track its development over the course of the 2014-2015 year. Below, I will identify in more detail the data I decided to collect and my approach to making sense of my case study findings.

2.1 Research Data

I was fortunate to have access to 28 key informants willing to let me interview them as the Brickbottom development debate heated up in Somerville. I was also able to sit in on a wide range of public and private meetings. Also, there are a great many sources of public information including past plans, newspaper accounts and historical photographs that were quite revealing. I sought out interviewees because they seemed to play a significant role in the development of the project or because other interviewees recommended them. I spoke withal of the most important city development officials; former and current directors of non-profit organizations and for-profit organizations whose participation in the project is either on going or anticipated; members of business associations and community corporations; and local artists and Somerville historians. Interviews lasted between 25-45 minutes and were structured around a set of 10-12 open-ended questions. I asked how real estate development usually proceeds in Somerville, what the neighborhood planning process traditionally entails, and how relationships among organizations, institutions, and city departments had unfolded. I had access to various preliminary designs for the site in question, along with environmental reviews, transportation planning

documents, and relevant grant proposals. I tried to emulate Robert Yin's case study method. (Yin 1994)

2.2 Research Theory

I selected the Brickbottom development project because the stakeholders involved are representative of environmental, social, and economic sustainability factors that contribute to sustainable development at the site level and on the city scale. This unique opportunity to examine a project (the ARTFarm) that is grappling with the complexities of actualizing sustainable development in a hot real estate market by responding to pressures of competing interests holds valuable lessons for cities that aim to enact more comprehensive sustainable development in the built environment. These pressures include: pressure to remediate the contaminated site, pressure to maintain the character of the neighborhood, pressure to distribute community benefits from the project, and pressure to pursue conventional economic development.

This project has its own independent seed funding from foundations, political support from the city, and a team of engaged project organizers who seek to create something unique and valuable on the ARTFarm site.

These supportive factors of funding, political capital, and leadership provide a range of options for responding to development pressures and executing the project development team's vision for the site. By examining the extent to which stakeholders' interests are included in this case, this research seeks to identify the opportunities and challenges for these actors in enacting

development plans and policies, as well as potential strategies for advancing their policy goals in the future.

Furthermore, since this project is the first of its kind in an area where the city intends to do more of this type of arts-oriented development, the outcome of the community engagement processes will probably set a precedent for how the city develops future sites in the area and in the city more broadly. Thus, lessons learned in this case have a high probability of being applied to other projects in the near future. The development project's flexibility allows for a more experimental approach to land development that can be improved upon in the coming years.

2.3 Research Blueprint

My basic interview questions emphasized:

1. How is Somerville developing its economy?
2. How is Somerville utilizing the Brickbottom area to develop its economy?
3. How do plans for ARTFarm in Brickbottom reflect Somerville's economic development strategies?
4. In addition to economic development in general, what sustainability and neighborhood arts development goals does Somerville have for Brickbottom, if any?
5. What are the goals that the ARTFarm project seeks to accomplish? Who set these goals?

6. What is the evidence that a broad range of stakeholder interests is or is not being taken into account in the ARTFarm planning process?
7. What is the evidence that a broad range of stakeholder interests is or is not being taken into account in the ARTFarm design?
8. How has Somerville tried to incorporate multiple stakeholder interests in its community economic development efforts? Did they do anything out of the ordinary with the ARTFarm project?

Study unit of analysis: The City of Somerville

The City of Somerville is a mid-sized former industrial city outside of Boston, Massachusetts with a population of around 80,000 people. My study takes place inside of Somerville, which has both a relatively supportive political climate for sustainable development and an industrial history leading to contamination of the small amount of land that is left for redevelopment. The city has the challenges of pursuing sustainable development in a hot real estate market that many larger cities have, and the small-scale political apparatus to attempt new models of development that may be applicable to larger cities in the future.

The City of Somerville is experiencing a rapid intensification in its real estate markets. (See Figure 7) Particularly with the proposed Green Line Extension with its target completion date of 2017, there is much concern in the communities surrounding the development that people will be displaced by these new transportation projects and the spikes in land values they will create. The

Massachusetts Area Planning Council (MAPC) has predicted that there will be substantial regressive consequences on low income Somervillians due to increases in housing prices. (See Figure 8) The MAPC also charts the predicted increase in monthly rents per bedroom in each of the areas along the planned Green Line route. Washington Square and Union Square, closest to Brickbottom, are predicted to have the highest spikes in rents, at least early on in the Green Line Project. (See Figure 9)

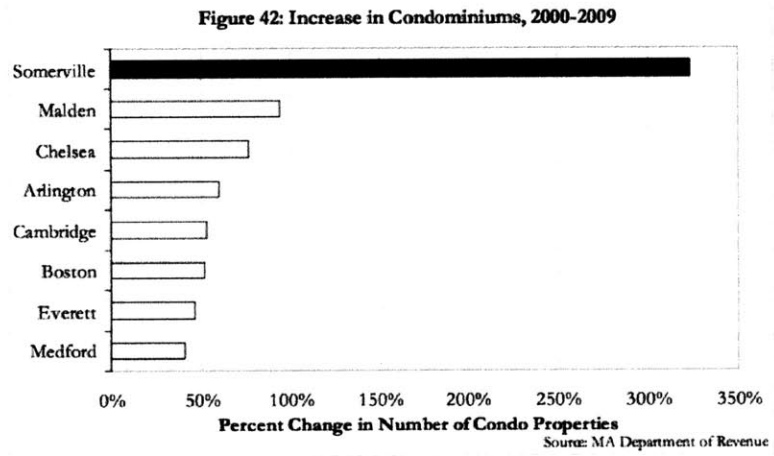

Figure 7 Somerville Has the Highest Percentage Increase in Condominiums in the Boston Area (2000-2009)

Source: City of Somerville Housing Report 2005-2009

Expected Rent Increase as Percent of Income
GLX Lower-Income Renter Households

	Less Than $10,000	$10,000 - $20,000	$20,000 - $35,000	$35,000 - $50,000	$50,000 - $75,000
Low	17.4%	14.3%	5.8%	3.8%	2.7%
High	20.9%	17.2%	6.8%	4.6%	3.1%
Households	1,003	1,032	1,011	1,231	1,539

Data from Padmapper and American Community Survey, 2007 - 2011.

Figure 8 Rents in the Green Line Extension Walkshed are Expected to Spike

Source: MAPC Mapping Displacement Study 2008

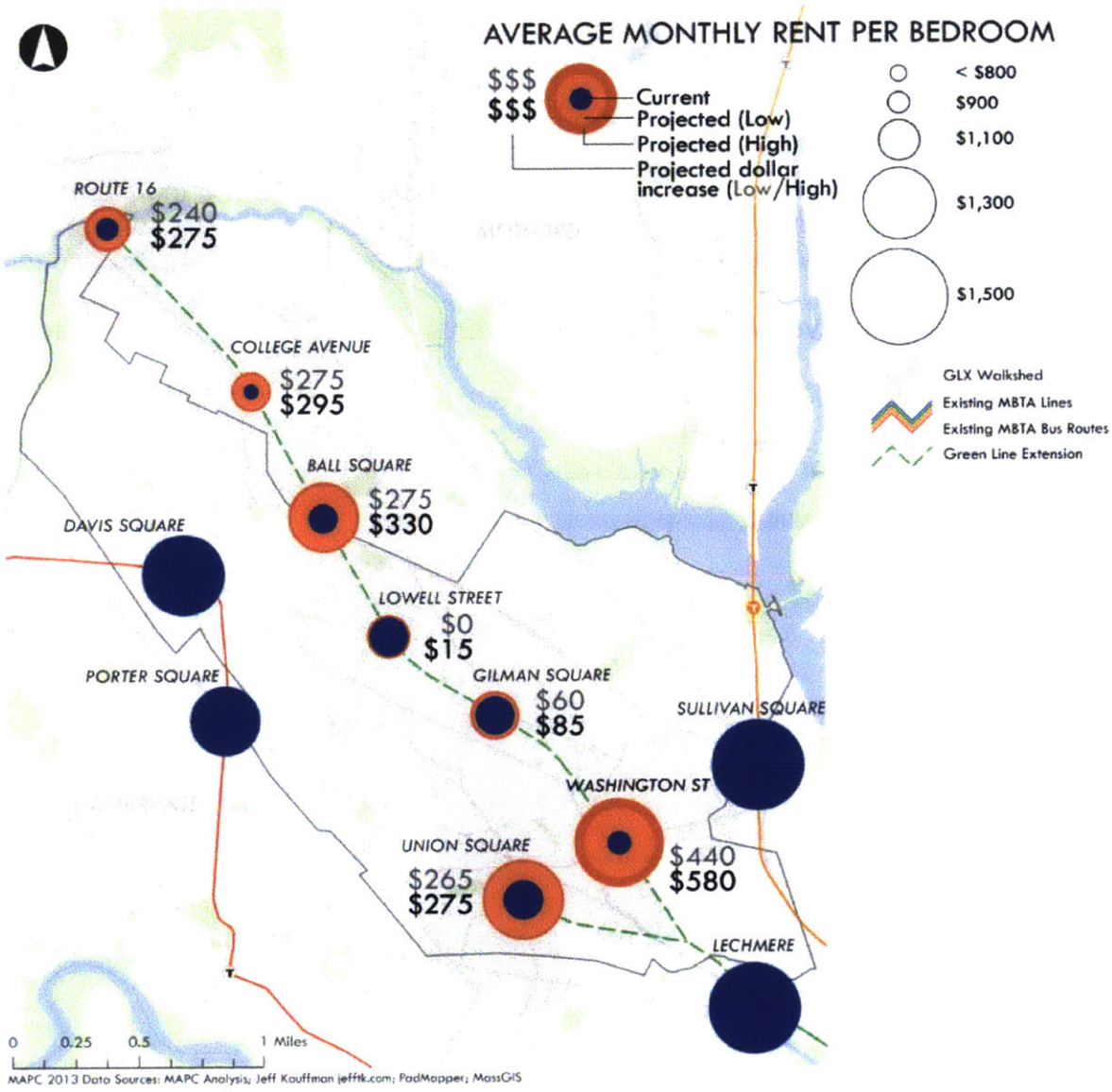

Figure 9 With the Green Line Extension Monthly Rents in Brickbottom are Expected to Increase by a Minimum of $440 per Bedroom per Month

Source: MAPC Mapping Displacement Study 2014

As is evident from the MAPC's study above, the Green Line Extension has serious implications for equity in Somerville and is an important part of the considerations that the ARTFarm will contend with in its planning and decision-making process. Brickbottom has a lower medium household income than most

other census tracts within a 1-mile radius of the ARTFarm site. (See Figure 22) Rents are relatively inexpensive in comparison with other parts of Somerville (See Figure 24) but will rise with the Green Line Extension. (See Figure 9) Approximately 65% of the residential units in Brickbottom are rental units. (See Figure 25) Brickbottom is sparsely populated due to its industrial past and its patterns of displacement of residents to make way for new infrastructure projects, most recently in the 1940s-1950s. The patterns of displacement are likely to continue unless policy interventions are made. (See Figure 8 and Figure 9)

Logic linking data to propositions:

a. Based on observations of planning meetings, analysis of site plan proposals, historical maps, and key informant interviews, I reason that there are significant structural barriers to incorporating a broad range of stakeholder interests into redevelopment projects in the Brickbottom area.

b. The ARTFarm project's community engagement process and design proposals both reflect these structural barriers and embody opportunities to intervene in order to incorporate more stakeholder interests.

CHAPTER 3: Case Study – ARTFarm for Social Innovation in Somerville, MA

"The buildings were first erected to accommodate the tress, and the trees then cut down to accommodate the buildings…"

--Somerville historian Samuel Drake remarking on Brickbottom's transformation, 1874 (Carole Zellie)

On March 20, 1872, the ***Somerville Journal*** ran an article stating: " We want the influence and energy of an intelligent population to push back and finally crow out entirely the pig pen and rendering establishments which are now rioting in corruption on the adjacent low land." (Carole Zellie) These same sentiments of utilizing the intellectual and economic capital of Somerville's population to beautify, enhance, and develop the polluted Brickbottom neighborhood are being echoed 140 years later in the latest ARTFarm development plans.

3.1 Introduction to the ARTFarm Project

The ARTFarm for Social Innovation project provides the former industrial city of Somerville, Massachusetts with a physical site upon which to simultaneously pursue *environmental, social, and economic sustainability* objectives and achieve—on a small but significant scale—sustainable development in the Brickbottom neighborhood. The ARTFarm proposes a neighborhood-scale arts-oriented development on a 2.2-acre city-owned former brownfield site with a stated programmatic commitment to environmental

remediation, urban agriculture, the arts, and community economic development. In the ARTFarm case, *environmental sustainability* means brownfield remediation and urban agriculture, *social sustainability* takes place in terms of arts-based development and civic space, and *economic sustainability* occurs in the form of increasing the return on capital for development investments such that the future value generated circulates within the local economy.

Since its inception in 2013, the ARTFarm has provided the City of Somerville with an opportunity to accomplish its broad mandate of sustainable development, but has been struggling to accomplish its ambitious goals. In the planning process, the city and other stakeholders make design and programmatic decisions about the site that simultaneously affect all three types of sustainability objectives. However, in the absence of a specific focus on mutually reinforcing measures, stakeholders perceive these policy objectives as non-mutually reinforcing and thus incompatible. In order to minimize conflict and complete plans under time constraints, some sustainability measures—environmental sustainability, in particular—were taken out of the project's plans, thereby diminishing the overall sustainability of both the planning outputs and the project build-out that follows. Given that the ARTFarm project is still in the planning stages, I refrain from making claims about the final build-out results of the ARTFarm plans. Rather, I focus on the plans with the assumption that they are at least partially indicative of how and why these sorts of multi-objective community development projects get built the way that they do.

Sustainable development plans are subject to pressures from stakeholders seeking to pursue their interests on a particular project. The

pressures exerted on community development projects on brownfield sites in intensifying real estate markets heavily shape the planning process and how clean up, urban agriculture, the arts, and community development objectives get pursued in those plans. In this chapter, I use the ARTFarm project's planning process as a lens through which to analyze how these pressures shape sustainable development project plans. In order to trace how the various pressures affect the planning process, I discuss the primary and secondary clusters of project stakeholders below.

3.2 Primary and Secondary Stakeholder Clusters

I begin with an overview of each stakeholder cluster's main interests, concerns, ideas, and suggestions for the project, drawing on the 28 key informant interviews that I conducted over a period of 6 months. (August, 2014 to January, 2015) These stakeholder interviews both provide historical context for the ARTFarm project and reveal how these stakeholder clusters respond to and in some cases create the various pressures that operate within the planning process. For the purpose of describing the dynamics between and among project stakeholders, I have grouped them into clusters or sub-categories that fall into two larger categories: primary and secondary. Primary (or direct) stakeholder clusters are those clusters made up of stakeholders with direct involvement in generating plans for the ARTFarm site, deciding whether and how to enact these plans, and/or regulating the outcomes of these plans. The primary clusters include: the environmental remediation cluster, the resident artists cluster, the

urban agriculture policy cluster, and the economic management cluster.

Secondary (or indirect) clusters consist of stakeholders that have a mandate that extends beyond managing the specific ARTFarm site. The secondary clusters include: the arts-oriented development cluster, the neighborhood community benefits cluster, the long-range city planning cluster, and the city economic development cluster. Two stakeholders—the main coordinators of the ARTFarm project—are listed in both primary and secondary clusters, as they hold roles at the two levels and can potentially bridge multiple clusters in the system by virtue of their double roles. These dual-role stakeholders are the **ARTFarm Instigator/Catalyst** and the **City Arts Coordinator**, and are indicated with an asterisk (*) in the list below.

Four Primary Stakeholder Clusters

1. Environmental remediation cluster:

- **City Environmental Coordinator**

This cluster's primary interest is in fulfilling their legal mandate to clean up the contaminated sites to appropriate standards for a given land use within the time allotted by state and federal law. In the case of the ARTFarm project, the main stakeholder is the **City Environmental Coordinator**, whose interests are to select site remediation strategies that fall within the city's budget and manage the interdepartmental aspects of clean up. This stakeholder recommends

meeting with city officials after Phase I environmental testing is complete to devise clean up strategies that conform to budgets and the site's planned uses, to which subsequent ARTFarm site plans must legally adhere.

2. Residents and artists cluster:

- **ARTFarm Instigator/Catalyst ***
- **City Arts Coordinator ***
- **Long-Time Brickbottom Resident**
- **Former Brickbottom Artist-Resident**
- **Ward Alderman**

This cluster's primary interest is in making the former industrial Brickbottom area more livable. This includes adding more open space and street lighting, safer pedestrian and public transit access to the neighborhood, better storm drainage, more economic opportunities for artists, preventing displacement of artists and local residents as Brickbottom develops, and maintaining Brickbottom's artistic "character." This cluster includes the **ARTFarm Instigator/Catalyst** artist who lives in Brickbottom, the **City Arts Coordinator** who is co-leading the ARTFarm planning process, the **Long-Time Brickbottom Resident** and **Former Brickbottom Artist-Resident** who have lived in Brickbottom during the artists' early development of the area, and the **Ward Alderman** who has represented the political interests of the Brickbottom neighborhood in Somerville's city government for the past 14 years. * Two of the

stakeholders (the **ARTFarm Instigator/Catalyst** and the **City Arts Coordinator**) have both ARTFarm site planning roles and city arts-based development roles, and are therefore listed in both this primary cluster and the secondary **arts-oriented development** cluster listed below.

3. Urban agriculture policy cluster:

- **Urban Agriculture Company CEO**
- **Local Urban Agriculture Start-Up Entrepreneur**
- **Former Urban Agriculture Non-Profit Director**
- **Urban Agriculture Non-Profit Executive Director**

This cluster's primary interest is in the details of how to plan for and implement urban agriculture projects on the ARTFarm site. Priorities include access to growing space, favorable land use policies, assistance generating a market for fresh produce within the City of Somerville's existing health programs, and access to infrastructure to farm and process produce on site at ARTFarm. The cluster includes Somerville's participating for-profit and non-profit urban agriculture organizations (**Urban Agriculture Company CEO** and **Urban Agriculture Non-Profit Executive Director**, respectively) and other stakeholders that would like to be collaborating partners (**Local Urban Agriculture Start-Up Entrepreneur**) or who have historically been successful at navigating Somerville's urban agriculture policy landscape and therefore provide

valuable historical background. (**Former Urban Agriculture Non-Profit Director**)

4. Economic management cluster:

- **City Economic Development Planner**

This cluster's primary interest is in moving the ARTFarm project toward completion and economic self-sufficiency as quickly as possible so that it can help catalyze further economic development in Brickbottom without burdening city coffers. Broader goals include attracting new development to Brickbottom, positioning Brickbottom as an appealing gateway to Somerville for visitors and businesses, attracting more private investment to Somerville, and monetizing the creative economy where possible. It consists of the **City Economic Development Planner** who is the city's point person for managing the ARTFarm project and helps push the ARTFarm project through the city's administrative systems.

Four Secondary Stakeholder Clusters

1. *Arts-oriented development cluster:*
    - **Former City Planning Department Employee**
    - **ARTFarm Instigator/Catalyst ***
    - **City Arts Coordinator ***

This cluster's core interest is keeping the "character" of Somerville alive. Stakeholders plan to accomplish this by expanding Somerville's felt sense of place through creative space design and programming, while using arts-based economic development to attract and retain a talented 'creative class' workforce and high-value property owners inside Somerville. They seek to replace conventional economic development with more 'creative' development options that involve mobilizing and supporting artists in Somerville to generate economic value equivalent to that of conventional development where possible. This cluster includes the **ARTFarm Instigator/Catalyst** * and **City Arts Coordinator**, * who are committed to arts-based development at the city scale, and the **Former City Planning Department Employee** who has remained involved in Somerville's city planning and arts development and advocates for including arts and cultural policy in Somerville's overall development strategy. * The two stakeholders in this cluster hold both city arts-based development roles and ARTFarm site planning roles, and are therefore listed in both this secondary cluster and the primary **residents and artists** cluster listed above.

2. Neighborhood community benefits cluster:

- **Community Corporation Program Officer**
- **City Arts Program Staff**

This cluster's main interest is ensuring that the benefits of future economic

development in Brickbottom are distributed to lower-income residents in a fair manner. This involves prioritizing community access to open space, local business development, local jobs creation, and a thorough community engagement process along the way. The **Community Corporation Program Officer** has extensive experience facilitating community engagement processes that are customized for Somerville residents and has worked on several rounds of community benefits agreements for Somerville's major development projects. The **City Arts Program Staff** is committed to arts-based development and also proposes a range of ideas for developing culinary entrepreneurship programs that showcase Somerville's cultural diversity and creates high-quality local jobs at ARTFarm.

3. Long-range planning cluster:

- **Pro-Bono Sustainability and Landscape Consultants**
- **City Transportation Planner**
- **Local Watershed Non-Profit Program Director**
- **Collaborating University Partner**
- **City Planning Department Long-Range Planning Director**

This cluster's primary interest is planning for long-term sustainable development in Somerville. This includes finding optimal long-term sustainable uses for public land and facilities, overseeing zoning changes, integrating multiple sets of city plans to achieve policy goals, and predicting which mix of

transportation and creative economy development strategies might work for Brickbottom over the next 10-15 years. Some stakeholders such as the **Pro-Bono Sustainability and Landscape Consultants**, the **Local Watershed Non-Profit Program Director**, and the **Collaborating University Partner** focus on environmental sustainability policy and action in Somerville and the surrounding Boston metropolitan area. Somerville's **City Planning Department Long-Range Planning Director** and **City Transportation Planner** also have a regional lens, but their primary focus is optimizing systems within Somerville and its connections to the rest of the region. The ARTFarm site draws the attention of these long-range stakeholders in part because it is a key lynchpin in of many present and future intersecting transportation lines, a hydrological accumulation zone for rainwater, and holds promise for more environmentally sustainable land use development approaches than other parts of Brickbottom given that it is a blank (albeit contaminated) site.

4. City economic development cluster:

- **Immediate Neighborhood Main Streets Executive Director**
- **Adjacent Main Streets Business Association Representative**
- **Adjacent Parcel Real Estate Developer**

This cluster's main interest is increasing businesses' return on investment in Somerville as a result of development measures. Within the cluster, these stakeholders differ in the kinds of businesses they serve. For example, the

Immediate Neighborhood Main Streets Executive Director has an interest in training existing small business owners to operate more effectively in a changing development context, and the **Adjacent Main Streets Business Association Representative** seeks to attract new businesses to Somerville that fit within the "character" of Somerville's creative economy. The **Adjacent Parcel Real Estate Developer** prioritizes building up his business in hopes of attracting more high-value businesses to Somerville such as research facilities, luxury housing, and more customers for his personal business.

As stakeholders within the primary and secondary cluster interests form pursue their interests, their efforts form development pressures that act simultaneously on the Brickbottom neighborhood and the ARTFarm site within it. These pressures create the context in which the ARTFarm plans formed and subsequently influence how they shift. After introducing the physical and social context of the Brickbottom area, I will discuss each pressure separately and explain how they interact later in this chapter.

3.3 The Brickbottom Neighborhood

The ARTFarm project plans exist within the Brickbottom neighborhood in Somerville's southeast corner. The Brickbottom neighborhood is a 65-acre area bounded by Washington St. to the north, McGrath Highway (Route 28) on the west, the Fitchburg commuter rail line on the south, and the Lowell commuter rail line on the east. The area is about 2 miles from downtown Boston.

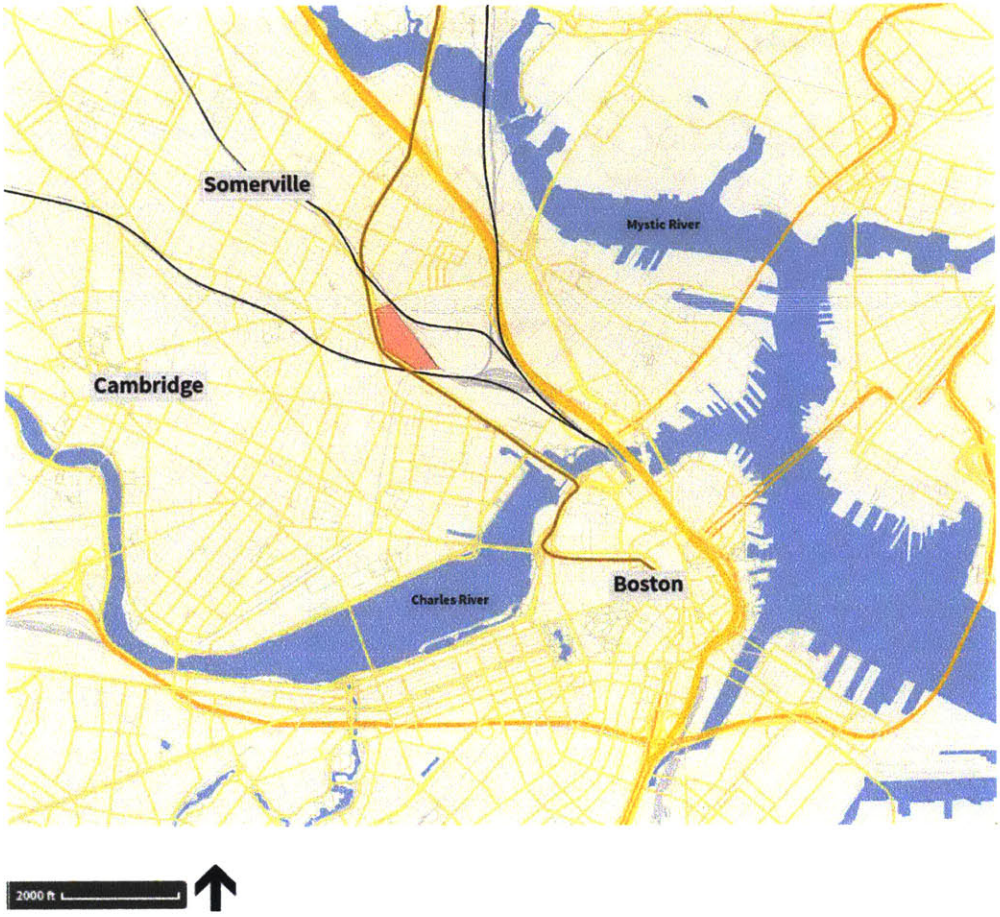

Figure 10 The Brickbottom Neighborhood is Wrapped in Railways and Highways

Source: Base maps from ACS 2010 (5-year estimates)

The Brickbottom neighborhood is wrapped in railway lines and highway routes taking commuters in and out of Boston to the northern suburbs and beyond. (See Figure 10) These regional transportation infrastructure projects act as barriers to Brickbottom and cause dissatisfaction and isolation for residents of the neighborhood, despite being quite close—as the crow flies—to Union Square, Kendall Square, and other more vibrant urban areas. (See Figure 11)

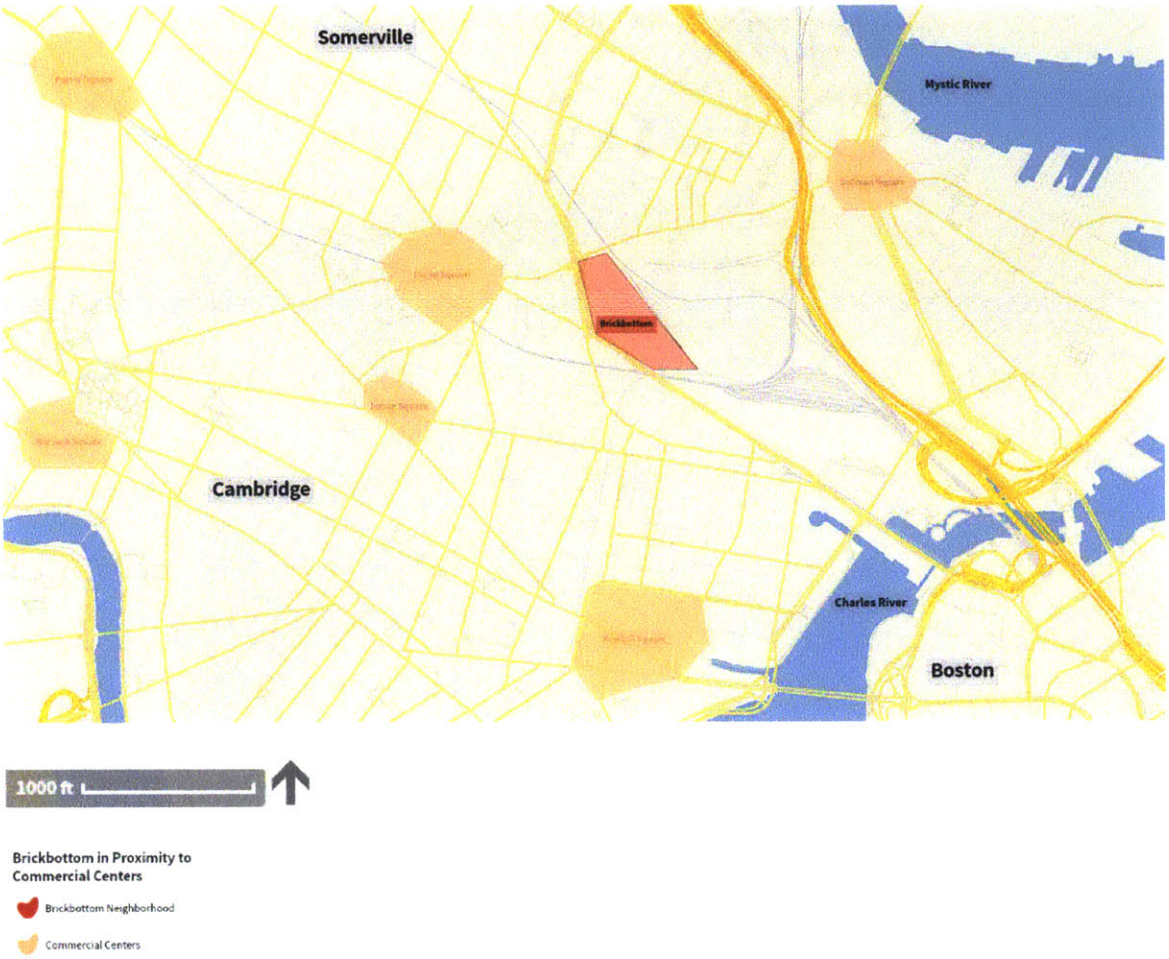

Figure 11 Brickbottom is Within 1 Mile from Downtown Boston and Close to Many Other Places in Somerville

Source: Base maps from ACS 2010 (5-year estimates)

Brickbottom has numerous environmental concerns including groundwater and soil contamination from former industrial uses as well as drainage and contamination problems related to the gradual filling of the historic Miller's River bed ending in 1876. (Anya Bokov, ed.) (See Figure 12 and Figure 13) The river was filled because it had become anoxic and polluted with effluent from nearby meat processing and rendering plants. In addition to environmental concerns about improper drainage associated with Somerville's early infill days, there are

also concerns about leachate contamination created when wastewater from the transfer station contacts solid waste.

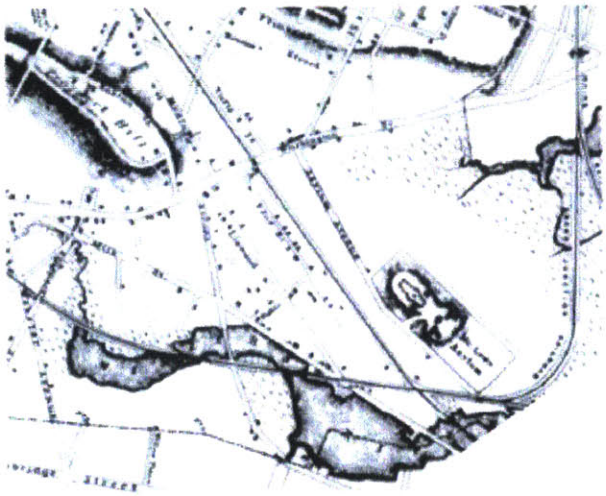

Figure 12 Miller's River Snakes Through Brickbottom to the Charles River in 1852

Source: ***Map of Somerville, Martin Draper 1852. Somerville Historical Society in Carole Zellie***

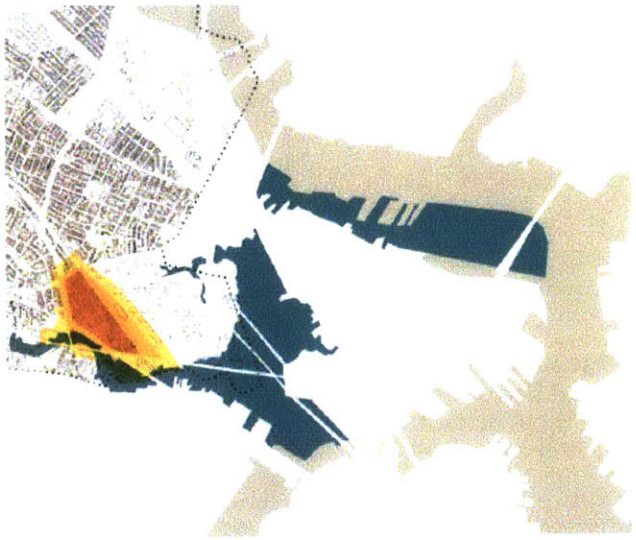

Figure 13 Historic Miller's River with Present-Day Brickbottom Overlay

Source: ***Edge as Center*** **Design Competition Publication, 2007**

Figure 14 The ARTFarm Site Touches the Edge of the McGrath-O'Brien Highway and the Planned (2017) MBTA Green Line Extension that Divides Brickbottom from the Inner Belt Industrial Park and Forks in Two Directions at the Brickbottom Artists Association

Source: Base maps ACS 2010 (5 year estimates)

Brickbottom's land uses are primarily industrial and automotive, with the exception of the Brickbottom Artists Association and the Joy Street Studios complex pictured above. (See Figure 14) The ARTFarm is the only city-owned full parcel in the 65 acres that make up Brickbottom.

3.4 History of Brickbottom

Environmental History

Brickbottom's environmental history is one of dredging for clay, forging of rail track, and billowing with industry. Brickmaking was a prominent Somerville industry up until the 1850s, when many of the city's brickyards were "abandoned and eventually surveyed for extensive tracts of streets and house lots." (Carole Zellie) The first brickyard tracts were immense in scale, with "hundreds of lots created across tracts still isolated from town services and improved roads." (Carole Zellie) These early brickyard tracts set the precedent for Brickbottom's present-day infrastructural disconnection from the rest of Somerville. Over time, streets were patterned over these marshy clay tracts and nearby brickyards, giving the neighborhood its name. (Carole Zellie) From 1855 until 1900, the Brickbottom area housed factory and railroad workers in low cottages, frame tenements, and row houses.

From the early 1900s until the 1950s, Brickbottom was the center Somerville's Greek immigrant community. [1] The Brickbottom neighborhood was razed in the 1950s in preparation for a proposed highway that was never built, but housing demolition continued during the construction of Interstate 93. [2]

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[1] The former grocery store at 78 Linwood, owned by Costas Karoyannis, functioned as a "checking-in" point for many newly arrived Greeks. Greek was the primary language spoken in the area for approximately 40 years. (Carole Zellie)

[2] A group of residents in Boston's West End, called "the West Enders" vehemently opposed Boston's urban redevelopment policies after their

("Trends in Somerville: Land Use Technical Report May 2011") Resident opposition eventually halted further highway construction and the area never became the successful industrial park that had been planned. (Tanya Chiranakhon, Jon Frank, Seh-Gyung Kang, Baixiu Liu, Antonio Medeiros, Kotch Voraakhom) For the next 50 years, the Brickbottom area would host automotive uses, plastics manufacturing, warehouses, and diesel truck parking.

Open Space and Urban Agriculture

Away from industrial Brickbottom, Somerville's dense population has been bursting at the seams for almost two centuries, crowding out open space and infilling with housing. To this day, Somerville has a relatively small amount of public open space and civil land uses, and a large amount of space dedicated to residential uses. Residential uses comprise 46% of all land in Somerville, with road rights-of-way at 25%, open space at a mere 6%, with 4% industrial, and 2% mixed-use. (See Figure 15) Somerville's high percentage (7%) of "civic" land area is deceiving because it includes roadway infrastructure. Schools, public buildings, institutions, and other public gathering places comprise only 3% of all land uses.

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neighborhood was destroyed under urban renewal policies in the 1950s and 1960s. Many of the West Enders "who were organizers actually moved to Somerville...[and used] their passion about not letting this happen again... at the forefront of the fight against the Urban Ring and Inner Belt." (Adjacent Main Streets Business Association Representative)

Figure 1-2: Somerville's Land Use[9]

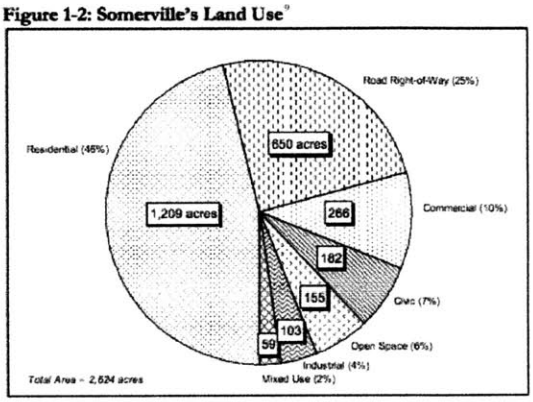

Figure 15 Somerville's Scarce Open Space

Source: 2009 Somerville Land Use in "Trends in Somerville: Land Use Technical Report May 2011."

To address this scarcity of public open space, the City of Somerville's most recent comprehensive plan, SomerVision, suggests engaging in "privately-funded open space creation," with the hope of providing more publicly funded open space as tax revenues from new commercial development increase. (City of Somerville, "SomerVision") In pursuit of this "privately-funded" open space strategy, Somerville requires developers to reserve 12.5% of their land for publicly accessible open space and aims to add 125 acres of open space to the city over the next 20 years. However, since the city's plans refrain placing binding targets on how much open space must be available in each neighborhood, Somerville's open space policies remain susceptible to piece-meal development patterns that are unlikely to yield the amount of open space residents and planners desire.

In addition to providing public access to nature, urban open space serves important environmental functions such as stormwater[3] retention, urban temperature regulation, and space for urban agriculture. Similar to open space for public enjoyment, these ecological attributes of high quality open space do not function optimally when arranged in the sort of piece-meal pattern created by volatilities in Somerville's hot real estate markets.

In spite of the challenges posed by piecemeal development, the City of Somerville has tried to enable urban agriculture in recent years. As of 2013, city policy includes urban agriculture abbreviated list of suggested improvements to the public realm and allows urban agriculture on municipal land and roofs by city ordinance. [4] SomerVision proposes that Somerville should "increase opportunities for urban agriculture" and "continue to explore opportunities to add community gardens while developing plans to rehabilitate existing or add new parks." (City of Somerville, "SomerVision") Though urban agriculture is supported by policy, these plans leave many of the complexities of for-profit, non-profit, and

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[3] The Brickbottom neighborhood falls within the Charles River Watershed. Runoff from this highly contaminated neighborhood flows into two Combined Sewer Overflows (CSO) that drain directly into the Charles River during heavy rains. Link: http://www.mwra.state.ma.us/cso/mainimages/04-2012-cso-map-1000.

[4] Though the main focus of several non-profits in Somerville for over the past 20 years, urban agriculture has only recently enjoyed citywide policy support through the Somerville Urban Agriculture Ordinance (2012) that defines the rules for farming within the city limits. The Ordinance states that sales of products shall be permitted between the hours of 9:00am and 6:00pm, May 1 – Oct. 31 of each year; Sales shall be permitted not more than three (3) days per week and not more than twenty-five (25) days per year; One farm stand is allowed per lot. (City of Somerville, "CITY OF SOMERVILLE ORDINANCE NO. 2012-06 IN THE BOARD OF ALDERMEN: August 16th, 2012") Varying levels of special permits are needed to sell the farm's produce, depending on the size of the farm.

community garden/volunteer garden space sharing and infrastructure needs unstipulated and unexplained.

Though piecemeal development has been eroding the human and environmental functionalities of open space in Somerville since its early days, with the support of city policy and clever planning, Brickbottom may be able to avoid some of these pitfalls and pursue more sustainable land use patterns in the future. Unlike the rest of Somerville, Brickbottom still retains a substantial amount of open space, particularly since its deindustrialization beginning in the 1950s. Much of the land contaminated from industrial uses, and therefore may require too much remediation to be financially viable for residential use, which is subject to the most stringent soil quality standards. However, urban agriculture in raised beds and public open space, while still requiring remediation, are relatively safe from contaminants if managed correctly. [5]

As in other urban areas, effective preservation of open space in Brickbottom for agriculture, stormwater management, and human enjoyment relies on planning with several goals in mind rather than pursuing a single strategy. This is primarily because in single-issue negotiations, open space will often loose in competition with conventional economic development. When it comes to open space, a multi-dimensional approach to sustainability will likely

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[5] Brickbottom's relationship with urban agriculture began at least 100 years ago. Nearby Cobble Hill was incrementally dismantled and used to fill the marshy areas around Brickbottom and other parts of Somerville. During World War I, the hill's rich topsoil provided space for 50 "Victory Gardens" planted *in situ* by railroad workers. (Carole Zellie) According to historian Carole Zellie, Cobble Hill was cut away in 1929 and completely cleared in the 1950s for an anticipated industrial park.

yield more favorable results for residents and the natural environment in which they live.

Arts-Oriented Development

As one of the last low-density areas left in Somerville, Brickbottom has been the subject of numerous policy experiments and new initiatives, including Somerville's most recent attempts to grow its creative economy.[6] In contrast to its vague targets for sustainable development and public open space in each neighborhood, SomerVision is very specific about housing and jobs creation. In 2013, the city set goal of adding 4,500 new jobs and 750 new units of housing to Brickbottom--only 15% of which would be affordable housing--in the next 20 years. (City of Somerville, "SomerVision") The City of Somerville has chosen meet this goal by developing Brickbottom's arts-oriented creative economy.

By choosing an arts-based development strategy for Brickbottom, Somerville policymakers built on a long-standing tradition of arts in the neighborhood. Long before the city's initiatives to develop the creative economy, artists from around the greater Boston area and the US have attempted to carve out a creative haven for themselves in rusty industrial Brickbottom. In 1988, a group of 85 artists established the Brickbottom Artist's Cooperative in an

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[6] Over the past 10 years, Brickbottom has been the subject of at least five urban planning efforts by a variety of firms. In chronological order, these plans include the Harvard Graduate School of Design Plan, (2005) *Edge as Center* Plan, (2006) SomerVision, (2012) Goody Clancy Plan, (2013) and the MIT – Department of Urban Studies and Planning Plan. (2014) Each of the plans reflects the state of Somerville's policy landscape at a particular time, and all plans were made with at least some cooperation from the City of Somerville.

abandoned industrial bakery in the southeast corner of the Brickbottom neighborhood. At the time of writing, the Brickbottom area is home to several creative and boutique manufacturing businesses as well as nearly 200 artists residing in what was formerly a live/work cooperative. ("Trends in Somerville: Land Use Technical Report May 2011") Other arts-based businesses have also moved into the area, such as Joy Street Studios that includes arts and crafts studios, furniture makers, and, formerly, an international bicycle manufacturer.

In developing its creative economy, the city provides specific recommendations to "ensure that Somerville has a mix of spaces for creative production, performance and exhibition, and that art is incorporated into the built environment." (City of Somerville, "SomerVision") SomerVision also recommends exploring incentives whereby private landowners can convert/sell/lease property to artists and self-employed creative businesses.[7] To support this transition to a

[7] The City of Somerville has been planning for arts-led growth in the Brickbottom area since at least 2006. In that year, when the city's Office of Strategic Planning and Community Development (OSPCD) held an urban design competition to solicit ideas for the future of the Brickbottom Area. The *Edge as Center: envisioning the post-industrial landscape* competition gathered 220 design submissions from international and domestic design firms. The competition frames Brickbottom as strategic location for economic development and emphasizes its potential as a neighborhood-level arts-oriented development project to attract the creative class to Somerville.

The competition report invited entrants to address several key challenges through their designs for Brickbottom including "determine how to leverage the public realm and deal with issues of ownership," form a coherent development strategy, address economic viability of the plan, and potential steps to the plan's implementation. (Anya Bokov, ed.) The themes of leveraging the public realm for increased neighborhood benefit and defining ownership and development strategy for economic viability are all central to the Brickbottom planning process and directly influence the design decisions and planning process at ARTFarm.

creative economy, the city proposed a zoning overhaul that allotted a small special zone for fabrication spaces in Brickbottom. [8] (Salmon pink in Figure 16)

Figure 16 The City of Somerville Proposes New Zoning Including Fabrication Districts in Brickbottom

Source: City of Somerville 2015 Proposed Official Zoning Map, Link: http://www.somervillema.gov/zoning/resources/proposed-official-zoning-map.pdf

This new fabrication district is intended to accommodate a range of building types and mix of uses that supports the local arts and creative economy. In particular, the proposed fabrication zoning category limits residential uses in the area in order to promote stability in the city's arts and creative economy. [9]

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[8] There continues to be no zoning for civic space in Brickbottom, though a stretch of Inner Belt appears to be zoned for civic use on the other side of the railroad from Brickbottom. (highlighted in dark green in Figure 16)

[9] The full draft policy of the Fabrication zoning includes the following goals: (City of Somerville, "Somerville Zoning Ordinance January 22nd, 2015 Board of Alderman Submittal")

- To create a district for both the production and consumption of goods and services from the arts and creative economy.

The zoning overhaul proposal is broadly designed to accommodate a variety of civic, institutional, commercial, creative industry, light industrial, craft manufacturing, and office uses and to encourage the development and retention of incubator spaces for start-up, entry-, and mid-level businesses and buildings that include multi-purpose performance and exhibit spaces in support of the arts and creative enterprises. (City of Somerville, "Somerville Zoning Ordinance January 22nd, 2015 Board of Alderman Submittal") Proximity of this newly zoned area to the ARTFarm site, as well as zoning language that favors the types of uses which the ARTFarm proposes, all potentially help build the case for more permanent uses for the arts in Brickbottom, if negotiated and managed effectively by the City of Somerville and its collaborating stakeholders.

- To preserve and enhance existing buildings that support activities common to the arts and creative economy.
- To limit residential uses in order to protect and preserve existing workspace, promote stability in the city's arts and creative economy, and provide employment opportunities in the arts & creative enterprises.
- To accommodate a variety of civic & institutional, commercial, creative industry, light industrial, craft manufacturing, and office uses.
- To encourage the development and retention of incubator spaces for start-up, entry-, and mid-level businesses and buildings that include multi-purpose performance and exhibit spaces in support of the arts and creative enterprises.

Transportation and Roads

The projected increase in Brickbottom's property values are due in large part to the planned arrival of several new MBTA Green Line subway stops to the area in the next 3-5 years. [10] (See Figure 17) The finalization of the Green Line Extension (GLX) project by the Massachusetts Department of Transportation (MassDOT) provided much of Somerville's planning impetus for thinking more specifically about economic development in Brickbottom. [11]

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[10] The Green Line Extension project will extend the MBTA Green Line's light rail service by 4.5 miles northwest through Somerville from the Lechmere station in East Cambridge along existing commuter rail rights-of-way. Because most of the existing rail line is below grade, no at-grade street crossings will need to be built. The first three stations, including the Washington Street Station in Brickbottom, located under the Washington Street bridge, are part of the first phase of the construction project, projected to be "completed and operational by early 2017." (Goody Clancy, Carol R. Johnson Associates, et. al)

[11] Lack of commercial real estate tax revenue constrains the City of Somerville to rely on state aid and collect high residential taxes. Residential tax rates and rising housing prices in Somerville have the city looking for ways to keep existing housing affordable and gain more commercial tax revenue. (Tanya Chiranakhon, Jon Frank, Seh-Gyung Kang, Baixiu Liu, Antonio Medeiros, Kotch Voraakhom) In the meantime, the city is relying on other economic development strategies such as attracting high-value businesses and research centers to the Brickbottom area while developing it as an arts-based urban destination with restaurants, galleries, and entertainment. Rezoning for 'mixed use' predicts that the city will earn tax revenue of $1.51 per square foot, second only to residential uses, which generate an average of $1.59 of revenue per square foot. ("Trends in Somerville: Land Use Technical Report May 2011")

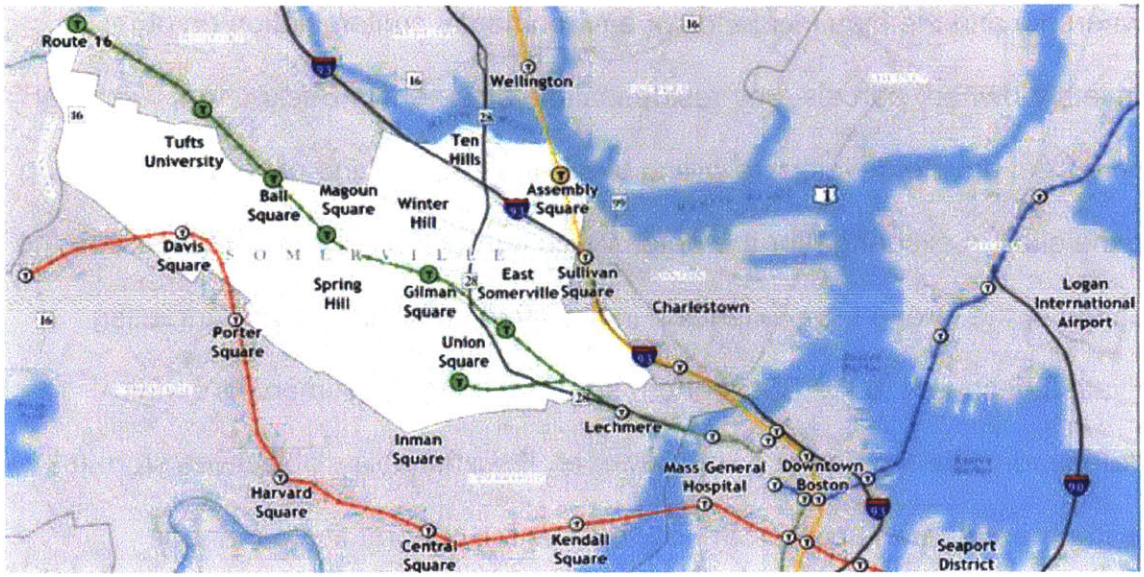

Figure 17 The Green Line Extension Plans To Extend to the Tip of Somerville Over the Next ~20 Years

Source: Goody Clancy, Carol R. Johnson Associates, et al. AI

Given Brickbottom's large quantity of contaminated land made valuable by the incoming Green Line, the city hopes to use arts-based development to catalyze private land sales in the neighborhood and increase its municipal tax base. High-end housing is one of the most effective ways for the City of Somerville to increase its tax base, as compared with the less than 10% of total assessed land value in Somerville that comes from commercial land.[12] However, because much of Brickbottom's land contains high levels of contamination, remediating to the standards legally required for residential uses may be prohibitively costly for the city.

In addition, the ARTFarm site is the only parcel in the whole 65-acre area that is directly controlled by the city. Given the small amount of land under city

[12] Massachusetts Department of Revenue, 2010 as cited in ("Trends in Somerville: Land Use Technical Report May 2011")

ownership and the high incidence of environmental contamination on other (privately-owned) parcels, any residential development in Brickbottom will likely come from private developers willing to take on the risk and expense of cleaning up the sites in exchange for the potential gain from the increase in value with the coming of the Green Line Extension in 5-10 years. Consequently, attracting private investment to the Brickbottom area is the City of Somerville's main strategy for cleaning up the area. However, if sustainability objectives stop at environmental clean up, then the city misses the opportunity to manage stormwater effectively, contribute to local food systems through urban agriculture, and preserve open space for the public to enjoy. Careful pursuit of multiple sustainability objectives simultaneously will help avoid piecemeal land development and help alleviate the risk of a zero-sum real estate game.

Economic Development Strategies

In 2013, the City of Somerville commissioned the well-known urban design firm Goody Clancy to draw up an economic development plan for Brickbottom. The firm's plan listed Brickbottom's major assets: a highly educated workforce in Somerville and surrounding areas, increased transit services coming soon enough to be a tangible benefit to prospective businesses, good driving access to I-93, proximity to Cambridge and Boston, large parcels, many parcels (5 to 10 million square feet of predicted building floor area), excellent fiber optic/internet capacity, and "established character in Brickbottom." (Goody Clancy, Carol R.

Johnson Associates, et. al) [13] Respecting Brickbottom's "established character" has led in part to the city's decision to use neighborhood-scale arts development in the neighborhood and has provided incentive for more environmental clean up.

Based on this industrial/brownfield redevelopment strategy, Goody Clancy recommends, "inviting investment through clear, predictable development approval standards that maximize value potential" in the area. [14] (Goody Clancy, Carol R. Johnson Associates, et. al) Investing in real estate, infrastructure, and building stock aims to "simultaneously build sustainable value in three key areas: the economy, social community, and the natural environment." (Goody Clancy, Carol R. Johnson Associates, et. al) Though the natural environment is listed as a source of sustainable value, the plans are not specific about how that value might be maintained or increased in areas with the highest "transformation" potential and potential real estate value.

The Goody Clancy plan mentions the demolition of the former waste transfer site (now ARTFarm) as "sending a clear signal to neighbors and potential investors that Brickbottom is ready for higher-value investment." (Goody Clancy, Carol R. Johnson Associates, et. al) The plan further explains its theory of land use development in Brickbottom:

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[13] The plan recommends leveraging these assets over the next 5 years by developing buildings up to 50,000-100,00 sf. [13] The plan predicts a full neighborhood build-out by 2035 and suggests several hypothetical approaches to project phasing. For example, the plan suggests improving roads using profits from housing redevelopments on the north side of Brickbottom, using mixed-use development and bond financing to fund public spaces and improved pedestrian access to the Green Line Station (together with the Community Path), and finally leveraging additional development to build other infrastructure like a public parking lot. (Goody Clancy, Carol R. Johnson Associates, et. al)

> "Attracting community activity serves as a catalyst for real estate development on nearby parcels. Over time, the park program on the site could change or be relocated to places that better serve community goals. For instance, as the potential development value of the prominent site grows over time, the site or portions thereof could be sold (or swapped with other private land) for redevelopment and the proceeds used to purchase other park land in the [Brickbottom area]." (Goody Clancy, Carol R. Johnson Associates, et. al)

Similar to the city's lack of specificity with which to integrate sustainability into the Brickbottom redevelopment plans, the Goody Clancy plan provides few if any concrete suggestions about how to integrate these public benefits into the strategic planning from the start of the ARTFarm project. Again it is clear that swapping and selling off land for civic spaces will result in piecemeal development with poor sustainability results if not negotiated as a package that can meet the interests of multiple stakeholders involved.

3.5 Pressures Shaping the ARTFarm Plans

As stakeholder clusters pursue their interests and mandates in Brickbottom, they create pressures on the ARTFarm development plans. The four main pressures are: pressure to remediate the brownfield site, pressure to maintain the site's 'character,' pressure to provide community benefits to the surrounding neighborhood, and pressure to derive returns from economic development catalyzed by city investment in the site. These pressures vary in

source, intensity, and strength of influence over planning process outcomes over time. With each pressure, stakeholder clusters can be exerting the pressure, (+) opposing the pressure, (-) or neutral with respect to that particular pressure. (N) These differences in pressure and charge create feedback loops discussed later in this research. (See Chapter 5) Careful consideration of these pressures and how they interact in on a physical site is essential for any city that seeks to simultaneously improve the environmental sustainability of its neighborhoods and develop its creative economy.

In this section, I describe the degree to which each of these pressures shapes the ARTFarm's project plans at each stage of the process. The ARTFarm project is in an ideal position to pursue an ambitious set of mutually reinforcing sustainable development goals. With its large parcel of city-owned land, strong city-level political support, and independent seed funding, the ARTFarm clears several hurdles that typically hinder sustainable development projects in hot real estate markets. With these hurdles cleared, the ARTFarm case illustrates the further complexities and fundamental challenges that cities face when implementing mutually reinforcing policies. Analyzing how this ideally positioned project responds to the four pressures of brownfield remediation, maintaining neighborhood 'character,' community benefits distribution, and economic development can help identify opportunities and challenges created for mutually reinforcing sustainable development outcomes.

Pressure A: Brownfield Remediation

(1-year cycles)

+ :

Environmental remediation cluster

Clean up the site to appropriate levels for short-term city use

City economic development cluster

Clean up the site to a level suitable for private sale—no more

N:

Urban agriculture policy cluster

Farming exclusively in raised beds—no contact with soil

- :

Site economic management cluster

Cap the site quickly as possible to 'activate' the site

This pressure exerts a relatively strong force on the City of Somerville due to the threat of legal consequences for inaction, though its drawn-out timescale decreases the urgency of its affects on the ARTFarm site. This pressure occurs on a timescale of approximately 1 year, which is the time allotted for the City to complete a given phase of environmental testing.

In order to shift the ARTFarm site from waste processing to sustainable development programming, the City of Somerville is facing pressure to clean up the site. The city must abide by the Massachusetts Department of Environmental Protection's (MassDEP) regulatory framework for waste site remediation, which is the responsibility of the environmental remediation cluster. The urban agriculture policy cluster plans to farm on the site using exclusively lined raised beds with no contact with the soil or groundwater. However, if the results of the

Phase 1 environmental testing reveal a contamination profile too extensive and complex for the city budget to manage, the city may loose valuable time in applying for external remediation funding and risk missing the opportunity to sell off the land for private development. Thus, the city economic development cluster sees the ARTFarm site as a part of the city's overall plan for redevelopment and wants to clean up the site to a level suitable for private sale—but no more than that.

There is pressure on the city to delay full-scale remediation until the land can be sold off for private development. The city hopes that once Brickbottom's real estate market heats up, private developers buy the contaminated land and will invest in clean up based on the high potential value of the land once remediated. To start this process, the site economic management cluster wants to engage in at least some remediation and development in order to attract higher value private development to the area. However, though land values are anticipated to rise with the incoming Green Line, private development has yet to flock to Brickbottom. In the ARTFarm planning process thus far, the burden of remediation decision-making—and funding—still rests with the City of Somerville.

A Brief Environmental History of the ARTFarm Site

Until late 2013, the ARTFarm site was a waste transfer station used to transfer municipal waste from Somerville, Cambridge, and Boston. The site has a high-end automotive dealership to the north, NSTAR utility maintenance facilities to the east, industrial warehouses to the south, and McGrath Highway to the

west.[15] The site became a waste processing facility when the city built the Somerville Municipal Incinerator in 1907. (Carole Zellie) From the 1950s – 1970s, the site hosted Somerville's waste incineration plant. After the passage of the 1963 Federal Clean Air Act, the incinerator was taken offline and Somerville scaled up its waste transfer operations. [16] Before the 1970s, the air in Brickbottom was dusted with incinerator ash that contains heavy metals such as arsenic, lead, chromium, polycyclic aromatic hydrocarbons, (PHAs) dioxin, and other chemicals. While the incinerator is no longer active, typical leachate components from the solid waste processed on site for 50 years is likely still present on the site in the groundwater and soil. [17] (Tanya Chiranakhon, Jon Frank, Seh-Gyung Kang, Baixiu Liu, Antonio Medeiros, Kotch Voraakhom)

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[15] In the 1870s, immigrant row housing and the Jackson School (later re-named the Clark Bennett Grade School) stood on the site. (Tanya Chiranakhon, Jon Frank, Seh-Gyung Kang, Baixiu Liu, Antonio Medeiros, Kotch Voraakhom) The school was on the site until at least the 1920s.

[16] Though the site did not handle recycling or toxic waste, city records show occasional violation reports of biohazard materials and household appliances being delivered to the site. (Tanya Chiranakhon, Jon Frank, Seh-Gyung Kang, Baixiu Liu, Antonio Medeiros, Kotch Voraakhom) The documented history of these violations and adjacent industrial uses increases the likelihood of detecting complex contaminants on the site.

[17] Somerville generates about "350-370 tons of residential trash per week." (City Environmental Coordinator) [17] Despite resistance from the Brickbottom neighborhood, the City of Somerville entered into a contract with a private waste hauling firm, Waste Management, Inc., (C#98-033) from February 3, 1995 through 2016. (Tanya Chiranakhon, Jon Frank, Seh-Gyung Kang, Baixiu Liu, Antonio Medeiros, Kotch Voraakhom) The city collected royalties of $1 / ton of waste processed onsite, with an agreement for processing up to 1250 tons of waste per day. Waste Management, Inc. paid Somerville these "tipping fees" in exchange for being allowed to operate within the city limits. Somerville also paid substantially less per ton of waste collected due to the reduced hauling costs of locating the site inside Somerville.[17] According to the study done by Harvard Graduate School of Design urban planning students in 2005, the transfer station produced approximately $1.5 million of annual revenue for Somerville.

Roughly 85% of all sewer and stormwater drainage in Somerville makes its way to the Inner Belt Brickbottom area.[18] (Goody Clancy, Carol R. Johnson Associates, et. al) The site's topographical orientation and proximity to the (now filled in) Miller River makes it one of the lowest points in the Brickbottom neighborhood, thereby increasing the likelihood that contamination from adjacent sites may have flowed into the site and accumulated over time. Given the number and duration of neighboring auto uses, the site may contain PCBs, which are extremely toxic. Thus, it is possible that this site is "an accumulator of neighborhood hazards." (Tanya Chiranakhon, Jon Frank, Seh-Gyung Kang, Baixiu Liu, Antonio Medeiros, Kotch Voraakhom)

The city filed an official release log on June 2nd, 2014 reporting to the Massachusetts Department of Environmental Protection (MassDEP) of suspected release of hazardous materials to soil or groundwater exceeding reportable concentrations (accepted environmental quality standards) and of the release of oil to soil exceeding reportable concentrations. The type of release (spill, test failure, overfill, etc.) and the receptors impacted (school, basement, indoor air, soil) were both marked 'unknown.' Upon preliminary borehole testing, the city identified the four most prevalent contaminants that exceed reportable (allowable) concentration. These contaminants are lead, acenaphthylene,

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In terms of waste flow and operations, the decommissioning of the transfer site in 2013 was "was not too much of a problem," (City Environmental Coordinator) though it is unclear whether and how the city was able to recover this loss in revenues. [17] Somerville's waste is now mostly shipped to and Saugus, MA, to another site with a waste management facility and incinerator.

[18] Central and western Somerville's storm and sewer flows run through Municipal Water Resources Authority (MWRA) pipes from Poplar St. in Brickbottom to Sullivan Square, northeast of Inner Belt.

benzo(a)anthracene, and benzopyrene, all components of automobile fuel. According to MassDEP's Notice of Responsibility letter to the City of Somerville in June, 2014, liability for failure to adequately address the release of oil or hazardous waste on the ARTFarm site is "based solely on [the city's] status as an owner." [19] In the case of the ARTFarm site, the city has until June 2nd, 2015 to make substantial headway on planning the Phase 1 environmental testing and subsequent cleanup.

[19] State policy requires "responsible parties to take necessary response actions at properties where is or has been a threat of release of oil and/or hazardous material." (Ida Babroudi, Environmental Engineer, Bureau of Waste Site Cleanup) The city is legally obligated to engage a Licensed Site Professional (LSP) to supervise and manage response actions until "all substantial hazards presented by the site have been eliminated and a level of No Significant Risk" has been achieved in compliance with Massachusetts state law.

Pressure B: Maintain Brickbottom 'Character'

(3-month cycles)

+ :

Resident artists cluster

Artists' work-show space, open space, contact with the public

Neighborhood community benefits cluster

Accessible community engagement process, direct benefits for surrounding neighborhood

N:

Arts-oriented development cluster

New arts-focused projects that may affect the surrounding arts community

Long-range city planning cluster

Long-term site uses that are most advantageous for the city

- :

City economic development cluster

Optimizing for maximum return on investment in land use development

This pressure is the oldest in the system, because its advocates have been living several blocks away from the ARTFarm site for the past 30 years, and who feel confident in their ability to describe and advocated for Brickbottom's 'character' or 'flavor' of the neighborhood. This pressure occurs on the timescale of the residents' attention to the ARTFarm development plans, which seem to happen every three months, or whenever there is a public communication about the ARTFarm via its website or word-of-mouth within the community. At the times of strongest exertion, this pressure can be very vocal about its interests and have

direct consequences for the design proposals for ARTFarm. However, this pressure to maintain Brickbottom's 'character' fluctuates with the stakeholders' fluctuating attention to the project, with the exception of the two stakeholders actually leading the ARTFarm project.

The ARTFarm is currently a blank site with approximately $1 million in funding from state government sources and foundation grants to enact a vision that integrates sustainable development goals into a clean, creative, and green space for all to enjoy. [1] The resident artists cluster have been in the area for a long time and want to maintain its 'funkiness' in the face of more conventional development patterns. A long-time Somerville resident recalls, "Historically, that particular triangle of land in Brickbottom has been the place where we put stuff we don't want to deal with: tenements, trash, poverty, crime... The **Artists Association** was the initial twinkle that maybe something could be different there." (Adjacent Main Streets Business Association Representative) There is a sense that Brickbottom's industrial artistic "character" has been hard won through a long resistance to big development and forbearance in the face of polluting industries, including the former waste transfer site. A former Brickbottom artists-resident recalls,

"We hated that [former waste transfer] site...and tried to get the city not to extend the lease of the plant, but we failed. Brickbottom was a wreck, filthy. The air was disgusting...we'd call the car turn-around under McGrath "scary alley." If you walked there you started coughing, your eyes were tearing, your face was dirty...that was the only way to get to Union Square. We cut a hole in the railroad fence in order to get to the supermarket." (Former Brickbottom Artists-Resident)

The resident artists cluster is the most vocally in support of interventions such as artists' work-show space, gallery areas, performance space, and public

art installations. For this cluster, these uses would have ARTFarm maintain continuity and expansion of cultural and artistic perspectives that they identify as part of Brickbottom's character. (Long-Time Brickbottom Resident) Another long-time Brickbottom resident explains that development should proceed while maintaining the neighborhood's character " not at the exclusion of other commercial interests, but at a minimum not at odds and not encroaching on the artistic flavor of the area..." (Long-Time Brickbottom Resident) This artistic flavor—for local residents—involves avoiding displacement of local artists that have been in the area for 30 years.

The neighborhood community benefits cluster is primarily interested in leading the ARTFarm community engagement process in a way that is fair and accessible to the residents in adjacent neighborhoods who are underserved and could potentially benefit from the site's development. This includes maintaining the character of the neighborhood by maintaining its cultural and economic diversity that would likely be eroded or displaced through gentrification in the absence of a robust community engagement process.

The arts-oriented development cluster sees the site as a possible place to develop, but is more concerned with the development of Somerville's creative economy as a whole. In support of that vision, the ARTFarm project has sought to ensure that a multi-purpose performance space is developed within Somerville, provide at least one outdoor municipal public space that is designed as dual use for live performance, and provide low-cost indoor and outdoor spaces for artists to display and sell their work. (City of Somerville, "SomerVision") However, the mechanisms to facilitate that conversion, lease, or

sale were not spelled out in the plan, leaving room in the ARTFarm development process both for experimentation and for ambiguity as to how policy makers and artists should proceed. Thus, the arts-oriented development cluster has invested a smaller amount of political capital in the ARTFarm, which is—for now—just a short-term project. Thus, they remain relatively neutral in terms of pressures on the ARTFarm site.

The city economic development cluster prefers to maximize return on investment for development either by rapid transition to high-value uses or buying up the city-owned site and continuing to operate business as usual within its current industrial uses. The former waste transfer site is currently zoned for industrial use, including light manufacturing, automobile uses, warehouses, and limited retail. Zoning changes proposed through the City's 2015 zoning overhaul [20] include rezoning the site and surrounding parcels for commercial uses. (BB-SD zoning) To the southwest of the site, anticipating the grounding of McGrath Highway, the zoning overhaul proposes that parcels across the viaduct from the site be zoned for between 5 and 10 story mixed used buildings.

This cluster is willing to invest private money into the Brickbottom area without necessarily cleaning up the contamination. It would be happy to turn the ARTFarm into high-end automotive or luxury housing uses, which is in direct conflict with maintaining Brickbottom's artsy diverse 'character.'

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[20] Somerville is currently undergoing an overhaul of its zoning code. At the time of writing, the City was operating under its zoning code originally proposed in 1990 and last amended in 2013. The 2015 zoning overhaul has closed for public comment, and is now being considered in each of Somerville's Wards before going to the Board of Alderman for potential ratification. The current official zoning code map is publicly viewable at: (City of Somerville, "Somerville Zoning Ordinance January 22nd, 2015 Board of Alderman Submittal").

Pressure C: Provide Community Benefits
(1-7 year cycles)

+ :

Neighborhood community benefits cluster

Robust community engagement process with surrounding neighborhood

Urban agriculture policy cluster

Provide access to fresh local food in Somerville

N:

Resident artists cluster

Artists' work-show space, open space, contact with the public

- :

City economic development cluster

Optimizing for maximum return on investment in land use development

This pressure exerts pressure on the ARTFarm site at roughly the same timescale as the economic development as the economic development pressures, but with a buffer of several months on either side for community organizing, meetings, and drafting of community benefits agreements as a result of those meetings. In terms of project plans, this pressure has been following the project for 1 year, but can range up to 7 years, which is the length of a typical real estate cycle in Somerville. (Adjacent Parcel Real Estate Developer)

In the case of the ARTFarm project, this pressure has a certain precedent set in Somerville for community engagement, but because there have been no building designs actually proposed, there is little for the community benefits

pressure to negotiate with. This pressure has been participating in the site planning since the beginning, but punctuated in much the same way as the pressure to maintain Brickbottom's character. These two pressures are possible allies in the system at times, particularly when facing the economic development pressures described in the next section.

Providing community benefits from the ARTFarm include both sharing the long-term economic benefits from the development it aims to spark in Brickbottom through local business and jobs creation, but also through sharing access to the benefits provided by the ARTFarm project itself. For the urban agriculture policy cluster, this includes developing site plans and business models that allow ample space for urban agriculture and link the fresh food production at ARTFarm with city procurement programs and the nearby restaurants and farmers markets.

For the neighborhood community benefits cluster, community benefits on-site include a culinary entrepreneurship program, growing space for residents from surrounding neighborhoods, low-rent office space for non-profits, and an accessible community engagement process to decide on design and programming decisions for ARTFarm.

The resident artists cluster is focused more on deriving benefits for the artists and immediate neighbors to the site, rather than the community farther afield on the other side of the highway. Perhaps there will be more alignment between the interests of the resident artists cluster and the neighborhood community benefits cluster with future improved pedestrian access between the neighborhoods. However, for the time being, the resident artists cluster remains

fairly neutral when it comes to the pressures of community benefits provision on the site.

Lastly, the city economic development cluster puts pressure on the site to develop according to more conventional economic development patters that consider community benefits as an neither a explicit—nor necessary—part of the development process.

Pressure D: Economic Development
(1-7 year cycles)

+ :

City economic development cluster

Optimizing for maximum return on investment in land use

Site economic management cluster

Cap the site quickly as possible to 'activate' the site

N:

Environmental remediation cluster

Clean up the site to appropriate levels for short-term city use

Long-range city planning cluster

Long-term site uses that are most advantageous for the city

Urban agriculture policy cluster

Provide access to fresh local food in Somerville

- :

Neighborhood community benefits cluster

Robust community engagement process with surrounding neighborhood

Resident artists cluster

Artists' work-show space, open space, contact with the public

The stakeholder clusters most aligned with this pressure prioritize capitalizing on the economic potential of the ARTFarm site for commercial development uses as quickly as possible. This pressure is the strongest pressure in the system and provides the ignition for the city's interest in the project. It exerts force on the ARTFarm project on a 1-7 year timescale, from short-term 'activation' projects to private development, respectively. One stakeholder in the city economic development cluster has been offering to buy the ARTFarm parcel and convert it into luxury automotive use for the past decade. (Adjacent Parcel Real Estate Developer) The City of Somerville does not want to sell the land to the adjacent real estate developer because it wants to come up with a more sustainable use for the site over the longer-term. In terms of making the site immediately useable, the site economic management cluster's main interest in making the site usable as soon as possible, which would entail capping it with a simple concrete slab.

The stakeholders who are neutral about developing the ARTFarm according to maximizing its uses for economic development remain so because in the short term, any development plan on the ARTFarm site is more economically sustainable—though not environmentally or socially sustainable—than the site's current condition as a vacant lot. The urban agriculture cluster would be happy to build business models that contribute to economic development on the ARTFarm by using the space for urban agriculture. However, they remain neutral and detached to a certain extent because these farms would need the proper infrastructure, (lighting, water, electricity, storage,

truck access) which they may not be able to get given the hasty nature of the cap design.

The long-range city planning cluster is also watching to see how the site design develops before proposing uses and longer-term zoning changes to go around it. This cluster has done analysis on the area from the perspective of using it for other types of infrastructure and has determined that short-term activation would be beneficial for the site, as the city doesn't have an immediate use for it. Some other members inside the cluster are engaged in long-range sustainability planning for Somerville including watershed stewardship and have an interest in how the site fits in with these larger plans. However, because the plans are currently in flux with many ideas populating the blank space without a coherent programming structure, these sustainability-oriented stakeholders can only watch and see where they might be able to propose design solutions farther along in the project, when it will likely be too late to implement them. Thus, they remain relatively detached from the design process.

The neighborhood community benefits cluster and the resident artists cluster are both wary of this pressure. If it exerts is influence too strongly at the expense of the other pressures in the system, this pressure's dominance on the ARTFarm site could spark conventional economic development that risks eroding the artistic 'character' of the Brickbottom neighborhood and displacement instead of community benefits for the surrounding adjacent community in historically underserved East Somerville community.

3.6 ARTFarm Planning Process

In 2013, the City of Somerville ended the lease with the waste management company and took possession of the parcel. Somerville's Mayor, Joseph Curtatone, charged the director of the City Arts Organization and a prominent member of the Brickbottom Artists Association with the mission of 'activating' the now-vacant parcel of land in anticipation of future transportation-centric development in the Brickbottom area of East Somerville. "Activating the space" has since expanded into a longer-term vision for a civic space that includes key elements that city stakeholders hope will shape how the Brick Bottom area develops over the next 10 -15 years and beyond. Ideas for these elements include: artists' space (workshop-gallery), non-profit offices, community garden space, for-profit urban agricultural space, small-scale innovation districts, public walking paths, and other elements.

In the early stages of organizing, a non-profit regional sustainability consultancy with strong ties to a nearby university was already working on plans for different sites around the Boston area in order to link sustainability development patterns and policies. (Pro-Bono Sustainability and Landscape Consultants) In order to both fulfill the 'activation' mandate and create a long-term space, various types of technical and community-based expertise has already been engaged. The non-profit regional sustainability consultancy and the individuals charged with "activating" the site began working on preliminary plans, and a held design charette with members of the arts community in late 2013. This joint team submitted an application to ARTPlace America, which awarded

the project $415,000 to fulfill the proposed vision of the project site, a vision now known as 'ArtFarm.' This funding, combined with the amount of city investment in the site since it's take over of the site lease from Waste Management in 2013, amounted to over $600,000 of combined in financial resources earmarked for or invested in the site. At the time, as well as at the time of writing, the city-level environmental department was working on assessing the level of contamination likely extant in the site.

Once they were successful in the ArtPlace American granting procedure, a team of policy entrepreneurs began moving forward on different phases of the project. This steering committee has a very fluid membership, with no formal process for becoming a member. The steering committee has so far collaborated for the purpose of grant-writing, early-stage project development, and establishing guiding principles for the project. The steering committee consists of several **sub-committees on Arts/Culture, Sustainability, Communications, and Community Learning.**[21] These focus areas each meet as their own working group and brainstorm guiding principles for their key areas. In January, 2015, they City of Somerville won another infrastructure grant from the State of Massachusetts totaling **approximately $1 million.**

1. Activation Mandate

Early in the project, when the incinerator was demolished, the Mayor charged both the **City Arts Administration** and the Residential Artists

Association with generating ideas and plans for what to do next with the site. These two groups seemed to have taken several attempts to begin to collaborate. "It took a while to coalesce all of these people who were told to transform this space." (City Arts Administrator) According to the **City Arts Administrator**, "The Mayor chose us because we know how to activate a space and get stuff done pretty quickly, typically without a lot of money. We proposed another project for ArtPlace America grant 3-4 years ago for the Kylie barrel site [but they didn't get the grant so it didn't go anywhere]... also there were issues with the Green Line coming in." (City Arts Administrator)

2. Winter 2013 Design Charettes

The **Catalyst/Instigator** invited the co-creators of a shipping-container-based commercial development in Brooklyn, NY to attend the design charette.[22] During the charette, organizers presented participants with large blank maps and historical site plans. The **Community Corporation** said "We had people throw it down: what would you like to see here? That was a good opportunity for people to express to be creative and to think very freely about this space." (Community Corporation Program Officer) "For us it was really important to have residents from East Somerville, Union Square, and Brickbottom get together to collaborate, learn from each other, and share [with] one another." The workshop was supposed to be a "way to triangulate communities, which was exciting. Artists

[22] Urban Spaces LLC played a key role in developing the designs for the DeKalb Market build-out. As of 2015, DeKalb Market is no longer in existence. http://dekalbmarket.com/about/

working with immigrants, immigrants working with designers, and that was really exciting and still is." (Community Corporation Program Officer) "[The **Catalyst/Instigator**] wanted us to play a particular role in putting together a community charette of sorts for the site... just kind of big visioning for the direct stakeholders which was the **Artists Community** at that point." (Community Corporation Program Officer)

For the design workshop, the **Community Corporation** reached out to the **Urban Agriculture Non-Profit**, the residents at the **Artists Community,** invited a real estate officer at the **Community Corporation**, and some organizations involved in sustainability that had done "place-making, not just workshops but actual structures or temporary places in their cities that got the community involved." (Community Corporation Program Officer) The **Community Corporation** also invited another **Community Corporation** who had done a recent successful development in Boston to present as well.[23] In organizing the process, the **Community Corporation** "wanted to make sure that there was a strong local context and make sure that local people had a chance to put their ideas on paper." (Community Corporation Program Officer)The process also included having participants generate ideas for the site on post-it notes in a manner "kind of like crowdsourcing because people generate ideas and then people vote on them." (Community Corporation Program Officer) The **Sustainability and Landscape Consultancy** got involved early in documenting the charettes and working on potential design mock-ups, and the **Community**

[23] Nuestra Comunidad Community Corporation was in attendance and shared about their work in Bartlett Place, in the Dorchester neighborhood of Boston. (http://www.nuestracdc.org/properties/60-bartlett-place)

Corporation ran the public engagement process as best they could, but there was a sense at least from the **City Arts Administrator** that more community engagement processes need to be held

3. Steering Committee Crafts ArtPlace Grant

The **Community Corporation Program Officer** describes the project as being led by a sort of steering committee that included the "**Consultancy, City Planner, Sustainability Professor,** 2-3 residents from the **Arts Association**, the director of the **City Arts Organization** and 1 or 2 people who the **Catalyst/Instigator** knows pretty well who are more connected to efforts in East Somerville, such as the **Urban Agriculture Non-Profit, Urban Agriculture Company"** For the **Community Corporation's** part in the project, "I think what [the **Catalyst/Instigator**] was trying to do was also focusing on affordable housing, community process, green space, the arts, in one room to think about the space." (Community Corporation Program Officer) "It's very exciting to have a leader in our group as well. [The **Catalyst/Instigator**] is such a great leader of the community and someone who is associated with our organization carry out this grand vision that is now laying down roots." (Community Corporation Program Officer) The **Community Corporation** collaborated with the **Catalyst/Instigator** on the final draft of the ArtPlace grant where they inserted culinary entrepreneurship program for immigrants (modeled after previous programs in Somerville) into the funding scheme. (See Figure 18 and Figure 19)

Figure 18 The Original ARTFarm Proposal Blend Programming and Physical Structures on 2.2 Acres in Brickbottom

Source: ArtPlace America Grant Proposal, Earthos Institute, January 2014

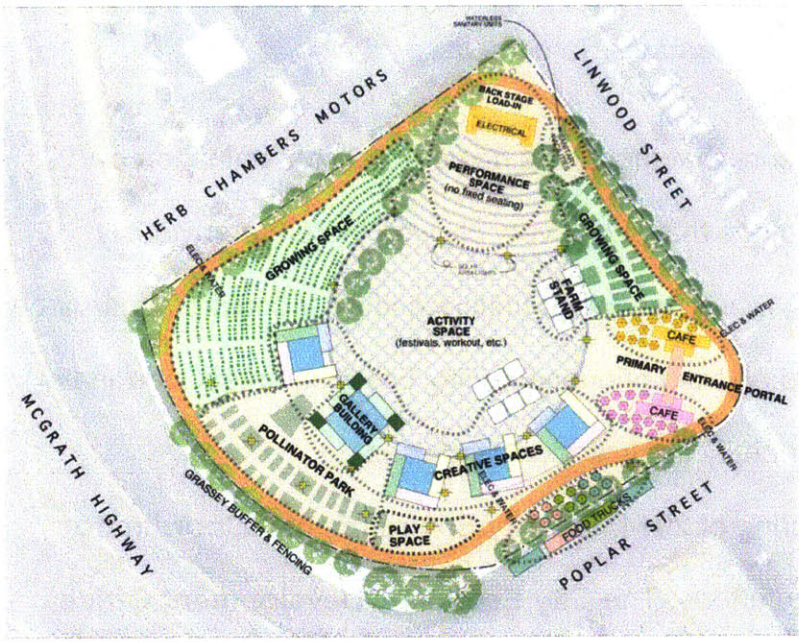

Figure 19 Allocating Space for Uses is Key in the Original ARTFarm Proposal

Source: ArtPlace America Grant Proposal, Earthos Institute, January 2014

4. First Activations

The City's short-term goal is to "activate the space and let the community know that ARTFarm is coming through ephemeral programming" such as the TinyHouse Festival and project MUM in Fall, 2014. (City Arts Program Staff)

Other temporary 'activation' strategies include using the MUSCRAT (Multi-Use Somerville Community Roving Art Transportation) School Bus vehicle that is designed to bring art and culture to under-served areas of Somerville to do pop-up arts workshops on the site. **The City Arts Program** has been very interested in using shipping containers to activate... as a sort of "zeitgeist." (City Arts Program Staff) The programming on the site was limited exclusively to ephemeral programming lasting no more than one day.

5. Environmental Clean Up Mandate Ramps Up

"We want to make sure that there was no potential contamination by Waste Management... you see that site is very old...so there are obviously anticipated contamin[ants] ... we needed to understand what could potentially be from them" and what could be from prior uses. (City Environmental Coordinator) Part of the clean up is to identify the historical land uses.

Beginning in the spring of 2014, the **City Environmental Coordinator** began working on clean up efforts. The **City Economic Development Office** and the **City Arts Organization** were "planning to have development which can be some public involvement for some activities and other things... so there is going to be a beautiful development eventually, but before doing [that

development] it's mandatory being owner of that site, to make sure that it is good for any public utility... So I got involved [in verifying the clean up status of the site]." (City Environmental Coordinator) In Fall of 2014, the **City Environmental Coordinator** stated, "We've been in limbo for a long time... [the Consultancy] applied for a grant and was awarded...(and in the meantime) we tried to move forward but the study did find certain elements (in the testing)." The City is weighing the risks and benefits of environmental testing on the site. As the City Economic Development Planner explains, "the deeper (into the soil the testing goes), the faster you might be (digging) into other things."

"Although the ideas are proposed, it's fantastic, we're ready to move with community collaboration, because the community is involved, it also requires us to do Phase 1 environmental study." (City Economic Development Planner) As per Massachusetts Contingency Planning (MCP)("310 CMR 40.0000") protocol, the City contracted with a licensed environmental assessment company, Environmental Compliance Services (ECS) Inc. for the initial testing. Results from the testing include that "there are contamination issues, but they are non-threatening...it is not as bad as we were afraid of." (City Environmental Coordinator) After having notified the Massachusetts Department of Environmental Protection of the testing results, the City has 1 year to come up with a Phase 1 report. "Maybe we have to remove some soil. Maybe we have to do some onsite remediation. There is no groundwater contamination." (City Environmental Coordinator) The City Environmental Department has "conducted quick browsing testing so far." The City is now required to do another round of testing for pollution in terms of how it is localized within the site. "We are

economizing what is required and making sure that it is going to be safe." (City Environmental Coordinator)

In early September 2014, the Board of Aldermen approved funding to hire a Licensed Site Professional to examine the site. The funds have been allocated from the waste stabilization fund. "Right now (the scope of the funding) is kind of broad. It's for any type of environmental mitigation for the site... (since) the site is not planned for intensive use, it's still in discussion but we don't know whether we are going to go forward with further studies. It depends on what we find in Phase 1." (City Economic Development Planner) The project is "above ground, to we are not looking at a lot of types of remediation services." (City Economic Development Planner) During Phase 1 testing, the **City Economic Development Planner** explains, "They'll go in and do fencing, utilities, and clean up the site for the type of use that they want. We haven't gone too deeply into what we are going to do. [The first step] is making sure that funding is secured. [The second step is] what exactly is going to go on the site, how much can the site handle, who are the other stakeholders involved and how quickly they can move." (City Economic Development Planner) At the time of writing, Phase 1 testing has still not begun.

6. Continued Activation

Based on successful grant applications and a fair amount of marketing, In January, 2015, they City of Somerville won another infrastructure grant from the

State of Massachusetts totaling approximately $1 million. Eight years before Mayor Curtatone asked artists to 'activate' the site that generated the ARTFarm plans, the Goody Clancy plan for Brickbottom (2006) was already proposing arts-based uses for the waste transfer site. The plan recommended "designing and installing a temporary, pedestrian-oriented use at the former Waste Transfer Facility site" with input from the city, local artists, business and property owners and residents. (Goody Clancy, Carol R. Johnson Associates, et. al) This sort of neighborhood-scale arts development strategy resurfaced again eight years later in the MIT – DUSP Plan of 2014. A graduate student practicum at MIT's Department of Urban Studies and Planning (DUSP) proposed plans for the former waste transfer site that included a market, growing space, public art installations, and flexible loading space and display space across Poplar St. to the south, adjacent to the site. [24] (See Figure 20 and Figure 21)

[24] The plan's proposal for Brickbottom as a whole focused on urban design and streetscape improvements, green stormwater infrastructure and public open space, and increased multimodal transportation connectivity between Brickbottom and the surrounding areas. They propose converting unused McGrath Highway right-of-way into public park space when the highway is converted into a boulevard. The plan also proposes the creation of a Brickbottom special district that allows for fabrication uses. The City may have used this proposal to help outline the Fabrication zoning requirements it proposed in its 2015 zoning overhaul. (See Figure 16)

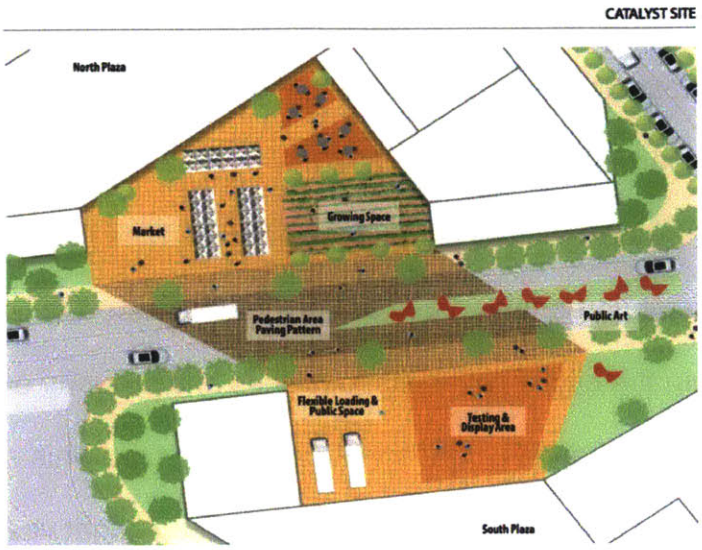

Figure 20 The MIT DUSP Practicum Proposes to Make the ARTFarm Site a Cultural Corridor that Bridges Poplar Street

Source: MIT Department of Urban Studies and Planning, Course 11.360, Fall 2014

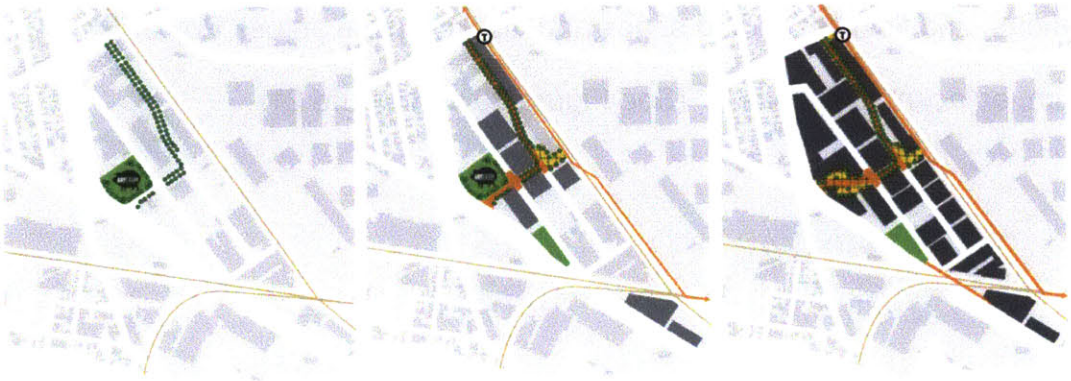

Figure 21 In the Above Phasing Recommendations, (2017, 2023, and 2040 respectively) MIT DUSP Practicum Phases ARTFarm Out of the Plans by 2040, Making the Project Notably Absent in the last Map

Source: MIT Department of Urban Studies and Planning, Course 11.360, Fall 2014

The MIT-DUSP plan includes the ARTFarm logo in its phasing illustrations for the short term (2015-2017) and medium term (until 2023), though not for its longer-term proposal (2040). (See Figure 21) This absence of the ARTFarm as in

long-term plans suggests that even professional practicing planners and students may be reluctant to declare the ARTFarm a permanent feature of the Brickbottom neighborhood.

The MIT studio's conception of the ARTFarm site and a well-lit pedestrian path and streetscape – bears close resemblance to the "activation" task given to ARTFarm's project managers. The plan suggests: "In the short term, the City of Somerville should take immediate action to improve the public realm in Brickbottom. Not only is this a relatively low-cost undertaking compared to later development phases, it is also an opportunity for catalyzing change and building community support." (MIT Department of Urban Studies and Planning, Course 11.360) The ARTFarm project team itself is currently considering how to further activate the site using the new funds.

CHAPTER 4: Findings

Up until this point in the ARTFarm planning process, as a result of a pursuing a distributed community process that does not take into account the interactions between the pressures described above, each stakeholder cluster attempted to pursue its own interests and capture its own development flag. This resulted in a set of design proposals that have lost ground on their vision of integrating environmental, social, and economic sustainability in a comprehensive way.

4.1 Capturing the Flag(s)

The stakeholder clusters all acknowledge that the ARTFarm area is poised for substantial transition and change. The **Arts Administrator** views this space as "a way for the city to have its flag in the Brickbottom area...[the city] is going to change... so then how do we say for the city in the long term: 'this is your open space. this is your civic space. your sustainable space' ?" (City Arts Administrator) Our organization tries to do a "good job of capturing the flag...[Our goal] is to plant that flag down there quickly and create ownership and a community expectation of how that site is going to be occupied. If we don't do it, someone else will." (City Arts Administrator)

According to the **Former City Planning Employee**, there are several different 'flags' that the city hopes to capture with the ARTFarm project. "One (flag) is economic development boosterism that shows that Somerville is open for

business... That's often how city governments and chambers of commerce talk. People who think about gateways will (also) talk about this." (Former City Planning Department Employee) This flag represents the pressure to use conventional economic development on the ARTFarm site.

"The other (flag) might be people who like the funky stuff, the bikes, like the maker spaces, the farmers markets, the Fluff Festival, and they want to put up a flag not that says 'We're open for business and we'll take big development,' but that says 'This is the character of Somerville. This kind of stuff.' They are both flags that you would want to put up but they are slightly different colors." (Former City Planning Department Employee) The flag represents the pressure to maintain the Brickbottom community's artistic character.

Third flag is "for something that we don't have yet, people who would say "we envision the future of Somerville with more opportunities for people who don't have opportunities now, are either getting pushed out, or not welcome." (Former City Planning Department Employee) "The 3 groups are all excited about something new. And I think we could imagine something that would please them all." (Former City Planning Department Employee) According to the **City Arts Program Staff**, the **City Arts Program** wants to provide interesting cultural programming with an eye on the long-term demographics changes within Somerville, "to keep people employed in this community," and maintain immigrant diversity by counter-acting gentrification in East Somerville.(City Arts Program Staff) In the interim, one possibility would be to have community dinners on the site, which they have already been organizing at an adjacent for-profit culinary incubator close to the site. In order to address way-finding issues,

ARTFarm could act as a "cultural corridor" to showcase Somerville's diversity and connect the surrounding neighborhoods to Union Square. (City Arts Program Staff) This project's hope is to "stake our claim... not just for the arts, but for the community." (City Arts Program Staff) By involving the immigrant communities, ARTFarm becomes "an inclusive act." This flag represents the pressure to distribute community benefits from the ARTFarm project.

The last flag represents the pressure to clean up the site and to develop with environmental sustainability—including urban agriculture—as an integral part of the project design. The **Urban Agriculture Non-Profit** has been in Somerville for 15 years. They have built green spaces, planted trees in medians, and started school gardens. They started the East Somerville School Garden in 2003. After a fire in 2010, the school was rebuilt to incorporate the largest school garden in the city in its design. "The architects/designers saw that the community loved this school garden for 8 years and the flag planting worked." ("Urban Agriculture Non-Profit Executive Director") The **Urban Agriculture Non-Profit Executive Director** points out that "whenever (urban agriculture projects) get redeveloped, they keep the plaque as a memorial. It's respectful like a historic building, memorializing something that was alive and it will continue." ("Urban Agriculture Non-Profit Executive Director")

4.2 Differential Losses in Capture the Flag

By carrying out a distributed planning process that engages focus groups or design charettes for ideas rather than for consensus-building and decision-

making, the ARTFarm created unnecessary winners and losers and compromised its comprehensive sustainability goals that were meant to include environmental, social, and economic sustainability.

Economic Self-Sufficiency over Economic Sustainability

The City has challenged the ARTFarm project to make a case for the amount of economic value that can be generated from this [sort of strategy] over time is equal to or greater than selling out to private developers. The **Catalyst/Instigator** acknowledges that "a case needs to be made that the amount of economic value that can be generated from this [sort of strategy] over time is equal to or greater than selling out [to private developers]." The **City Arts Administrator** would be in favor of the city deriving profit from land from sales if the city is not using the land. In the case of underutilized city-owned land, the city could "give the money [from the land sale] back to the tax base so people won't have to pay as much in taxes." However, regarding for-profit ventures on this piece of city-owned land: "it's still up in the air about how much the city should be providing land and property to a for-profit organization...I understand it, but why [the for-profit farm] and not someone else? It's kind of a trendy thing, it's cool but they can derive profit off of city owned land." (City Arts Administrator) No matter what the financial model, the goal is that it be self-sustaining between for-profit ventures that can benefit the social agenda of the space.

Up until this point in time, the City of Somerville's economic self-sufficiency requirement has decreased the potential number of business models

available to artists, urban agriculture entrepreneurs, and restaurateurs interested in collaborating with ARTFarm. The economic self-sufficiency requirement as a determining factor as to whether the ARTFarm project can continue to use the land favors temporary intervention strategies like the types seen for activating the site for festivals and concerts. However, this requirement for short-term economic profitability may present too high a risk for entrepreneurs who might otherwise wish to collaborate. If local sustainability-oriented businesses can't absorb the risk of loosing land tenure, they will be unlikely to participate in the ARTFarm.

Hasty Design over Social Sustainability

Designing a self-sustaining business model that can cover infrastructural costs and maintenance of making ARTFarm a four-season event space. As a department, the Economic Development team "has been taking a lot of (steps) as far as what the city needs to do to push this project forward...and its going really well." (City Economic Development Planner)The goals of the **Economic Development Planner** are: To monitor the economic development progress of the project so that the site can achieve economic self-sufficiency and sustainability; To utilize the economic development potential of the site to support small-scale innovation districts in Brickbottom more broadly. "I think the Mayor really does love the type of development that the arts might like or immigrants are bringing or the maker(spaces) stuff... but he's also perfectly excited about Ikea." (Former City Planning Department Employee)

This project is supposed to be a "self-sustaining project. Although we say that we are going to have commercial maker spaces to help pay for programming and management, is that really feasible? Is there a strategy behind it to make sure that it is actually successful?"(City Economic Development Planner) "The idea is that it is self-sustaining." The project is currently seeking funding from federal and state sources. The city is "now leaving it up to the (City Arts Organization) and (the Arts Association) and (the Consultancy), they have a lot of funding that they can find through stakeholders as well."

"The way that I understood (the project) in the beginning and even now it is that this is a temporary intervention. What's a little sad is that if that's true, there is a lot of great energy and effort being expended for a project that may not last. A lot of people who are directly involved in this project are incredibly excited and think that this could be a generator of future projects that involved communities who are directly affected by new development to just have a place to get together and a place they call their own that won't be disrupted hopefully by this rising tide of displacement and rapid fire gentrification happening around them. This is just one way… its not going to stop this from happening but it is one thing that they can claim as their own. And then other communities can get together and do that. I worry that (if) it is a temporary intervention, it wouldn't be a good thing, I don't think it would be a popular (intervention)." (Community Corporation Program Officer) The ARTFarm team's present strategy of gathering topic-specific focus groups for brainstorming may be politically expedient in order to form alliances that increase the changes of getting their initiatives approved by the city. However, this emphasis on focus groups and brainstorming sessions for

generating ideas rather than agreements perpetuated a reliance on previous networks and social capital, generated ideas divorced from implementation, decreasing the likelihood of finding synergies and addressing concerns across stakeholder groups. The results of the process—though very innovative in terms of arts programming—have caused environmental sustainability and social sustainability—and community benefits in particular—to take a back seat in the programming plans.

Capping the Site instead of Environmental Sustainability

The City Economic Development Planner explains that "their concept is that everything can be moved. At least that's my understanding thus far, they are bringing in these containers and can move them around as needed... If they change the proposal they are going to have to give it back to us to make sure that it is pertaining to rules and regulations in all departments of the city..."
"I know that the (For-Profit Farm) submitted a proposal for what to do with their half-acre, and I believe it was in (the ArtPlace Grant) proposal." (City Economic Development Planner) "It's a city-owned property. We want that site activated. As of right now we are helping with the funding of the remediation. We typically ask the developers to do this type of project... projects that need to be done like environmental (clean up)." (City Economic Development Planner)
"Especially with the concept of self-sustaining, I don't think we would (charge rent). We haven't set a specific number (of years) for which (the project) was intended. We may need to go forward with another project or another plan. But as far as right now, our proposal is through them to see what we can do with the

site for temporary use." (City Economic Development Planner) "In the long-term, if retail is attracted by it, there's retail there, its now an activated space. A complete collaborative place. If you can create that sense of place in the community, then you've kind of done what you need to do. That's our hope for now, that's our short-term hope." (City Economic Development Planner)

For the **Urban Agriculture Non-Profit,** this is a project about "place-making...(they) don't need to be making money." The **Non-profit's** mission is "to provide food access... so (that) is the eventual goal we should be thinking about. Not building for maximum capacity but thinking about public space" and there should be explicit "agreements with people whose space you are activating." ("Urban Agriculture Non-Profit Executive Director") The **Non-Profit** suggests that "funding should be simpler and more predictable." "It's easier to get more money to start something new than it is to get money to maintain something you already started." ("Urban Agriculture Non-Profit Executive Director")

On an abandoned lot in a nearby Massachusetts city, "the Mayor wanted to work with (a community gardening non-profit) to clear the junk, do some raised beds, engage the community, and turn it into an asset instead of a liability." (Former City Planning Department Employee) The non-profit agreed, but asked for some assurances from the Mayor that when surrounding properties are suddenly developable, he wasn't going to kick the community garden out. According to the **Former City Planning Department Employee**, the city's Mayor responded, " 'I'm not saying I want this to be a community garden forever. I'm just saying when its not anything couldn't it be a garden?' It became a struggle of

what is the promise here?" (Former City Planning Department Employee) This situation often produces the outcome "that nobody builds anything."

The city could have planned to build the garden and said, "If at a future date we'd like to change that, we'll figure out a suitable new garden site, or you'll get money out of the transaction, at least something where you get back what you put in..." (Former City Planning Department Employee)

The results of hasty cap design so far have been that there leaves no infrastructure for urban agriculture, (at least on a large scale) limited plans for long-term site remediation, no agreement about land use tenure, and only impermanent structures (without foundations or boreholes) being allowed on the site. As of February, 2015, the urban agriculture partners that were originally involved in the plans were not participating in the community meetings. The records from these meetings show a much stronger interest and programmatic focus on short-term arts-based activation and ephemeral programming than on how environmental sustainability (in the form of remediation and urban agriculture) can be integrated into the site plans.

Ambiguity over Community Benefits

The **Former City Planning Department Employee** cites the Homans factory building near the railroad tracks in Gilman Square as an example of how the city can speculatively delay development at the expense of present-day utility. The four-story factory building was vacant for several years. When former Mayor Mike Capuano designated the site as a "strategic asset," the city

purchased the building hoping to capitalize on future growth in land values accompanying the MBTA Green Line extension. The city considered proposals to build a community center, a recreation center, a senior center, or sell off the property for housing, and in particular, artists' housing. The **Former City Planning Employee** explains that these types of impermanent land use projects are subject to local land speculation. However, the project has not moved forward in 15 years. Consequently, the city has "not gotten tax revenue from it, had to maintain it to a certain extent, and (has) not gotten any use out of it whatsoever." (Former City Planning Department Employee) City officials often think, "It will be worth more in the future" or " we'll want to have it open" or "we don't want to invest in it now if we need to change later." While acknowledging that this approach may be fiscally prudent, the **Former City Planning Employee** points out that in the case of Homans, the property remained unused and undeveloped for over a decade. "An entire generation of kids have grown up with that as a vacant building." (Former City Planning Department Employee)

Time Scales and Time Lags

"There are many (places) where we know some time in the near future something is going to happen and we are afraid to do anything...(I've watched those places) my entire planning career, in temporary zones waiting for something to happen." (Former City Planning Department Employee) Paradoxically, temporary use projects can remain on site for extended periods of time. The **Former City Planning Employee** cites several examples from nearby

Union Square, in which "a lot of these sorts of temporary uses could (remain) there for more than 10 years."

Some privately owned projects accomplish the same economic 'capture the flag' goals that cities hope the temporary projects land use projects will. For example, Sherman Café, the first cafe in Union Square to attract technology sector professionals with disposable income from in nearby Cambridge, was an early example of a locally owned business in an area with little tax revenue and numerous vacant lots. The City of Somerville has tried to coordinate economic development in Union Square, an entire area filled with potential places for temporary land use projects, through a revitalization plan. Sherman's was seen as a major improvement in the area's attractiveness and desirability for a new, wealthier set of Somerville shoppers. The **Former City Planning Employee** notes that Sherman Café was "there for 10 years and now it's gone. From a planning perspective, I guess it was a temporary use. Now it's gone, but its affect has been felt." (Former City Planning Department Employee)

"Union Square had a master plan… and (it had) Sherman Café, Union Square Main Streets, the Farmers Market, and the Fluff Festival. Which of those (two categories of) things shapes Union Square? Probably the second category because it's proving the concept." (Former City Planning Department Employee) The **Former City Planning Department Employee** argues that proving the concept of how an urban area can look and feel creates more impact than master plans because, "people know that plans are cheap. It's very easy to produce a slick-looking plan that says what your vision is but (that) hasn't been tested by

the market or shown that people are willing to put in the energy to make something happen."

4.3 Unattained Potential for Sustainable Development

The ARTFarm arts-oriented neighborhood development project provided an opportunity to pursue multiple economic development objectives by attempting to simultaneously accomplish arts-oriented development, brownfield redevelopment, and sustainable development, particularly through urban agriculture and preservation of open space. Using the Mayor's invitation to "activate" the site and SomerVision's city policy goals to justify and guide their development priorities, the team of ARTFarm organizers effectively mobilized political support within the city apparatus toward letting them "activate" the site through short-term ephemeral programming. These types of events built on these individuals' prior expertise and gained publicity for the ARTFarm project.

However, though the ARTFarm project has mobilized regional sustainability and arts-based planning expertise in the City of Somerville, it remains unable to effectively mobilize the potentially reinforcing nature of these three policy goals. Though arts-oriented development has been a key part of Somerville's economic development strategy in Brickbottom, the opportunity it provides has been narrowed by an emphasis on activation over long-term programming, the capture the flag mentality, and limited engagement and communication between the stakeholder representatives of arts-based development and the environmental clean up division and the urban agriculture

organizations eager to get involved.

Though the city has its sights set on developing a long-lasting community presence, the opportunity for economic development that takes into account sustainability, thorough brownfield clean up, and arts-based development is limited in the case of the ARTFarm. In the following chapter, I trace how these reinforcing loops interact, and how Somerville has been attempting to address them.

Cities engaging in sustainable development that includes environmental, social, and economic sustainability gain ground in mutually reinforcing policies when they plan for all types of sustainability simultaneously. If they pursue single-issue strategies and optimize for one outcome over the other, then the agreements, site plans, and site outcomes, will fall short of the sustainability levels they could otherwise achieve. In practice, this requires cities to take a consensus-building approach that takes into account the pressures acting on the site and devise ways to respond to these pressures in real time on a given project site.

Multi-party negotiations may increase the likelihood that all stakeholder interests can be met – though not necessarily in a reinforcing way. For policies to be mutually reinforcing, need to go beyond meeting stakeholder interests in the plan. In the case of Somerville, the ARTFarm project enjoyed political support, independent seed money, and motivated leadership that did their best to make this project successful. In this sense, it is an ideal situation for a sustainability project. The results of this on-going project planning process still remain to be seen. However, cities with similar sustainability goals may be able to learn from

this case study in terms of the pressures they face, how those pressures produced deleterious effects for the sustainability of the site, and how these affects may be avoided in the future.

In areas with rapidly intensifying real estate markets and a growing creative economy, how do city economic development strategies including temporary land-use tenure and a capture the flag mentality affect design proposals and stakeholder engagement processes in artist-led redevelopment projects on city-owned land? Given the influences of economic development pressures on design and policy, what can artists and cities do to effectively incorporate a broader set of community development interests/actors into these projects? How have the forces at play in the site informed the process used to engage community stakeholders and make decisions about the site? What can these affects of complex site conditions on the community engagement process – as led by non-elected ad-hoc committee of city officials and artists – demonstrate about temporary land use development, public decision-making processes, and the pressures that cities experience as a result of creating the conditions for economic development and then trying to create and maintain public open space in rapidly changing former industrial area.

Hacking "Problematic Sites"

Dealing with complicated problematic sites involves "the overlap of incrementalism and creativity" in a form of hacking urban land development. (Former City Planning Department Employee) "There is a form of creativity that is

all big gesture, grand vision. There is another form of creativity that is adaptation, rolling with the punches, figuring how you can make changes here now and then later." (Former City Planning Department Employee) "It's a nice intersection with the DIY culture, Yankee thrift, and hipster cultures. To do the same, (yet) one step up with our urban land would be an exciting way to approach things. In some ways, (shipping containers) are sort of a fun fad, but in another way, they sort of embody this sort of thing." (Former City Planning Department Employee)

Former City Planning Employee says that the field of urban planning has been struggling with this dichotomy for 40 years. "We have the grand visions... and in opposition to that, we have the preservation mindset that says the old city is the better city, the human scale is all that really matters...neither of these is right...The middle path that might be struck saying 'we're all for change and development and adaptation, but we don't want it to happen at this grand scale that just paves over and starts again... (and yet) we don't want to preserve everything and leave it forever." (Former City Planning Department Employee)

The ARTFarm "is a good example (because) we didn't want the waste transfer site there forever" but there are still incremental new things planned for the site. (Former City Planning Department Employee)"It's not like you can hack your (electronic appliances) to reshape your neighborhood. We need to hack some other thing...I don't know what it is. We are trying to figure out the development tools are. Some are global scale real estate firms, and we obviously don't want to work in those, but the other thing is the mom and pop (economic development efforts) ... so how can we turn these things into something we want?" (Former City Planning Department Employee)

Chapter 5: Implications for Policy and Practice

The ARTFarm has already raised approximately $1 million of funding and continues to receive political support and community motivation to enact an inspiring and creative vision on the former waste transfer site in Brickbottom. In this final chapter, I focus on the future of the site in terms of strategies to avoid loosing the momentum the project has built and improve the integration of the multiple dimensions of sustainability in a city-wide strategy led by the ARTFarm. I suggest several ways that the ARTFarm organizers and the City of Somerville could move forward to achieve greater integration of these different dimensions of sustainability in both the short term and the long term.

5.1 Recommendations for the ARTFarm

As it stands, the ARTFarm site has many constraints including contamination issues, uncertainty associated with the design of adjacent transportation projects, and poor public access to the Brickbottom neighborhood. All of these issues are addressable with time, funding, and robust institutional strategy. However, in order to accomplish a more comprehensive sustainable development strategy for the ARTFarm site and the numerous other sites like it in Somerville, I recommend focusing on programming for a distributed network of spaces rather than on the mix of activities and constraints on the ARTFarm site itself.

The stakeholder analysis suggests that the stakeholders have different infrastructural and programmatic interests and requirements that are difficult to accommodate on a single site. As the stakeholder assessment and the progression of the planning process so far suggest, the ARTFarm project has not explicitly managed to integrate these three policy objectives either over the short-term or the long-term. At this point, the City of Somerville could choose to abandon the vision of the ARTFarm and sell off the land for private development as soon as possible so as to meet the city's short-term economic goals. However, there are other options available to the ARTFarm that can have them pursue their vision, spend their grant money wisely, and build more community support moving forward.

Immediate action steps for the ARTFarm team:

A. Jumpstart the Clean Up:

Determine how much it would cost to remediate the different parts of the site at a sub-site level. This would determine how much of the land needs to be sold off with clear standards for subsequent use in order to fund the remediation, which will have a big environmental impact on both the ARTFarm site itself and on the water quality of the storm water runoff into the Charles and Mystic rivers. For example, the city may decide to cap ¼ of the site and put shipping containers on the capped portion in order to start using the public space as public space. An asphalt-based cap design would be crucial here, as it that can be easily pulled up when the city has generated enough revenue through private sales in other areas to clean up more of the site.

B. Establish a Fund:

Use the money from private sale of a portion of the ARTFarm site or similar sites to establish a long-term fund that the ARTFarm would administer. (See C and F below) Start using some of the money from land sales and the revenue brought in from other site programming made possible by new land accessible because of the remediation.

C. Start Distributing Micro-Grants:

Use the $1 million the ARTFarm already has from state, philanthropic, and local sources to make micro-grants administered by ARTFarm with the criteria that projects integrate at least two of the three sustainability dimensions in their programming on the ARTFarm site or on similar publicly owned parcels elsewhere in the city.

D. Distinguish Between Site and Programming:

Distinguishing between site-specific activities and programming activities that could happen anywhere helps the ARTFarm become more strategic in where it invests time, funding, and political capital. The ARTFarm site becomes the center/headquarters of programming rather than a container for site-based activities constrained by site conditions.

E. Make Lists:

Use the ARTFarm team's extensive creative networks to generate a list of programs/programming functions that the broader community of stakeholders would like to see beyond the ARTFarm site. Generate a list of potentially interested developers or business owners who can afford to help with

remediation in exchange for access to valuable land in the Green Line Extension walkshed. Generate lists of pilot test sites and artists (with preference given to those in side Brickbottom and Somerville) who might be interested in working on projects.

F. Convene for Action:

Convene five key stakeholders in a process convened by the City of Somerville, hosted by the **Pro-Bono Sustainability and Landscape Consultants**, and managed by the **Community Corporation.**

This process should bring 7 stakeholders together:

- The ARTFarm organizing team (**ARTFarm Instigator/Catalyst, City Arts Program Staff**, and the **City Arts Coordinator**),
- the **Collaborating University Partner,**
- 1-2 representatives from the **Artists Association**,
- and the **Immediate Neighborhood Main Streets Executive Director.**

Note: The Brickbottom neighborhood could be a test ground for these new ideas, so it would be important to seek collaboration with the **Ward Alderman** on feasibility and implementation, once the committee has made several grants and identified key areas in the city to test their ideas within the next 6 months.

The goals of this process would be to:

1. Decide on Strategy

Decide on a strategy for partial sale of the ARTFarm site for private development and the conditions under which a sale would be beneficial for

the ARTFarm's overall programmatic goals. For example, a certain degree of private development could be allowed in exchange for remediation of a portion of the land that would be returned to the ARTFarm for continued, permanent public uses.

2. Identify Pilot Sites

Identify 2-3 pilot project sites and contact adjacent developers that could be approached about partnerships and synergies for clean up. At the same time, put out calls of proposals for artists and sustainability-related local entrepreneurs to design specific interventions for those sites so that they can be at the negotiating table with the developers for clean up as part a of packages that are customized for each site and pilot project.

Each one of these pilot projects is itself an experimental consensus-building approach to integrating the multi-dimensional aspirations of sustainability in a single site. The ARTFarm executive committee should be aware that if they convene the relevant stakeholders in a process to decide on programming for a specific site with this three-way integration in mind, that the short-term and long-term versions of the kinds of projects that integrate the three simultaneous dimensions might not be the outcomes that each of the advocates of the three dimensions had originally predicted.

For example, urban agriculture programming could include hosting weekly farmers markets that provide surrounding low-income neighborhoods with fresh produce at a low price rather than raised bed urban agriculture on site. Other alternatives to raised beds include rooftop gardening, hydroponic systems, and other design options for urban agriculture. Because the pilot projects are operating with an over-all strategy of integration, they can afford to be more flexible at the site level if the executive committee continues to use multi-dimensional sustainability as the main criteria from which to evaluate all the projects it oversees.

3. Propose an Advisory Structure

Generate a proposal to the City of Somerville for the structure of the ARTFarm sustainability executive committee and advisory committee.[25] Consider establishing a community development corporation—owned and managed by the executive committee and separate from the city—to manage these projects going forward. This entity that coordinates the micro-grants would become the symbolic face of the ARTFarm site's programming and would reach beyond its site boundaries. This entity will become the advocate of trying to do as much as possible to integrate these three dimensions across programming throughout the whole city.

In order to promote the integration of the arts in and through sustainable development, artists need to have a percentage of ownership and equity interest in these development projects. The artists in a potential CDC could use the pieces of newly remediated land as equity. This equity in land development projects would help keep artists in place and avoid displacement. Contact the Four Points Arts Community in Boston for information on artist-formed community development corporations.

In terms of an advisory structure, there should be an executive committee or council of 4-5 stakeholders who decides by consensus, and a much larger group (advisory committee) that has a lot of input. Both advisory committee and executive committee would be charged with evaluating each project that comes their across their desk along the lines of its potential to integrate some—if not all three--dimensions of sustainability in the short term, while keeping options open for improved integration in the longer term. Make sure that each activity is evaluated by the committee from the standpoint of integrating multiple dimensions of sustainability to the extent possible, allowing for the fact that not every project is going to include all three dimensions of sustainability at each stage of development. The committee should always be considering the extent to which the projects can optimize across these three concerns. Programming

decisions should be based on activities rather than spaces or physical sites, which may change over time.

The ARTFarm executive committee would:

1. Seek to optimize short-term and long-term trades by identifying contaminated sites in the core of the new GLX walkshed and getting them cleaned up by private developers in exchange for public use – May require partial trade.

   For example, keeping a portion of a contaminated area in the urban core of the Green Line Extension with very valuable real estate under public control by selling some portion of it off in exchange for remediating would make the whole site is in itself a step toward integration. The ARTFarm could take advantage of that land by putting artists uses there, enabling crosscutting sustainability programing that is desirable. The ARTFarm could use the waste transfer site and other sites to generate some economic or public use value.

2. Separate the sites and the programming. The committee would recognize that it is not practical to integrated all uses on all sites all the time, but that each site holds potentially unique opportunities for trades and integration across some of the uses, with the rest of the programmatic integration made possible through programming elsewhere in the city.

5. 2 Conclusion

Most of the programmatic suggestions in the original ARTFarm plans could be much more transitory and mobile and are not necessarily confined to a single site. The ARTFarm could act as the staging area for the programs and initiatives that would emanate from the site and spill over into other areas in Somerville. The ARTFarm—by acting as an independent catalytic artistic force for three-way sustainability in Somerville—can transition into a seed bank for ideas that will sprout in each new location bringing forth unpredictable hybrids of sustainability based on new ideas and solid roots from which to grow.

CHAPTER 6: References and Appendix

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Appendix

APPENDIX A. ARTFarm Vision and Environmental Clean Up Timeline

Time	Vision / Proposal	Environmental Clean Up
Fall 2013	• Activation Mandate from the Mayor to the **Project Catalyst/Instigator** and the **City Arts Administrator.** "Nobody was sure what was going to happen, (at the time of the incinerator demolition) but the mayor came to me and said: let's activate the site, do something with it, bring the artists in. We want to show off what we are doing with this." (City Arts Administrator) • The **Project Instigator/Catalyst** held several charettes in which members of the community (approximately 60 people were in attendance, mostly artists and people interested in urban planning generally) answered the question "what would you like to see in this space?" According to the **Arts Administrator**, it was a time to "name everything [the attendees] want to have happen in a civic space." (City Arts Administrator) The charette presents a "2.2 acre blank slate...an opportunity to create something active and creative there." The **Community Corporation** explains that the initial proposal "was to have a container community...to use recycled shipping containers to build out different growing spaces, working spaces, offices. That was really exciting because it is a good re-use of an old site as a nexus for different communities getting	• The city acquired the site back into its possession and the Waste Transfer Site was demolished. "There were high-level discussions happening for a long time, and last year (2013) the site was cleared and demolished, apparently for future development." (City Environmental Coordinator) "I was not aware of any mandate [to clean up the site at the time that the city acquired the site from Waste Management]." (City Environmental Coordinator)

	together." • After these meetings, they added green space, urban agriculture, and other items to the project agenda. The project inserted culinary entrepreneurship program for immigrants (modeled after previous programs in Somerville) into the proposed funding scheme.	
Winter 2013	• Select Steering Committee begins to meet, using results from the high-level design charette process in a report to the mayor and in the application for the ArtPlace America Grant. • The **Sustainability Consultancy**, the **City Arts Organization**, and the **Community Corporation** submitted their ArtPlace America Grant proposal to the City on January 29th, 2014.	
Spring 2014	• The **Urban Agriculture Company** applied to the City's "innovation fund" jointly with **Catalyst/Instigator** in late March – April 2014. The proposal received positive feedback from the City, though it did not identify a place to actually locate the urban farm. • Some of the materials for this proposal were used in the ArtPlace America Grant, though the **Urban Agriculture Company** was not notified about the success or status of the grant until	

	after it was approved.	
Summer 2014	• ARTFarm Project gets awarded a $415,000 ArtPlace America Grant that can be used as matching funds for other grant opportunities.	• The City Environmental Agency is committed to cleaning up the site. As the City Economic Development Planner explains, "the deeper (into the soil the testing goes), the faster you might be (digging) into other things." • "Although the ideas are proposed, it's fantastic, we're ready to move with community collaboration, because the community is involved, it also requires us to do Phase 1 environmental study." (City Economic Development Planner) The City Environmental Department has "conducted quick browsing testing so far." The City is now required to do another round of testing for pollution in terms of how it is localized within the site. "We are economizing what is required and making sure that it is going to be safe." (City Environmental Coordinator) "We cannot assume that it is good... particularly for public use." We want to make sure that it is totally useable. We started testing at the time when the (City Arts Organization) wanted to use it for urban farming with raised beds. (City Environmental Coordinator) • End of summer target for initial remediation testing results: August, 2014. (Not met)
Winter 2014	• Record-breaking Snowfall	• Record-breaking Snowfall
Spring	• In early 2015, the project won another grant from the	

2015	Massachusetts Cultural Council for approximately $600,000.	

APPENDIX B. Stakeholder Assessment

ARTFarm Instigator/Catalyst

In my role as **ARTFarm Instigator/Catalyst**, my **interests** are creating a flexible, aesthetically inspiring atmosphere in which community members and artists can collaborate over the long term, and over which the community feels a sense of ownership. This space would also spur economic growth in the Brickbottom neighborhood by attracting more businesses to the area that fit within the creative tone of Somerville. In service to those interests, my **concerns** are clarifying the city's long-term plans for the site and the neighborhood, generating support for the longer-term vision of the space instead of merely 'activating' it, and sending a coherent message about the project to other stakeholders and potential funders. I have the following **ideas** of how my interest group could help in the project: Sparking interest in the project both inside and outside Somerville, promoting the project to funders and future partners, researching project precedents, advising on branding/messaging, graphic design, and space design and programming. Helpful **next steps** for the project could include: Making an economic case for the value of this type of development project, designate a communications coordinator and project manager, decide how the space will be managed once it is fully built out, and generate more excitement for the project vision as it currently stands.

City Arts Administrator

In my role as **City Arts Administrator**, my **interests** are 'activating the site' by executing projects as soon as possible, balancing public engagement/buy-in with the need to execute quickly, and creating fair licensing agreements with for-profit ventures potentially operating on city-owned land. In service to those interests, my **concerns** are maintaining momentum on the vision that has already been articulated (and funded) by the ArtPlace America grant, capturing the flag ahead of other private development in the Brickbottom area, and

streamlining city funding and management processes while the site is being cleaned up. I have the following **ideas** of how my interest group could help in the project: Employ the City Arts Administration's other programming activities on this site to quickly populate/activate the space with projects, and use this site to help solidify arts-based zoning changes at the City level, integrate Brickbottom with surrounding neighborhoods, and create excitement about Somerville's creative city character, all of which are City policy goals. Helpful **next steps** for the project could include: landscape architecture plans that show how the proposed program elements might link together, a visual document of the project narrative so far, and some technical information about environmental clean up timelines and the renewable energy potential of the site.

Urban Agriculture Company CEO

In my role as **Urban Agriculture Company CEO**, my **interests** are clear communications and agreements about land usage, siting, funding, and project management timelines so that I can plan how I would like to operate on the site. This includes a preference for a professional entity to manage the site over the long term. I would need at least ½ an acre of land in order to make any kind of profit on the site. I would like to operate a farm stand on site. In service to those interests, my **concerns** are clarity from the City about the approval of the business plans I have generated, consistent and open channels of communication, and minimized infrastructural redundancies of creating a totally separate community agriculture gardening space on the site. I have the following **ideas** of how my interest group could help in the project: In exchange for city support with start-up infrastructure costs, I would be willing to dedicate a portion of the produce to subsidized food programs in the City, host educational classes on the weekends (some hours for free, other hours compensated for use of the farm) and host the City's Urban Ambassador program that trains urban farmers. I would also plan to hire the **Urban Agriculture Non-Profit** workers to deliver produce to local restaurants. The **Local Urban Agriculture Start-Up Entrepreneur** could manage the community garden. The **University Environmental Lab** could use the farm as an urban agriculture learning lab. Helpful **next steps** for the project could include: Establishing an entity to manage the property, (suggests that the **Sustainability Consultancy** would be a good candidate) and clarifying siting decisions that include ways to mitigate air pollution on the site to protect the quality of the produce grown

Local Urban Agriculture Start-Up Entrepreneur

In my role as **Local Urban Agriculture Start-Up Entrepreneur**, my **interests** are to link growers directly with distributors and end users, decrease the city's carbon footprint, and bolster already-existing food access programs such as the Somerville Mobile Farmers market. The **Start-Up** aims to form a web of micro urban farming plots in Somerville that are individually managed and

maintained by local residents with the goal of achieving the volume of locally sourced organic produce needed to consistently supply local restaurants, and farmers markets, and private residencies, particularly in low-income communities. In service to those interests, my **concerns** are: coordinating a fair usage agreement between non-profit and for-profit organizations on the site so that for-profit ventures provide substantial community benefit and meet their bottom lines; Establishing a produce pricing scheme that is clear, profitable, and doesn't undercut other farmers, especially those already selling at the famers market; Protecting capital investments, investments of time and resources, and biological remediation investments in soil; Storing tools and equipment in a secure yet accessible central storage area; Stipulating who is responsible for daily garden maintenance, who would cover the losses if the gardens are not immediately profitable, (need at least 18 months) and/or if community maintenance agreements are not met; and maintaining my role as Start-Up entrepreneur strictly separate from my role as chef in local restaurants. I am legally obliged to keep these two entities totally separate and independent and cannot accept any produce to my restaurant due to potential conflicts of interest. I have the following **ideas** of how my interest group could help in the project: The **Start-Up** could help manage the farmers and farm operations on private plots in ARTFarm and provide a market for their produce in exchange for the farmers selling a portion of their produce to the Start-Up for distribution and resale. The Start-Up has expertise helping set up raised beds and pricing produce at the wholesale reselling to local socially oriented retailers such as the Somerville Mobile Farmers market. The Start-Up's market research makes them familiar with the mechanics of selling organic produce to restaurants, given experience both as a start-up and as a information about local restaurants' supply chains. Helpful **next steps** for the project could include: "[**The Artists** and **Urban Agriculture Company**] are all very much in line with the original purpose by linking growers with viable markets. From what I understand there is going to be quite a bit of growing space added at ARTFarm. We are still figuring out the logistics." (Local Urban Agriculture Start-Up Entrepreneur)

Pro-Bono Sustainability and Landscape Consultants

In our roles as **Pro-Bono Sustainability and Landscape Consultants**, our **interests** are designing the site as infrastructure for social innovation that can link the other neighborhoods, particularly union square business district and the East Somerville neighborhood which is historically underserved; creating a neighborhood development foothold for new micro-investment neighborhoods and denser "big-money projects" along the Green Line; optimize land uses and design on the site to contribute to neighborhood, city, and bioregional sustainability in Somerville; In service to those interests, our **concerns** are implementing a design and economic model for the site that keeps small businesses and creative people in the neighborhood and provides access for youth and all people of Somerville; avoiding the likely restriction of pedestrian access to the neighborhood with the grounding of the McGrath O'Brien highway

in the Brickbottom neighborhood. We have the following **ideas** of how our interest group could help in the project: Continuing to provide analysis and support through grant writing, schematic design / conceptual design, spatial analysis of potential build-outs of development decisions, and capacity building (exploring 'capping' options for the site, and supporting community engagement processes); keeping the vision moving forward and providing research, analytical, and networking capital for the project, including help establish criteria for the function of the proposed site cap. Helpful **next steps** for the project could include: appointment of a project manager to whom the **Consultancy** can report; a list of tasks projected until Spring 2015; a plan of how the site programming would integrate with adjacent site programming; clarity on the legal definition of this site including assessment of the need to create some sort of entity or public private partnership; clarity on the business model of the space; establishment of an on-going community input and feedback process for continued community engagement.

City Arts Program Staff

In my role as **City Arts Program Staff**, my **interests** are provide interesting cultural programming that keeps people employed in the community and maintains immigrant diversity in the local area; utilizing the ARTFarm project as an economic development opportunity through jobs creation via culinary programming; and improving pedestrian access and way-finding connections between ARTFarm and surrounding areas such as Union Square. In service to those interests, my **concerns** are establishing equitable zoning and distributional affects of the MBTA Green Line Extension coming in and potential gentrification; clarifying and discussion the rezoning of the Brickbottom area, and perhaps preserving industrial zoning as a way of keeping more artists living in the area. I have the following **ideas** of how my interest group could help in the project: create art spaces and making spaces, and a restaurant and culinary school that could have rotating chefs who have graduated from the City's culinary entrepreneurship program; working with urban farming that ties in with the restaurant's programming goals – "immigrant cultural diversity and food diversity" — with produce grown from all over the world; organizing community dinners on the site in conjunction with two local culinary incubators that have signed on to the programming to help with restaurant permitting and safety expertise. Helpful **next steps** for the project could include: organizing a stakeholder meeting; obtaining the required health permits to prepare food onsite; designing a self-sustaining business model that can cover infrastructural costs and maintenance of making ARTFarm a four-season event space; designing the ARTFarm as a "cultural corridor" to showcase Somerville's diversity and connect the surrounding neighborhoods to Union Square; incorporating the ARTFarm culinary entrepreneurship programs with the City's employment development programs through OSPCD; designating a manager/coordinator for the project over the long-term, and establishing a 501c3 if necessary.

Adjacent Main Streets Business Association Representative

In my role as **Adjacent Main Streets Business Association Representative**, my **interests** are creating a more pleasing gateway into our neighborhood; creating a space for local food, urban agriculture, and actively used space that contributes a lot to the community; collaborating effectively by utilizing informal and formal organizational networks in Somerville that build on existing social capital; connecting ARTFarm with the Union Square redevelopment project's focus on the creative economy and food-based businesses, co-working spaces and places for artists and makers. In service to those interests, my **concerns** are keeping the community informed about long term projects and plans, especially as new waves of residents move to Somerville; using modes of communication outside the digital sphere to keep all residents and stakeholders meaningfully and effectively engaged. I have the following **ideas** of how my interest group could help in the project: building on past collaborations with the **City Arts Program**, share what they have learned regarding rezoning for artists live-work space, parking requirements, and active small-business-oriented arts programming. Helpful **next steps** for the project could include: Coordinating efforts with ARTFarm so that plans link up with Green Line extension plans; consolidating tiny parcels in and near Brickbottom, particularly along Somerville Ave and Prospect, so that they are economically viable for businesses to redevelop.

City Economic Development Planner

In my role as **City Economic Development Planner**, my **interests** are to keep pushing the project forward in the city; to monitor the economic development progress of the project so that the site can achieve economic self-sufficiency and sustainability; to utilize the economic development potential of the site to support small-scale innovation districts in Brickbottom more broadly. In service to those interests, my **concerns** are working on the budgeting processes and strategies to discern the types of development strategies that are most appropriate for the project over the short-term (next 5 years) while maintaining an eye on the long-term plans (next 10+years). I have the following **ideas** of how my interest group could help in the project: create a new urban village or maker village concept, to transform the site into a self-sustaining creative space and community asset so its around a creative workspace with a variety of uses, without making major infrastructural changes that would require zoning variance changes or re-testing by the EPA. Helpful **next steps** for the project could include: Complete the environmental study on historic land uses; complete infrastructure and site preparation including fencing, utilities, and clean up the site for the type of use that they want; determine the types of uses that the space can accommodate; expedite the stakeholder engagement process so that the project can proceed in a timely way and work can start as soon as possible.

Community Corporation Program Officer

In my role as **Community Corporation Program Officer**, my **interests** are to create a robust and accessible community engagement process that directly informs the design and decision-making processes on an on-going basis; meaningfully engage marginalized communities directly surrounding the ARTFarm site in this process so that they can have a sense of ownership after build-out; apply similar equitable standards of development to the ARTFarm project as those generated by the **Community Corporation** for transportation development in Somerville; provide an exemplary model of community engagement in these types of development projects for other communities to emulate. In service to those interests, my **concerns** are if the project is temporary, that the energy and effort put in by communities and stakeholders will be wasted; without a robust community engagement process, communities directly affected by development will not reap the benefits of development in the Brickbottom area, perpetuating the effects of gentrification on disadvantaged communities. I have the following **ideas** of how my interest group could help in the project: helping to advise the community engagement process as it unfolds; connecting affordable housing projects on nearby Linden St. and Washington St. with urban agriculture onsite at ARTFarm to provide residents with access to healthy food they can grow themselves and open space for the neighborhood to enjoy; the **Community Corporation** is potentially willing to manage the portion of agricultural area reserved for lower income families who may not otherwise have access to growing space. Helpful **next steps** for the project could include: increase communications between different members of the ad hoc steering committee, particularly in regard to managing urban agricultural land on the site and connect the **Community Corporation's** affordable housing projects with ARTFarm site programming.

City Environmental Coordinator

In my role as **City Environmental Coordinator**, my **interests** are to continue working on and contaminated sites owned by the city, and in particular managing the clean up portion of this interdepartmental project. In service to those interests, my **concerns** are moving swiftly and efficiently through the contracting process for testing and clean up; determining which types of testing are economically feasible for the city and under what timelines, given the results of more thorough testing onsite. I have the following **ideas** of how my interest group could help in the project: Complete Phase 1 testing; frame the discussion for the clean up options available, and how they may allow and restrict usages on the site; optimize clean up efforts within the city budget. Helpful **next steps** for the project could include: Hold a stakeholder meeting with city officials once the testing results are completed; have a meeting with all stakeholders after that.

Adjacent Parcel Real Estate Developer

In my role as the **Adjacent Parcel Real Estate Developer,** my **interests** are acquiring the site and developing it for luxury automotive uses due to the site's proximity to my existing property and its proximity to downtown Boston. I would utilize the property for mix of car storage, car repairs, and office space. We would probably acquire another 10 acres in the Brickbottom area if we could, in particular to store 3,000 cars we now store in Charlestown on rented property. I own 98% of the real estate that our 53 dealerships sit on. Wherever my dealerships are, I always try to acquire the adjacent sites for expansion, for growth. Adjacency, frontage, and proximity are my main criteria for purchasing land. We've just leased Pat's Auto Body and another building behind it for 25 years for automotive use, which are going to be used for storage because they don't have good frontage. We are currently leasing that yellow brick NSTAR building for 25 years. We'd be interested in buying that building and others around it. In service to those interests, my **concern** is not being able to buy the land from the city because the city has avoided quoting a price on the former waste transfer site for at least the past 12-14 years. If I do not get enough real estate, I may decide to move my corporate offices to nearby Brookline or Dorchester. I have the following **ideas** of how my interest group could help in the project: I could develop a project on the site that could be potentially mixed-use with the second and third floors used for show room and technical space. A luxury dealership would provide a sense of prestige to the gateway to Somerville. Helpful **next steps** for the project could include: Grounding McGrath highway and turning it into a boulevard of successful businesses that serves as a gateway to Somerville.

Former Urban Agriculture Non-Profit Director

In my role as **Former Urban Agriculture Non-Profit Director**, my **interests** are seeing urban agriculture flourish in Somerville through effective coordination and planning. I used to run the Somerville **Urban Agriculture Non-Profit** which runs nine school gardens, two urban farms, and works with the farmers market through Shape Up Somerville, a program which we helped create that is now a city department. In service to those interests, my **concerns** are that as far as I know, the **Urban Agriculture Non-Profit** doesn't have any written agreements about the spaces it uses. The organization has not experienced any conflicting land uses because school garden land was not needed for other uses. We brought in funding from foundations and support from parents and schools too. The projects have been successful because "we brought everything to the table. We brought a large grant for teaching in schools, we got a lot of money is what it came down to. And we had support and a plan. However, we still had to bring in our own funding to maintain the space. I have the following **ideas** of how my interest group could help in the project: The most important thing is that you have to fund staff. People think it's just going to happen. It doesn't just happen. Even in a community garden you need to manage the intake process for the

people coming in to use the gardens, manage the waiting list (in Somerville there is a 200+ name waiting list for community gardens) you need to pay for water, need to pay for the raised beds, and you have to pay for year-round maintenance which takes a person to manage. Need to budget for people. Helpful **next steps** for the project could include: Keeping regular communication is really important. Having a city liaison and keeping engaged by going to city meetings as well. Come to agreement that ensures that community groups, for-profit, and non-profit groups all have a piece of the land. I haven't seen any other place in Somerville or Boston where there is any sort of a mix. Having a community-minded for-profit is a great idea. If you want to do an official city garden, you can't resell any food grown there.

Immediate Neighborhood Main Streets Executive Director

In my role as **Immediate Neighborhood Main Streets Executive Director**, my **interests** are developing a prosperous business district in the East Somerville neighborhood that borders on Brickbottom that strikes a balance of public and private space and encourages property values to rise while maintaining the character and felt sense of identity in East Somerville. In service to those interests, my **concerns** maintaining a sense of authenticity and connection between people in the neighborhood as the area changes; building relationships and sense of ownership between residents and local businesses; attracting enough attention to East Somerville that people want to travel there and patronize the local businesses there. I have the following **ideas** of how my interest group could help in the project: publicizing the activities that are already occurring in the neighborhood; helping disseminate information to small businesses about ways to increase their clientele; acting as a liaison between the City and local businesses; 'activating' the streetscape with art projects in coordination with our NEA grant and the **City Arts Organization**. Helpful **next steps** for the project could include: ground the McGrath O'Brien highway to eliminate a major barrier to access between East Somerville and Brickbottom; planning for more small businesses in pedestrian-friendly clusters, including coffee shops and restaurants that can become destinations for people living outside the neighborhood.

Former City Planning Department Employee

In my role as **Former City Planning Department Employee**[26], my **interest** is finding a usage agreement that meets the interests of Somerville's economic development department, artists/makers that help maintain Somerville's unique cultural characteristics, and those organizations who create more opportunities for people who don't have opportunities now, are either

[26] Though still active in Somerville city planning, the informant has not been employed by the City in several years.

getting pushed out, or not welcome in Somerville. In service to those interests, my **concerns** are the city's tendency to delay site development at the expense of communities who would otherwise enjoy the spaces if developed sooner; and balancing the needs of future stakeholders with current economic development goals. I have the following **ideas** of how my interest group could help in the project: act incrementally to develop the neighborhood while securing the contamination and avoiding disturbance; clarify usage agreements in ambiguous site cases and communicate those decisions effectively within the City government structure. Helpful **next steps** for the project could include: adopting a development model for the area that includes incrementalism and creativity; developing a real estate financing model that uses local assets instead of global scale real estate firms.

Urban Agriculture Non-Profit Executive Director

In my role as **Urban Agriculture Non-Profit Executive Director**, my **interests** are providing food access and public space in East Somerville via explicit agreements with surrounding residents; doing a comprehensive remediation and farming as much of the 2.2 acre site as possible; getting water, electricity, and a storage shed onsite. In service to those interests, my **concerns** are finding funding to support long-term urban agriculture maintenance; building a large citizens group that is ongoing and prepared to respond to new initiatives as they come up in a pro-active way; continuously engaging the community in ways that enable all to participate by providing translation and childcare during meetings. I have the following **ideas** of how my interest group could help in the project: turn the Non-Profit's other garden sites into community gardens and help operate the one at ARTFarm as a community farm that runs as more of a business model; educate developers and policy-makers about the benefits, spatial needs, and aesthetic considerations of urban farms, including the point that it takes time for gardens to look good and the garden will not look perfect all year round due to seasons. Helpful **next steps** for the project could include: clarifying whether the project is primarily a growing space or not, which parts of the site will be public, whether there will be a greenhouse, and how to secure the area afterhours; create a position of full-time farmer that knows how to grow food and plan a farm, a position which should be paid a living wage, to help with programming continuity, farm maintenance, and mitigating the effects of student volunteer turnover each year; integrate the **Non-Profit's** leadership development program for development for youth, immigrants, and people of color into the ARTFarm site.

City Transportation Planner

In my role as **City Transportation** Planner, my **interest** is to ground McGrath Highway. The decision was ratified by MassDOT after a stakeholder engagement process, and the results of the health impact assessment as the

option "preferred by all." (City Transportation Planner) The highway is owned by the Massachusetts Department of Transportation (MassDOT) and regulated by the Federal Highway Administration, the agency responsible for regulating all highways of federal importance. Though the highway is currently owned by MassDOT and regulated by the FHA, both of whom manage highway construction, design purview for the viaduct is "typically given to the closest municipality." (City Transportation Planner) Though not yet confirmed, Somerville is fairly certain that decisions over design purview will rest with the city. Regarding the Green Line Extension and its accompanying Community Path, the **City Transportation Planner** states, "I tend to think of those things as already done because they are under construction...Both of those projects are likely to happen within the next 5-7 years." (City Transportation Planner) In service to those interests, my **concern** is that transportation planning occurs on an extremely long timescale. "Time horizons are about four real estate cycles, whereas economic development planning is normally done on the scale of one real estate cycle, which is about 7 years." (City Transportation Planner) "Anything that we are thinking about planning, we are looking at a 30 year time horizon. Grounding McGrath is a more near-term project, we hope to start construction in the next 5 years." After grounding McGrath Highway, city transportation plans include a bridge connection from Innerbelt Road into North Point via North Point Blvd with a modified bus route and 'rails-with-trails' connecting into the Grand Junction rail yard, providing a stop in the Brickbottom area, most likely in the vicinity of the Petco on the opposite side of McGrath. The City Transportation planner hopes to include these elements in the Innerbelt-Brickbottom plan "on a feasibility level, not a plan level." (City Transportation Planner) While the City of Somerville would be "ecstatic if [these projects] got done, they are neither under our control nor under our ability to self-finance," so there is no guarantee of their completion. (City Transportation Planner) I have the following **ideas** of how my interest group could help in the project: The interests of MassDOT and the City transportation planners are strongly aligned. "For the most part," the **City Transportation Planner** explains, "MassDOT stays out of granular land use related decisions and is supportive of any decisions that aid in economic development." Though MassDOT isn't directly responsible for city economic development, "they provide minor input as it relates to transportation planning in the area." (City Transportation Planner) Helpful **next steps** for the project could include: Continuing to finalize the design and build resilience into the project. MassDOT is doing some resilience planning as part of the Green Line Extension, and Somerville's environmental department is actively working on resiliency in the city as a whole. However, the **City Transportation Planner** points out that very little of that resilience planning is connected with transportation planning thus far.

Long-Time Brickbottom Resident

In my role as **Long-Time Brickbottom Resident**, my **interests** are ensuring that if the area develops, that it is made more appealing at a human

level: this includes access to nature and open space, sidewalks, cleanliness, pedestrian connectivity with Cambridge and the Somerville. In addition I am interested in "sharing continuity and expansion of cultural and artistic perspectives on the things that go on, not at the exclusion of other commercial interests, but at a minimum not at odds and not encroaching on the artistic flavor of the area..." (Long-Time Brickbottom Resident) In service to those interests, my **concerns** are that Brickbottom is not an inviting neighborhood, but a "corner of the city that doesn't go anywhere." (Long-Time Brickbottom Resident) Furthermore, if the city fails to strike the appropriate balance between residential and commercial uses in Brickbottom, that residential property taxes combine with rising prices due to the induction of the Green Line to displace current residents. I have the following **ideas** of how my interest group could help in the project: generate and implement strategies by which the "creative and artistic presence" in Brickbottom can be nurtured by new development and can "expand and enrich the lives of the larger community through more interaction with culture and the arts." (Long-Time Brickbottom Resident) Helpful **next steps** for the project could include: devising ways to nurture the artistic character of the Brickbottom neighborhood and avoid displacing current residents.

Local Watershed Non-Profit Program Director

In my role as **Local Watershed Non-Profit Program Director,** my **interests** are to disseminate information about sustainable watershed management in the Charles River Watershed and consult to municipalities about strategies to comply with stricter regulations about total maximum daily load (TMDL) expected to come out within the next several years. In service to those interests, my **concerns** are that much of the impermeable surface area in cities consists of private parking lots and paved areas on private properties that negatively impact the public realm by overloading streets and sewers with untreated storm water during rain events. I have the following **ideas** of how my interest group could help in the project: The Brickbottom neighborhood falls within the Charles River Watershed and its runoff flows into two Combined Sewer Overflows (CSO) that drain directly into the Charles River. The entire Brickbottom area is pretty contaminated. Our organization could supply the project with strategies for treating stormwater at the sub-catchment level either on onsite or further downstream. With watershed thinking, "you don't always have to solve the problem at the site level." (Local Watershed Non-Profit Program Director) For example if there is better soil for filtration downstream and you need to cap the site upstream, you can divert water to be treated in a better site. We could also recommend that the project plan ahead for longer-term uses and a more sustainable outcome, so that the ARTFarm doesn't have to "redo everything" if the usages change. Helpful **next steps** for the project could include: Looking at the project design from a watershed level. "If you have the luxury to look at the watershed level, you may be able to more sustainably manage [the system]. Look at the context around the site." (Local Watershed Non-Profit Program Director) In addition, I recommend that the ARTFarm project follow the US-EPA

guidelines about stormwater management on contaminated sites. Stormwater infiltration should not be used on sites with significant contamination present. Link:http://water.epa.gov/infrastructure/greeninfrastructure/upload/brownfield_infiltration_decision_tool.pdf. Instead of infiltration, the EPA recommends using green infrastructure practices such as biofiltration,[27] (see Figure 22 below) green roofs, and liners to prevent contact between stormwater and contaminated soil. Stormwater management requires a collaborative effort by team members responsible for delineating and defining the contamination, remedial engineering, site planning, and site design.

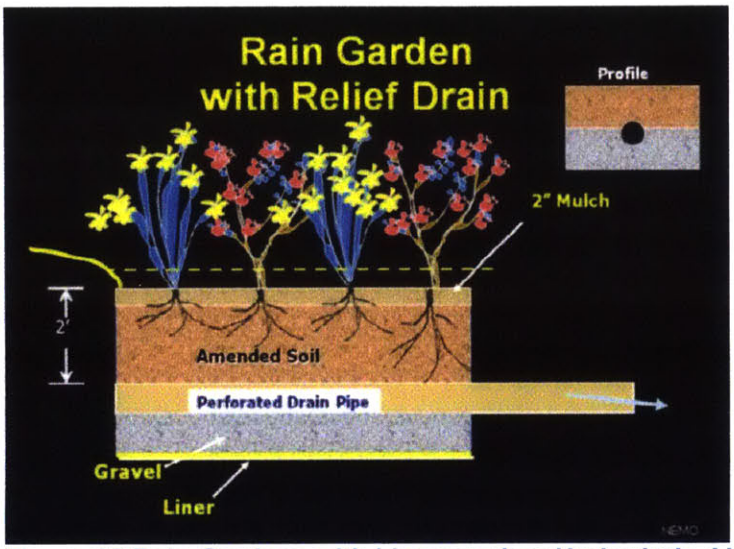

Figure 22 Rain Gardens with Liners and an Underdrain Allow Filtration and Evapotranspiration while Preventing Infiltration into Subsoils

Source: US EPA Green Infrastructure 2011 Link:
http://water.epa.gov/infrastructure/greeninfrastructure/upload/brownfield_infiltration_decision_tool.pdf)

Former Brickbottom Artist-Resident

In my role as **Former Brickbottom Artist-Resident,** my **interests** are keeping the artistic creative character of Brickbottom alive and preventing artists from being displaced in the development process. In service to those interests,

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[27] Biofiltration: a design feature that treats and filters stormwater using soil and the plants, in which some water goes back into the air through evapotranspiration, and most of the water infiltrates into the soil. Biofiltration can be accomplished using a rain garden with an impermeable liner and an underdrain or overflow pipe to convey excess water to a nearby storm sewer or point of discharge. The plants and soil perform filtration and treatment functions, some evapotranspiration will occur, and the water that is conveyed to the sewer system or receiving water is cleaned. However, the water will not infiltrate through the contaminated soil toward the groundwater.

my **concern** is that when artists start something "condos go up for $1 million and the artists are gone." (Former Brickbottom Artists-Resident) I have the following **ideas** of how my interest group could help in the project: Describing what the Brickbottom area was like before and helping imagine new development possibilities. In terms of history,

"We hated that [former waste transfer] site…and tried to get the city not to extend the lease of the plant, but we failed. Brickbottom was a wreck, filthy. The air was disgusting…we'd call the car turn-around under McGrath "scary alley." If you walked there you started coughing, your eyes were tearing, your face was dirty…that was the only way to get to Union Square. We cut a hole in the railroad fence in order to get to the supermarket." (Former Brickbottom Artists-Resident)

Helpful **next steps** for the project could include: greenhouses, places that integrate "your food right into your space," a great performance space where theatre and art can be developed and shown. We could also have restaurants in that space. "I think this proposal of making it an art and food space, growing space, is so in line with what is happening in the world right now… it could just be the best kind of solution for it." (Former Brickbottom Artists-Resident) Arts and food-based development strategies like in Brooklyn, NY could be the sort of "branding—for lack of a better term—that could happen in Brickbottom as way to keep artists alive in the community and not just turn it over to rich people when development happens." (Former Brickbottom Artists-Resident)

Collaborating University Partner

In my role as **Collaborating University Partner,** my **interests** are pursuing academic and non-academic sustainable development projects in Somerville in collaboration with communities, artists, planners, sustainability experts, and city officials. In the ARTFarm project, fostering university partnerships that help transform Brickbottom from an isolated industrial wasteland to a connected sustainable community development based on shared values of local food, environmental conscientiousness, and sustainable livable urban development. In service to those interests, my **concern** is that without sustainability thinking and community partnership with residents and artists, Brickbottom development will proceed using an unsustainable development model. The ARTFarm will probably face gentrification and "hijacking" of community interests once the development around it grows. (Collaborating University Partner) It will be up to the City of Somerville to provide oversight and not let that happen. I have the following **ideas** of how my interest group could help in the project: Concretize academic project opportunities for students to come and study the ARTFarm. "We are already interested in the project to a certain degree. We are not quite clear where we fit in, but we look at the project as a good teaching tool." I have tried to interest a number of faculty members who study urban agriculture, and the **ARTFarm Catalyst/Instigator** has talked them with extensively about developing academic relationships between this as

an applied project and universities. But I believe that they haven't really come up with any concrete examples. Helpful **next steps** for the project could include: Develop Brickbottom in a carbon neutral way; connect Brickbottom to the surrounding areas with pedestrian, bike, and public transit access; focus on how to use ARTFarm as an educational platform to positively influence the population's view on sustainability; Continue to involve artists in the planning process. Artists are absolutely important to this project because they are generally people who think outside of the box. [28] "That perspective is really valuable in sustainable development, where we have to do things differently and that involves bringing creativity and new ideas into the mix, which is what artists do well." (Collaborating University Partner)

City Planning Department Long-Range Planning Director

In my role as **City Planning Department Long-Range Planning Director**, my **interests** are to de-elevate McGrath Highway, develop Somerville's creative economy, balance short-term need to develop the ARTFarm site with eventual need to clean it up thoroughly, anticipate long-term uses for the site, fulfill Somerville's need for more public open space, and experiment with shorter-term (~2 ½ year) development options to see what "works" in terms of sparking economic growth in Brickbottom. The long-range planning division is most in favor of a mix of retail or entertainment type uses that kind of fit with that arts experience and some small-scale development. In service to those interests, my **concerns** are implementing a permanent (expensive) project on ARTFarm too early might fail to spark surrounding development and could end up being a costly mistake for the City of Somerville; de-elevating McGrath highway could take away as much as 30% of the ARTFarm parcel's land area; combining disparate development proposals into meaningful pieces of open space; deciding how to use the ARTFarm parcel to meet the city government's facilities needs (if necessary); engaging in environmental testing may result in prohibitively expensive clean up obligations. I have the following **ideas** of how my interest group could help in the project: provide a city planning perspective for the ARTFarm project organizers and consult to the project as far as how the proposals could align with the long-term view of Somerville's city plans. Helpful **next steps** for the project could include: Get the community even more involved in the process; the ARTFarm organizers provide a compelling successful short-term project that can operate just as well in the short term as in a changed mixed-use neighborhood and that can adapt to needs to happen around it; let economic development happen in Brickbottom, which will spin off its own community benefits and provides value for the investment that the state and

[28] They are people who do not approach everything from an economic perspective, which is also a very valuable trait when it comes to sustainable development. They are slightly different values from the mainstream American population. (Collaborating University Partner)

federal governments are making in the new Green Line Extension.

Ward Alderman

In my role as **Ward Alderman,** my **interests** are to maintain the "basic character" of the Brickbottom in terms of historical roots, present uses, and future development; to build on the area's eclectic, interesting, artistic character and expand into different venues like entertainment. "We've established that the Brickbottom neighborhood is unique and different, before all the redevelopment [in other areas of Somerville] Brickbottom has to keep its uniqueness…it has to be an active, interesting destination with enough flexibility that it can continually evolve." (Ward Alderman) In service to those interests, my **concerns** are how business-as-usual real estate development could compromise the character of the Brickbottom area. We don't want normal business-as-usual development activities…want to "keep it sacred." (Ward Alderman) I have the following **ideas** of how my interest group could help in the project: Advocate for the improvement of the Brickbottom neighborhood for its residents and support development that aligns with the "character" we want to preserve. Helpful **next steps** for the project could include: Improve pedestrian and other transit access to Brickbottom without the use of an overpass, and by ensuring that the Community Path gets built; address problems with pedestrian infrastructure, flooding, interconnectivity, traffic patterns, and street design in the new Brickbottom neighborhood plans.

APPENDIX C. Brickbottom Transportation and Zoning

The MBTA Green Line Extension

The Massachusetts Bay Transit Authority (MBTA) signed a $393 million construction contract for the first phase of the project in September 2013. (Goody Clancy, Carol R. Johnson Associates, et. al) At the time of writing, construction is under way. During the second phase of the project, for which the MBTA is seeking federal funding, four additional stations to the west will be developed with a target completion date of 2019. (See Figure 17)

Introduction of new transit service to the area (through the Green Line Extension and Grounding McGrath Highway) is the main impetus for the area's expected transformation. The plan states, almost preemptively, that "constrained by years of limited access and visibility, Inner Belt and Brickbottom are quickly becoming a regionally significant workplace as well as a center of community for Somerville." (Goody Clancy, Carol R. Johnson Associates, et. al) The plan focuses on investing in new buildings, streets, and public spaces, as well as removing physical barriers to connectivity that complement the planned MBTA Green Line service. The plan assumes a grounded McGrath Highway viaduct, and predicts "new, prominent address identity" for real estate development along the boulevard and proposes 4-12 story building development along the boulevard's edge, and lower (4-6 story) buildings in Brickbottom's interior streets. (Goody Clancy, Carol R. Johnson Associates, et. al)

Grounding State Route 28 / McGrath Highway and Other Transit

The elevated section of McGrath Highway between Washington Street and the Cambridge city limit, known as the McGrath Viaduct, was constructed in the 1950s to serve workers commuting from the Boston suburbs by automobile. The viaduct creates "a towering wall" between Brickbottom and the Union Square neighborhood, "denying many residents the ability to safely walk to a neighborhood school or grocery store." (Goody Clancy, Carol R. Johnson Associates, et. al) Massachusetts Department of Transportation (MassDOT) 2-year Grounding McGrath study (2011-2013) was coordinated with the City of Somerville's SomerVision process. According MassDOT, construction of a new at-grade roadway will likely begin between 2021 and 2023, creating a wide boulevard. (Goody Clancy, Carol R. Johnson Associates, et. al) (See Figure 23) The width will be partly determined by traffic patterns and streetscape design. Design of the boulevard will likely include elements from the City of Somerville's Complete Streets guide, published in 2014. [29] The conceptual plan for an Urban

[29] The City of Somerville is the first city in Massachusetts to pass a Complete Streets Ordinance designed to safely accommodate pedestrians, cyclists, public transit, and green space. The full goals of the ordinance can be viewed at: http://www.somervillebydesign.com/planning/transportation/complete-streets/.

Ring road that would connect several the Boston regional area lacks committed funding or implementation timelines, and is therefore not featured as part of this research.

Brickbottom Infrastructure Timelines

COMMUNITY PATH	ROUGH COST	FUNDING SOURCE	TIMEFRAME
Extension to Brickbottom	$15 million	TBD	2014–2017
Local connections	$1 million	Private	2016–2021
Extension to Lowell Street	$15 million	FTA New Starts	2015–2019

GROUNDING MCGRATH HIGHWAY	ROUGH COST	FUNDING SOURCE	TIMEFRAME
Interim measures	$1 million	MA T-Bond Bill	2014
Environmental	$2 million	MPO TIP	2014–2015
Design	$7 million	MPO TIP	2015–2018
Construction	$55 million	MPO TIP	2018–2022

GREEN LINE EXTENSION	ROUGH COST	FUNDING SOURCE	TIMEFRAME
Extension to Brickbottom	$300 million	MA T-Bond Bill	2014–2017
Extension to Tufts University	$800 million	FTA New Starts	2015–2019
Vehicle maintenance facility	$100 million	FTA New Starts	2015–2019

LOCAL STREET IMPROVEMENTS	ROUGH COST	FUNDING SOURCE	TIMEFRAME
Washington Street	$4 million	City G.O. Bond	2020–2024
New Washington Street	$2 million	City G.O. Bond	2016–2018
Joy Street / Chestnut Street	$1 million	City G.O. Bond	2017–2019
Linwood Street	$1 million	City G.O. Bond	2017–2019

Figure 23 Brickbottom Has a Long Time to Wait for Transportation Infrastructure Though it is Feeling the Planning Effects Presently

Source: Goody Clancy, Carol R. Johnson Associates, et. Al

APPENDIX D. Brickbottom Demographics

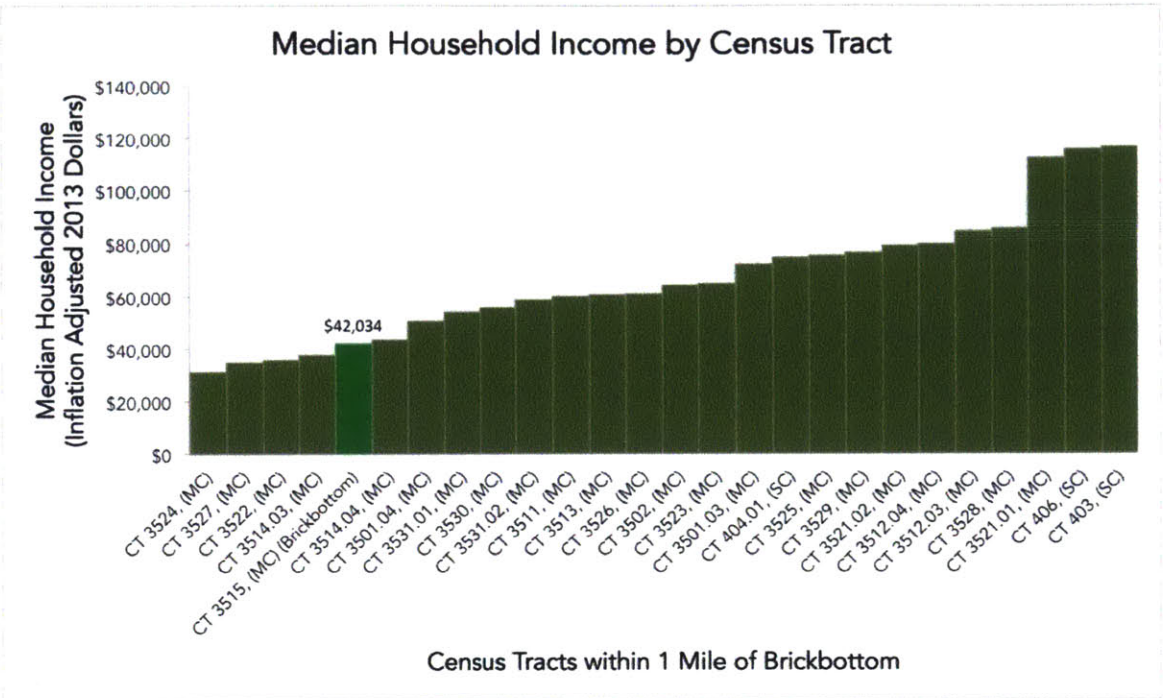

Figure 24 Brickbottom's Median Household Income is Lower than Most other Census Tracts within a 1-mile Radius of the ARTFarm

Source: American Community Survey 2013

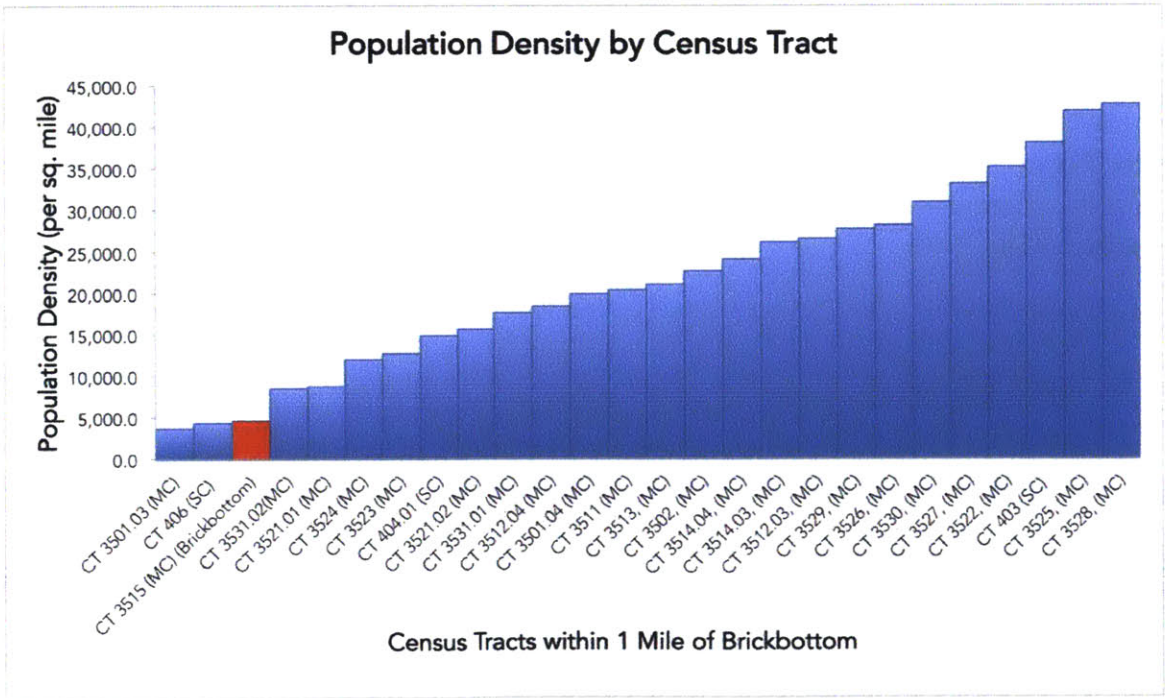

Figure 25 Brickbottom is a Sparsely Populated Former Industrial Zone

Source: American Community Survey 2013

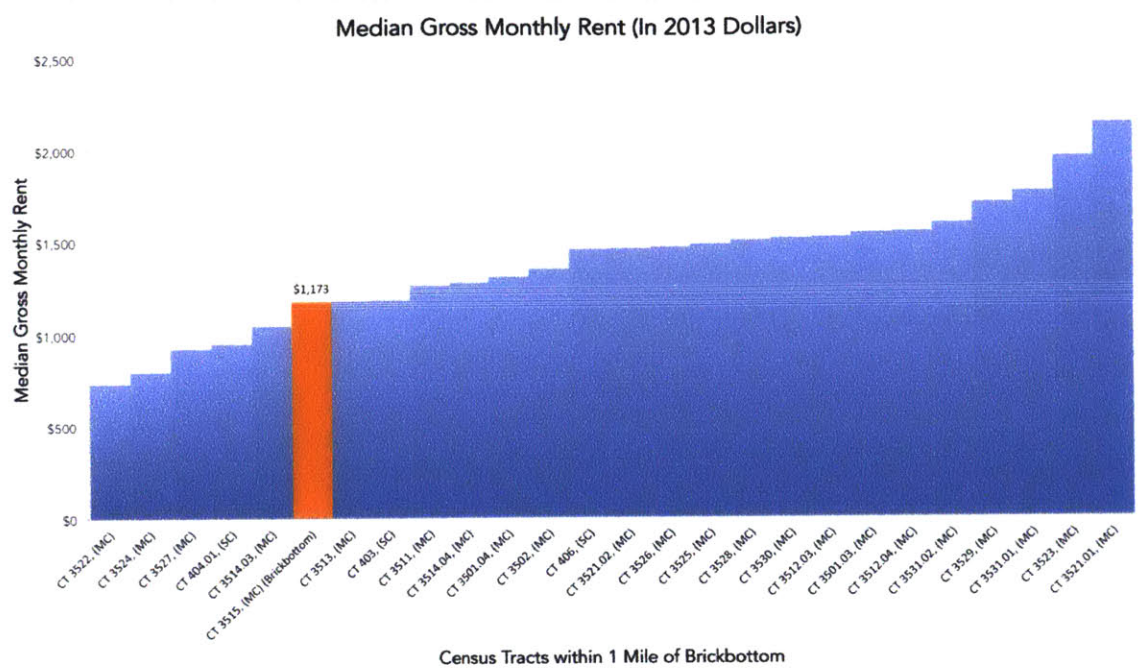

Figure 26 Rents are Relatively Inexpensive in Brickbottom For the Time Being (Pre-Green Line Extension)

Source: American Community Survey 2013

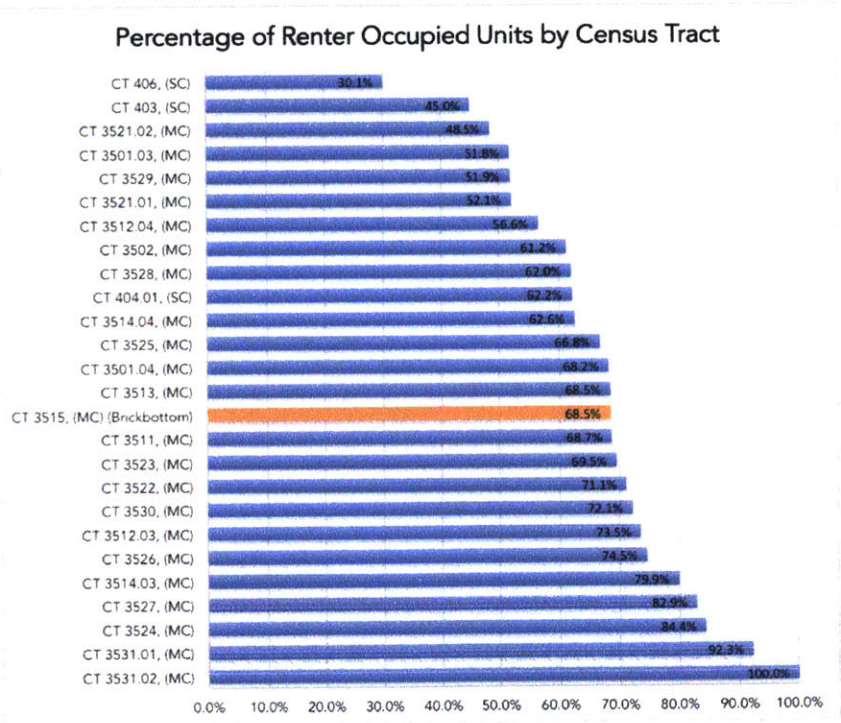

Figure 27 Over 50% of Brickbottom's 2,000+ Residents Rent their Homes

Source: American Community Survey 2013