Urban Sustainability and the Technopolitics of Order

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Dedication

This dissertation is dedicated to Elanor with the hope for a better tomorrow.

Abstract

The core question that drives this dissertation is: *how do questions of social justice fit within agendas of sustainability*? My approach is situated between two very different literatures on sustainability. The first, based in urban planning, seeks to move forward the agenda of urban sustainability. It looks to identify what works and to distill and package that best practice to be replicated in other cities around the country and the world. The second literature is one that has emerged in critical geography that sees sustainability as a policy agenda that supports the needs of a capitalist political economy, which will, in the end, amplify rather than solve the world's environmental and social problems. I argue that neither approach is properly attentive to the way that sustainability produces differential sets of capacities and limitations. In order to adequately address these, I argue that it is helpful to conceptualize sustainability as a system of socio-spatial ordering. When sustainability is adopted as a goal for a city, it begins to reshape the priorities of that city, the kinds of spaces and land-uses that occur in the city, and the types of activities that are valued and allowed in that city. It is through the analysis of the production of the socio-spatial order that we glimpse the array of possibilities and foreclosures, the inclusions and exclusions that are enabled by a sustainability agenda. Empirically, the dissertation focuses on the City of Minneapolis and its pursuit of sustainability. It explores the indicator program that defines sustainability in Minneapolis, Homegrown Minneapolis, a city program meant to build a local food economy and the City's engagement with climate change and the implications of this for sustainability.

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Chapter 1

Introduction: The Sustainable City

At the April 20, 2010 meeting of the City of Minneapolis's Environmental

Coordinating Team, a member of the Parks department stood in front of the group to

present the threat that the emerald ash borer poses to the city of Minneapolis. After

showing the devastation caused by the emerald ash borer in other cities, the Parks staff

member indicated that ash trees constitute twenty percent of Minneapolis's urban forest.

The city's tree cover had taken a serious hit from Dutch elm disease in the 1970s and

many of the elms had been replaced with ash trees, now full grown. While mitigation

efforts might slow the spread of the ash borer, the Parks staff member said the city would

most likely lose all of its ash trees. The committee began discussing the issue, asking

questions of home owner responsibility versus city responsibility for care and destruction

of diseased trees, of how to properly treat ash trees, of replacement costs for ash trees on

both public and private property. Then Gretchen Musicant, chair of the committee and

director of the Department of Health and Family Support, stood up and looked at a map

of the city. The question that needs to be asked, she said, is how the death of the city's

ash trees will differently impact different communities in the city. Which communities

will suffer effects that they can't quite deal with? She looked at the map briefly and

pointed to North Minneapolis and the Central neighborhoods. At the health department,

she told the group, we always ask how the city's poorest neighborhoods are affected by

different issues.   Until this point in the discussion, the ash borer infestation had been

portrayed as an environmental and an administrative problem. The concern was over the degree of tree loss and how to encourage residents to properly care for and deal with sick and damaged trees. Musicant turned this around and made clear that the emerald ash borer also creates challenges for equity in the city. She recognized that not only would there be an issue with the care and removal of ash trees from poorer residents' private property but that there was a possibility that these areas of the city could have a disproportionate number of vulnerable trees, thus negatively affecting the aesthetics and health of the neighborhoods for years to come.

At the Building a Local Food System One Enterprise at a Time conference on April 1, 2012, Bob Lind, from the Department of Community Planning and Economic Development (CPED), was standing in front of a crowd of local urban farmers, food activists, NGO staff and community members, describing a program the city just authorized to help businesses that work with local food obtain small loans to get them moving. Introducing himself, he talks about how he was excited about the issue, saying that he was into local foods and raised chickens in his own yard. He laid out the requirements for the program: the food had to be processed--it couldn't just be packaged farm produce; products must be processed in the city of Minneapolis; they must include at least one locally-sourced food ingredient (grown in Minnesota or within 200 miles of Minneapolis). In laying out his hopes for the program, he described how a small loan from CPED had helped another small Minneapolis startup, the Geeksquad, with an early loan and how that company went on to become a multi-million-dollar company. We'd love to see this bring about the next General Mills, he joked. In some ways the statement

seemed to be utterly at odds with what this food crowd was about. They were interested in food at the local scale, as craft producers, small farmers; they were mainly opponents of large-scale industrial agribusiness. At the same time the statement made perfect sense coming from the city. While small business is important to the city, the jobs and revenue that would come were a small business to become large is something the city assuredly would approve of. The conference where this presentation took place was about building a local food economy, and while, at first thought, local might be more associated with small-scale business, there is nothing outright that would necessarily exclude a locally based global business from a local food economy.

Both the urban forest and the local agricultural system are elements of Minneapolis's current push to make itself into a sustainable city. What both cases also reveal is that there are very different understandings of sustainability and of how food businesses and forest will contribute to it. It is easy to see the connection between trees and sustainability. They provide a green aesthetic; they provide energy saving in the summer; they are essential for clean air. The urban tree canopy cannot just be understood as the trees in the city; Musicant revealed that different parts of the city have different relationships with these trees and different abilities to handle disturbance within the urban forest, possibly leading to imbalances in the location and distribution of benefits provided by urban trees. For Musicant, it was essential to think of sustainability as comprising both the environmental and the equity logics. For other members of the committee, framing the question that way had not occurred to them. They had seen the issue as one of overall loss of trees for the city, along with its broader economic and aesthetic effects.

While the two approaches get at different aspects of sustainability, the focus on equity leads to important qualitative differences in how the problem is addressed.

The question of what a local agricultural system looks like highlights another tension within the notion of sustainability. Lind's joking reference to the hope for a new General Mills is definitely at odds with many city residents' idea of what sustainability should be. Many see sustainability as based in small-scale local supply chains that build community as well as connecting producers and consumers; coops and farmers' markets are both models for building such connections. A food business at the scale of General Mills cannot know all its producers nor connect them to consumers; even if it were locally based, it would exceed the ability to connect. However, the desire for large businesses to emerge from this city program coheres with the Mayor's vision for sustainability. He sees economic and population growth as important components of sustainability for Minneapolis. The building of a local economy, comprising small and large businesses, that connects local production with local demand, keeping resources in the community and decreasing the distance that products travel, are all knit together in his vision. Needless to say, the visions of sustainability here – the Mayor's and the local food community's – imagine growth at very different scales.

Given that there is such a broad set of goals attached to the workings of sustainability, what then is sustainability meant to accomplish? How can sustainability be achieved? How are tensions between different imaginations of sustainability mediated and to what effect? This dissertation takes on these questions and argues that answering them requires a reorientation of how we think about sustainability. It contends that rather

than just trying to understand how sustainability works as an *a priori* goal, we need to examine how sustainability is made concrete through the programs and practices of the groups that pursue it as a goal. Additionally, we need to recognize how discourses of sustainability structure the ways in which different groups are able to imagine and take up the issue. This is a dialectical process. Sustainability both shapes and is shaped by its practice. It is through this shaping that we can grasp the kinds of possibilities that can emerge around the idea of sustainability.

While the general possibilities that sustainability can produce are of interest and will be explored over the course of this dissertation, the core question that drives this dissertation is: *how do questions of social justice fit within agendas of sustainability*? I will argue that the answer to this question is always contingent. A sustainability agenda will not provide benefit for all urban residents, as some of the planning literature on sustainable cities seems to implicitly argue (e.g. Beatly 2012, Feagan 2008). Nor is sustainability work purely cooptation of environmental sensibility for the ongoing benefit of a capitalist mode of production, as several critical geographers have argued (Keil 2007, Swyngedouw 2007). Sustainability is an agenda with mixed outcomes. What is important is to be attentive to the specific possibilities and capacities that may arise in particular places at particular conjunctures. To this end, I argue that it is essential not just to see sustainability as a goal to be implemented but to look, rather, at how it serves as a means of ordering public understandings about the kinds of places and activities that are deemed proper to the city and those that are not. To get at these points, the dissertation examines how the City of Minneapolis has engaged in its sustainability work. It first

probes the question of ordering in more detail. Then it assesses how diverse elements of

the sustainability process work in different ways to enact this process of ordering. In this

regard, it begins by exploring the establishment of Minneapolis's sustainability plan

through an indicator-based approach to sustainability. Next, it analyzes Homegrown

Minneapolis, a program designed to build a local food economy in Minneapolis, to reveal

how ordering works through the establishment of new kinds of programs and initiatives.

Finally, it addresses the way that the City of Minneapolis has taken on the issue of

climate change and how this has involved a re-imagination of sustainability and the kinds

of activities that are deemed proper to the city.

Defining Sustainability

Over the last ten years, sustainability has become accepted as a best practice.

Businesses develop sustainability plans, as do governments of cities, states and nations.

Sustainability has also become an important commodity marker across different

industries: companies work to achieve and sell sustainable agriculture, sustainable forest

products, sustainable tourism. Citizens' groups mobilize around the idea of

sustainability, and many non-governmental organizations have emerged to advocate for

sustainability and provide services that will help realize it. Sustainability is one of the

dominant discourses that frame our understanding of the world today. A recent send-off

in xkcd comics entitled "The Unsustainability of Sustainability" graphs the usage of the

word sustainability in written English from 1960 into the future. If the growth in usage

of the word continues at its current rate, by 2036 we can expect to find the word once per

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page, by 2061 once per sentence and, by 2109, sustainability will be the only word used

in written English. This satirical comic raises two important points. First, it shows the

increasing acceptance and usage of the idea of sustainability as a term for thinking

through the consequences of increasing numbers of social and environmental formations

and functions. Second, it calls into question the functional utility of a term that has

become so utterly commonplace: Can sustainability continue to be a useful term if it is

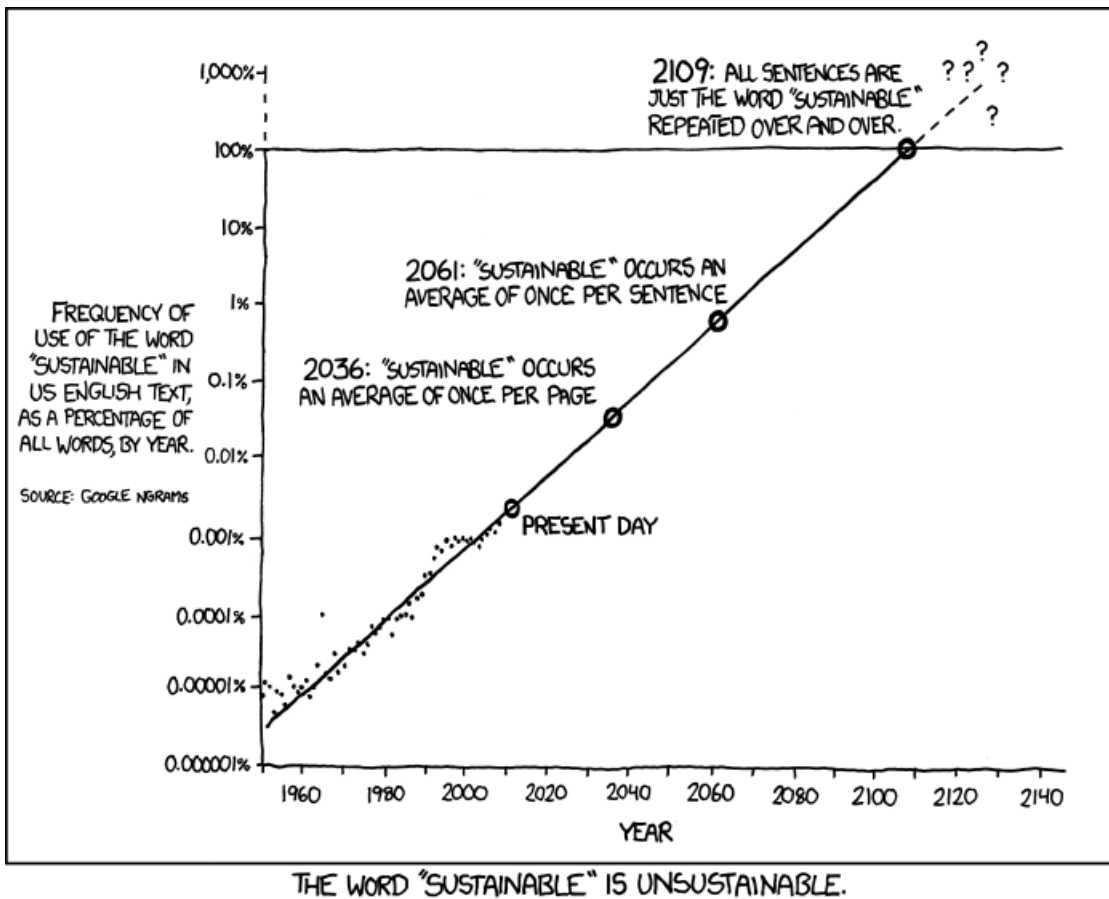deployed as a means to understand more and more phenomena?

Fig.1: xkcd Comics

With such a broad variety of organizations engaged in an even larger array of practices and policies that fall under the heading of sustainability, it is clear there must be significant elasticity in what constitutes sustainability. What is it then that holds all of these disparate ideas together? What is sustainability? It seems that there must be some set of common principles to which these different efforts must adhere that capture what lies at the heart of sustainability.

The 1987 report of the World Commission on Environment and Development of the United Nations, *Our Common Future*, also known as the Brundtland Report, posed sustainable development as the solution to the apparent contradictions between environment and development.[1] Sustainable development "is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987). This definition has been central to all the definitions of sustainability that have come since and is the most cited definition of sustainability (Gleeson and Low 2000). The WCED argues that this definition pivots around two concepts: needs and limitations.   Needs is the central concept of the definition. The definition lays out the importance for intergenerational equity--the needs of the future cannot be sacrificed for the gain of the present. The report also lays out a case for intra-generational equity, arguing that the basic needs of the world's poor must be given a

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[1] The environmental movement of the 1960s and the increasing awareness of the environmental impacts of the capitalist mode of production challenged the hegemonic idea that growth under capitalism could be limitless. The 1972 report of the Club of Rome clearly laid out the idea that the environment posed serious limits to the growth potential for capital accumulation both in terms of its waste absorption and the availability of resources. These limits were not static, but as the economy grows, it further undermines these capacities.

central position in development.[2] The second concept highlights the importance of environmental limitations. The state of social organization and technology will place strains on the environment that limit the ability to meet these needs. Conceptually, this leads to a tripartite understanding of sustainability. For needs to be met, sustainability must address economic growth, environmental quality and concerns of (social) equity: the 3 Es of sustainability.

While the 3 Es are derived from the Brundtland Report are all regularly espoused as the constitutive elements of sustainability, there is little consistency in how the relationship among the three elements is constituted in practice. Gleeson and Low (2000) identify three main approaches to sustainable development that appear in the policy and academic literature: the economic approach, the ecological approach, and the socio-cultural approach. Each of these approaches takes one of the foundational elements as its premise and builds an understanding of sustainability anchored in one of the Es.[3] The economic approach focuses on economic growth and the stabilization of natural capital; the ecological approach focuses on the stabilization of the environment; and the socio-cultural approach focuses on inter- and intra-generational equity. Most often, sustainability is seen as a means for addressing the tensions between the economy and the environment: the way that equity fits into this equation is rarely made clear. While equity is presented as equal in importance to environment and economy, in practice it is rarely

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[2] In the common uptake of the Brundtland definition, the discussion of intra-generational equity and the differential needs of present generations are often obscured. The quotable one sentence definition only discusses the needs of the present in relation to the needs of future generations. It does not discuss the differential needs of the present generations; the follow-up discussion that is not conventionally cited is where that discussion is found.

[3] While each approach mainly focuses on one element of sustainability, they generally reference all three as essential for sustainability.

given the same level of attention (Warner, 2002, Portney 2003, Pearsall and Pierce 2010).[4]

The trade-off between environment and economy has come to be classified on a spectrum of weak and strong sustainability. The question at stake here is to what degree human technological innovation can substitute for the services the environment provides (Ang and Van Passel 2012). Strong sustainability approaches are based in a logic that sees the biosphere as foundational and essential to the functioning of society and the economy. The logic of strong sustainability suggests that there are certain environmental functions that can never be replaced and that as the ongoing economic processes erode environmental quality, quality of life will also decline (Daly 1995). The outcome of this is that strong sustainability approaches advocate for environmental preservation above economic development. They see deep structural change in our economic and social lives as necessary for sustainability. Weak sustainability approaches argue that modernization and technical innovation can replace and substitute for natural resources and natural processes that support the economy (Mol 1995, Dietz and Neumayer 2007). As a result the policy prescriptions that come from a weak sustainability approach are based in economic growth and technological change (Neumayer 2010). They argue that human technological innovation can produce goods and effects that are substitutable for natural processes (ecosystem services) and the physical products of nature. As a result, the best solution in the weak sustainability framework is to push economic growth, as it will allow for increased innovation and change that will replace the services and products

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[4] There are some notable exceptions to this (i.e. Agyeman 2005, Agyeman and Evans 2005, Agyeman, Bullard and Evans 2003). They are discussed in greater detail later in the chapter.

provided by nature and allow for the ongoing expansion of quality of life. While the

main trade-off in both of these conceptualizations is between environment and economy,

equity is not absent. In the models of both strong and weak sustainability, the purpose is

to ensure quality of life for future generations; while not as prevalent as either the

economic or environmental justification, the equity logic is still present. What is lacking

is not a concern for inter-generational equity, but any discussion of intra-generational

equity. Sustainability in these models fails to meaningfully include any serious way to

conceptualize how intra-generational equity fits or is important. With no single principle

clearly dominant or definitive in the idea of sustainability, sustainable development needs

to be understood as a kind of "shifting compromise" among the three Es, though it is the

base concern for the environment that distinguishes it from previous forms of

development (Gleeson and Low 2000).

The presence of three defining principles opens up sustainability to a host of

interpretations and valuations. Swyngedouw (2007) points out that sustainability is

agreed upon by nearly everyone across the political spectrum – the World Bank, Green

Peace, George Bush, Tony Blair, the Pope, and labor unions are all in favor of

sustainability. With such a wide array of agreement among such disparate sources, can

sustainability actually mean anything at all?   Davidson (2010) provides a means to make

sense of this lack of clarity. He begins by noting that sustainability has become one of

guiding principles of the planning profession (Gunder 2006). Because of the messiness

of the definition of sustainability, there are a large number of different kinds of programs

and principles that work in the name of sustainability. The term "sustainability" has been

used to provide coherence to all of these program and principles, many of which are in tension or contradiction with one another. As such, Davidson argues, sustainability has become what Slavoj Zizek calls a 'master signifier'. What this means is that rather than being a concept with a distinct definition, with distinct indicators that are essential for its function, sustainability loses its distinct meanings to function instead as an organizing principle. As Davidson puts it, "The master signifier becomes the cause itself, losing its *necessary* qualities." There are no specific ideas, programs or principles that are *necessary* for an outcome to be called 'sustainability'. Instead, sustainability emerges as an abstract goal, compatible with nearly any kind of program or set of policies that claim intent to achieve it.

The implications of this framing are twofold, as Davidson points out. First, the lack of necessary qualities means that a large number of groups can mobilize under the banner of sustainability and work together for common cause despite differences in interests and priorities. It allows sustainability to be a point of political convergence and a driver for collaborative work. Second, many planners as a consequence have come to see sustainability more as hollow rhetoric than as a substantive goal for policy. As one of the planners Davidson interviewed put it, "it is an affirmation of existing activities rather than a guiding principle" (400). This does not lead to a rejection of sustainability. Instead, Davidson argues, even as planners are able to recognize that sustainability may not represent a shift from the status quo, they are able to work in the belief that sustainability can be transformative.

Where does this leave us? It is impossible to define sustainability monolithically. Any attempt to pin down exactly what sustainability is will fail precisely because it is defined by its lack of fixed positive content. Also, the potentials of sustainability to be transformative are clearly questionable. This doesn't mean that sustainability is unimportant. Concerns about sustainability are important drivers for public policy all around the world. Sustainability also serves as a political rallying point for progressives: as a framework for addressing both environmental and social concerns. Thus, it is imperative that we not dismiss sustainability; instead, we must reconfigure the way we ask questions about sustainability. Can sustainability lead to a world that is more socially just and more environmentally sound? The answer to this question does not depend on what sustainability is, but rather focuses on what sustainability does.

Building Sustainable Cities

What does sustainability do? This question requires that we begin to explore the various ways that sustainability is translated from an ethical ideal and a policy universal into a grounded set of practices. While there are many sites at which this could occur, cities are currently at the forefront of the development and application of sustainability policy (Cooper, Evan and Boyko 2009, Slavin 2012). The 1992 Earth Summit in Rio de Janeiro led to the development of an action plan to move sustainability forward. Central to this was Local Agenda 21, which articulated the importance of local governments as agents for sustainability. Local Agenda 21 recognized that the conditions of cities will be increasingly important for meeting the needs of the population in a rapidly urbanizing

world and that urban life contributes to the broader conditions of unsustainability. Accordingly, Agenda 21 called both for the development of programs to improve conservation of resources and the reduction of poverty; it also called for the development of better methods of measurement and analysis.

European countries and cities were early adopters and innovators of the sustainability ideal (Beatly 1999). The Aalborg charter emerged directly out of the Local Agenda 21 and was instrumental in the founding of the European Sustainable Cities and Towns campaign. The charter lays out a framework for understanding urban development and directly links standard of living to natural conditions.

> We, cities & towns, understand that the idea of sustainable development helps us to base our standard of living on the carrying capacity of nature. We seek to achieve social justice, sustainable economies, and environmental sustainability. Social justice will necessarily have to be based on economic sustainability and equity, which require environmental sustainability. Environmental sustainability means maintaining the natural capital (European Conference of Cities and Towns 1994:1).

It connects the 3Es of sustainability by situating equity concerns in the functioning of sustainable economies and economic success in the preservation of natural capital. This vision has been extraordinarily powerful in Europe. As of 2011, more than 2500 cities and towns in Europe had signed on to the Aalborg Charter and joined the ESCTC (Beatly

2012). As a result of their long-standing commitment to sustainability, European cities

have been instrumental in defining what constitutes best practice for sustainability.[5]

American cities have been much slower in the uptake of sustainability. There has

been no equivalent to the ESCTC in the United States. Much of the early adoption of

sustainability work in America was not driven by a commitment to global sustainability

but was situated in more local concerns and imperatives (Lake 2000). The last ten years

have seen increasing commitment on the part of American cities to move forward with

sustainability policy (Slavin 2012)[6]. The growth of ICLEI, an international NGO

designed to facilitate urban transitions to sustainability, and the growth of the Mayors

Conference on Climate Change both reveal an uptake of the ideals of sustainability

within the United States, particularly in the face of climate change. As of 2012, 528 local

administrative units, including towns, cities, villages and counties, had joined ICLEI, and

international membership for the organization is growing by ten percent each year (ICLEI

2012). While many of the ideas for what constitutes sustainability come from Europe,

sustainable practices do not always translate well. For example, European cities have a

very different spatial form from American cities, being much more dense and compact

than American cities; this leads to challenges in the direct application of the European

model (Beatly 2012). In fact, there is a dearth of empirical analysis on sustainability

practices in the American context (Portney 2012).

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[5] Because of longstanding European commitment, much of the literature on sustainable cities focuses on
the practices of European cities (Beatly 1999, Beatly 2012). Much of the critical literature on sustainability
is also based in the European experience (e.g. Raco 2005, While, Jonas and Gibbs 2004)
[6] The degree of commitment to sustainability is quite varied. While some cities are working to develop
means to enable comprehensive structural change that will lead to greater sustainability, others merely
include the language of sustainability in their description of operations. An expressed concern about
sustainability and even a sustainability program do not necessarily mean that cities are taking sustainability
"seriously" (Portney 2003).

The generally slow adoption of sustainability as a policy agenda in the United States has some notable exceptions. There were American cities among the 200 founding members of ICLEI and American cities that immediately took up the challenge of Local Agenda 21. Also, a number of American cities have been pursuing policies in accordance with the principles of Agenda 21 without actually naming them as such (Krueger and Agyeman 2005). Cities like Seattle, Portland, New York City, San Francisco, Minneapolis and St. Paul have all had long-term involvement in programs that would be considered to fit with the ideals of sustainability.

The increased prominence of the sustainability agenda has led cities to search out the best practice of early adopters and innovators. While innovation is occurring everywhere, city officials are especially eager for programs that already have been proven to work (Portney 2012). There is a large degree of variation in the best practice of sustainability. The structural constraints and opportunities that different cities face lead to the development of different policies and programs. The different contexts also lead to differential outcomes of sustainability programs; a transit program that improves access to low-income residents in one context can lead to increased segregation in another.

In order to develop a stronger sense of how cities are moving towards sustainability, it would be instructive to look at examples of cities that have gotten it right. This next section examines the experiences of Freiburg, Germany, Curitiba, Brazil, and Portland, Oregon. Each of these cities is considered to be a world leader in sustainability, although their success is grounded in very different contexts. The environmental conditions that each city confronts vary tremendously, from tropical Brazil

to the sunny Black Forest to the cloudy Pacific Northwest. The political-economic

contexts of each city are also extraordinarily different: Curitiba is in a developing

country, whereas Freiburg and Portland are in wealthy OECD countries. What they share

is a long-standing commitment to the environment that has laid the foundations for their

success as sustainable cities and which precedes the formal emergence of the discourse of

sustainability. This has positioned them to be leaders, who were already operating within

the conceptual universe of sustainability before it gained global popularity.

Freiburg

Freiburg is hailed as the Eco-Capital of Germany. In the early 1980s, a broad-based

citizen's movement successfully fought the construction of a nuclear power plant in the

neighboring city of Whyl. This moment is considered to be the origin of the

environmental movement in Freiburg and is cited by the city of Freiburg as an important

point in the global environmental protection movement as well (City of Freiburg 2012). It

remains essential to Freiburg's identity and the way that the city has constructed its

narrative of development. Over the last thirty years, Freiburg has consistently pursued

policies to enhance its green credentials. It has worked to build a local economy based in

green industries and green jobs and has also worked to reshape its urban space to improve

the environmental quality of the city and reduce its environmental impact. Freiburg is a

major innovator in solar technology and alternative energy. It has both installed large

quantities of alternative energy capacity and is a major employment center for the solar

industry. Transportation has also played an important role in making a greener Freiburg;

for instance, it has established a policy to put bicycles and pedestrians on equal footing

with cars (Madearis and Daseking 2012). To achieve this, it has dramatically increased

the bicycle infrastructure through the construction of bike paths and bike parking and has

increased the reach of its public transportation system. It has simultaneously put policies

in place to discourage the use of personal automobiles by limiting automobile parking

and decreasing the speed limits within the city. Freiburg has also worked to maintain and

build its green aesthetic; 46% of the urban land is categorized as environmental

conservation area. Forests, street trees, parks and allotments for urban gardens all play an

important role in shaping the look and feel of the city (City of Freiburg 2012). The

environmental agenda of Freiburg has not just been implemented by city government but

has involved the active involvement of many urban residents. Public participation has

been seen as an essential component of the city's sustainability work. As a result,

Freiburg has not pursued a green agenda at the expense of other kinds of social agendas;

it has provided social housing and social programs, worked to make public space

inclusive, and integrated disadvantaged neighborhoods into the broader sustainability

plan of the city (Mössner 2012).

Curitiba

Curitiba, Brazil, winner of the International Globe Award for Sustainable Cities in

2010, is regularly heralded as one of the best examples of a city that has done

sustainability right (McKibben 1995, Schwartz 2004). It was the coming together of two

forces that led to Curitiba's emergence as a global model for a sustainable city. First, the

military take-over of Brazil's government in the early 1960s led to a re-imagination of the function of the state. The military wanted to eliminate extremism of all sorts and leave government to a competent technocratic elite (Moore 2007).[7] Second, faced with a growing population and a fiscal crisis in the early 1970s, Curitiba's city government had to rethink urban infrastructure development and urban design. The city government needed to develop cost-effective infrastructural systems that would meet the needs of the city. Rather than look to international best practice, which was focused on expensive technological interventions, Curitiba looked for low-tech solutions and looked to rethink the way that certain other technological systems were used. The foundations of the Curitiba model were "urban development based on a preference for public transportation over the private automobile, working with the environment instead of against it, appropriate rather than high-technology solutions" (Rabinovitch and Leitman 1996).[8]

These principles have been implemented in a number of ways. Early on, the city transformed much of its central district into pedestrian- and transit-only roads. To ensure the effective connection of this district to the rest of the city, Curitiba developed a highly acclaimed bus rapid transit system. The system was built at a fraction of the cost of a light rail, which was the high-technology best practice (Cervero 1998). Green space also plays a central role in Curitiba's claims to sustainability. The city had long suffered from flooding along the Iguazu River. Rather than building expensive engineering works,

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[7]The desire for a competent technocracy was important for Curitiba, but it was the particular individuals who came to power in Curitiba that are credited with the vision for and the success of sustainability in Curitiba (Moore 2007, Rabinovitch and Leitman 1995). The lack of democracy allowed the charismatic and visionary leaders to push ahead with their vision for the city despite objections the public might have.
[8] Rabinowitch and Leitman include a fourth element to the planning model: "innovation with citizen participation in place of master planning." But this goes against the analysis of most scholars of Curitiba, who argue that the city's post-1970 development is marked by a dramatic centralized planning structure (Schwartz 2004, Moore 2007).

Curitiba's planners developed a system of parks and green space along the river that would allow for the city to function in relation to the natural cycles of the river (Moore 2007).[9] The city has developed a low-tech recycling program as well. Rather than expensive technological sorting facilities, the city has built up a system of small scale sorting done by residents who are paid in food and other necessities. This keeps the costs down, provides residents with necessary nutrition, and has led to Curitiba's having one of the highest recycling rates in the world: 70% (City of Curitiba 2012).

Much of Curitiba's success is attributed to a rather remarkable long-standing commitment of city officials to the implementation of a development plan that was crafted in the 1960s (albeit regularly updated since) and that has remained intact even as the composition of the government has changed over time. The plan, made primarily by trained architects and planners, who also happened to be the people in control of the city, was built from an integrated systems approach and was designed to guide growth and development across sectors. It recognized the complex interconnections among transportation, industry, housing, and infrastructure that were essential to the success of the city (Irazabal 2005). Because of the lack of democratic input and rule by technocrats, Curitiba has been able to enact an ongoing holistic model of planning that works to shape a Curitiba way of life (Moore 2007).

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[9] Rather than trying to channel the river and prevent floods, the clearance of the floodplain in the city and the transformation of that space into parkland created space where the river could flood and not do significant economic damage to the city.

Portland

Portland, Oregon regularly appears at the top of sustainable city rankings in the United States and has maintained the number one position in Sustainlane.org's rankings. In the early 1970s, Oregon's environmentalist governor, Tom McCall, pushed for the establishment of urban growth boundaries for all of Oregon's cities. Portland's growth boundary remains in effect and limits the degree to which the city can sprawl. The early 1970s also saw the establishment of ambitious energy policy and recycling in the form of bottle bills in Oregon that preceded such efforts in other parts of the country. This environmentalist legacy is an essential component of Portland's identity and gives rise to Portland's claims to a uniquely green way of life (Huber and Currie 2007).

Though much of the foundational environmental legislation that has shaped Portland was mandated at the state level, the city itself has worked to build on the original mandates to improve the green credentials of the city. The growth boundary has allowed Portland to focus its development efforts on dense, in-fill development (Abbott 2002). Building an effective transportation system has been an important part of this. The MAX light rail system offers large-scale coverage of Portland and many of its inner suburbs. Portland has also pursued initiatives to make it the bicycling capital of the country.[10] The city has a large network of bike-only trails and bike lanes; it has been active in developing large networks of secure bicycle parking; and it has programs to encourage bicycle commuting from the level of elementary school students to adults.

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[10] Minneapolis took the title of #1 Bicycle City in 2010, but Portland reclaimed the title it had long held in 2011(Bicycle Magazine 2012).

In addition to a high-density model of development, Portland has actively pursued its sustainability credentials in other ways. It has the most thorough and effective climate policy of any city in the country (Slavin and Snyder 2012). The city has set ambitious goals for the reduction of greenhouse gases and has been developing both short and long-terms strategies for GHG reduction. These have included incentives for transit ridership, energy efficiency and LEED construction. The city has a well-developed park system and boasts that 15% of the urban area is green space (Karlenzig et al. 2007). It has sought to mobilize its green identity to attract green businesses, eco-tourists and environmentally oriented conferences.

Planning for sustainability in Portland has been an exceptionally open process. Recognizing that inadequate public participation can lead to the overturning of planning decisions (Irazabal 2005), the city has undertaken major outreach to solicit input from residents and businesses from both the city and the metropolitan region on the priorities and goals of the city's plan. The result has been a major focus on difference and inequality in the city plan. In looking to the future, the city has worked to identify the broad set of groups that are present and the different ways that inequality operates among them as a result of race, age, dis/ability and gender differences (City of Portland 2012).

Despite their radically different contexts, there are broad commonalities among these three cities. Transportation and transport-oriented development have a central place in their urban plans, the key feature being the modal shift away from automobiles to public transport, bicycling and walking. The maintenance of green space and urban nature maintains a green aesthetic that reflects their green identities and provides

important environmental services. There is some variation in other key elements: Both

Portland and Freiburg have robust climate change programs that are meant to shift energy

consumption patterns within the cities. Freiburg has worked to develop a green economic

sector in synergy with their environmental goals. Portland is working to develop a more

locally based agricultural system. Curitiba works to develop low-tech alternatives that

can provide services at low cost.[11]

In addition to the commonalities of their policies and programs, the three cities all

identify themselves as world leaders and as models for what sustainability should look

like. Together, they have been formative in the emergence of the paradigm of sustainable

urbanism. From the experience of these and other pioneering cities, a set of ideals,

policies and programs have emerged that have come to be regarded as universal.

Sustainability is thought to transcend place: it is something that all localities can and

should embrace, and numerous guides for planning and design have emerged to instruct

cities on how they can become more sustainable (Beatley 1998, Gauzin-Muller and Favet

2002, Farr 2008,Calthorpe 2010, Lehmann 2010, Haas 2012). By the same token,

geographic differences in efforts to enact sustainability show that despite commonalities,

sustainability is not the same anywhere. As cities work to transform themselves into

sustainable cities, universal principles and practices are hybridized and altered to fit the

demands of particular places. Thus, in order to understand what sustainability does, we

need to explore how sustainability, as a universal policy form, works to order the city.

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[11] These include using parkland rather than physical infrastructure for dealing with floods, the use of sheep herds for grass maintenance in parks and a recycling program that involves food-for- labor schemes that replace sorting machines with low-income labor.

It is through the realization of sustainability policy that possibilities for environmental quality, economic development and (social) equity come into focus. While Freiberg, Curitiba and Portland are seen to be paragons of sustainability, a closer examination reveals that their sustainability work has been successful in some ways while lacking in others. In each case, the sustainability work has served to exacerbate certain forms of social inequality, marginalizing and disenfranchising the urban poor. While participation initially led to the inclusion of social programs in Freiberg, market dynamics have led to the exclusion of the poor from retrofitted social housing as it has become more desirable for middle class residents (Mossner 2012). When Curitiba chose to allow the river to flood and create open green spaces to facilitate this, it involved mass displacement of urban slums and slum dwellers to outside the city's boundaries (Moore 2007). Portland's urban growth boundary has led to dense development, but it also has driven up property values to the point that it is difficult for the urban poor to find a place in the city (Abbot 2002). This again brings up the question about how concerns for equity and justice fit within the agenda of sustainability.

Sustainability and the Possibilities for Justice

Though the Brundtland Report gives a central position to the question of need, particularly the needs of the world's poor, much of the academic work and practice surrounding sustainability overlooks or marginalizes questions of need, justice and equity. This is not surprising. The pursuit of development, for example, often pays lip service to questions of equity and need but frequently ends up reproducing and expanding

systems of exploitation and value generation that actively undermine the wellbeing of the poor. Can sustainability do better? What are the possibilities for justice and equity within a sustainability agenda?

One problem in thinking about such issues is locating the ontological status of justice and equity within the idea of sustainability. Vague declarations of the moral importance of equity explain neither how nor why equity is an essential component to sustainability. Agyeman, Bullard and Evans (2003) challenge the sidelining of social justice by arguing that attention to the outcomes of unsustainable practices, such as environmental degradation, fails to give proper due to the processes which cause these outcomes. Social inequalities are a major cause of unsustainable development, and to adequately address economic and environmental sustainability, attention must be paid to the dialectical relationship between social (in)justice and environmental (ine)quality. They argue that sustainability needs to be understood as a process that "ensure[s] a better quality of life for all, now, and into the future, in a just and equitable manner, while living within the limits of supporting ecosystems" (2003:2). Essential to this is the incorporation of environmental justice concerns into the discourse of sustainability. The field of environmental justice began by focusing on the ways that environmental 'bads' were unevenly distributed in space and tended to hurt minorities, the poor and marginal populations more often (Bickerstaff et al. 2009). More recent work has examined how structural conditions in conjunction with local policies and practices create the conditions for environmental injustice (Holifield et al. 2009). By recognizing the differential impact that environmental 'bads' have on different communities and the structural processes that

produce these, it is possible to align concerns of sustainability to those of environmental justice (Agyeman 2005). This is central to advancing an agenda of a just sustainability.[12]

Often, the sustainable city is presented as a kind of utopia. It is a space where people and nature are finally in balance, and this balance, it is held, can secure both social harmony and harmony with the environment. But, according to some scholars, utopian visions should be understood less as positive constructions of the future than a negative response to the present (Jameson 2009). This means that utopian visions do not present a clear vision of where we want to go, but instead present a vision of dissatisfaction with the present. They are recognitions of the failure of certain elements of current social organization. Fraser (2012) argues that this is an important way to understand justice as well. It is very difficult to define an ideal order that is a just order. Instead, we must start from a recognition that certain elements of the social order are unjust and work to redress those specific injustices. If we use this perspective to think about the different ways that organizations and cities approach sustainability, we can begin to explore how sustainability work doesn't necessarily represent a move to a utopian future, but instead is a piecemeal means to redress certain elements of injustice within the current order.

The task involves looking at articulations of the sustainable future and the way that organizations are working to build them. The commonplace vision of the sustainable city imagines a future in which the people walk through its tree-lined pathways, sit in its sidewalk cafes, buy local foods at its farmers' markets, and boat on its de-polluted

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[12] Justice and equity are not the same thing. However, the idea of a just sustainability is framed in ideas of both environmental and social justice. It is based in a recognition that certain forms of social and environmental inequality are unjust and need to be addressed as part of sustainability. For Agyeman and his collaborators, there is a recognition that environmental inequality and social inequality are intertwined and both need to be addressed for sustainability to happen.

waterways. The people of this city have both the time and money to engage in these leisure activities. Their work is flexible and high paying and their engagement with the city is through acts of green consumption – they eat local and organic, they buy hiking boots and kayaks, they drink fair trade coffee. The city in this vision is primarily a place of consumption, not production. Production entails pollution, which is unacceptable. There is no injustice in this vision – it is a vision of the good life for all the people. There is a fundamental problem here, however: Whose vision is this? Unsurprisingly, it is a vision based in the lives of white, bourgeois urban residents. We do not see people toiling in this vision: no people who wait tables, wash dishes, or cook at the sidewalk cafes. The cultural sensibilities that saturate this vision are also anchored in class and race; people behave properly in these public spaces, according to the regulative norms of the white middle class. Poor and otherwise lower class residents of the city who do not subscribe to these same white, bourgeois values are absent in this future. In sum, this is not necessarily a future where poverty is eliminated and justice is realized, but instead a future where the poor and the different are erased to secure the comfort of the bourgeois subject who imagines this future.

The plans and programs that cities put into place to make the sustainable city have similar limitations. In Warner's (2002) study of major cities, he found that only 33 of 77 had sustainability plans, and of these only five dealt with issues of justice. Portney's (2003) study of sustainability plans found that even when there is a place for justice within a sustainability plan, implementation does not always follow. There is disconnect between what the plan says is necessary and what actually is done. In an update of

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Portney and Warner's work, Pearsall and Pearce (2010) found that of 107 cities with sustainability plans, only 31 had any conceptual mention of issues of equity and justice and only 13 had any concrete way of addressing those same concerns.

For some scholars, the difficulty of sustainability programs in effectively addressing issues of justice is perfectly understandable. Concerns for sustainability have emerged at the same time as a major transition in the organization of capitalist production. The responsibility for sustainability has been shifted away from corporations and states and placed in the hands of local government and voluntary organizations. Despite the foundational logic of environmental limits to growth, sustainability, for many, has become a means for capitalist value generation. "Instead of throwing a wrench into the capitalist machine, sustainability subsequently gets redefined as one of the potential routes for neoliberal renewal of the capitalist accumulation process" (Keil 2007:46). Sustainability is put into practice as a spatial-institutional "fix" that can guarantee and protect the cause of ongoing and limitless growth (While et al. 2004). Enrolled as a logic that protects the interests of capital accumulation, sustainability becomes complicit in reproducing relations of exploitation. By contrast, a sustainability that actually addresses issues of justice and truly functions to protect and conserve the environment can only do so "at the expense of the capitalist system as we know it" (Keil 2007: 57).

It is not just its functionality to the capitalist mode of production that worries scholars. Swyngedouw (2007) argues that sustainability is politically harmful. His greatest concern is that the discourse of sustainability supports a broader change in

politics: the move towards what he calls a post-political era. Drawing from Zizek,

Mouffe and others, Swyngedouw identifies the post-political as the rejection of difference

and particularity in politics. Environmental politics and sustainability in particular,

according to Swyngedouw (2007, 2009), are important sites for the construction of this

post-political order. Because of the degree to which environmental politics are shaped by

expert scientific opinion, there is little room for the expression of difference around

environmental issues. "Much of the sustainability argument," he writes, "has evacuated

the politics of the possible, the radical contestation of alternative future

socioenvironmental possibilities and socionatural arrangements, and attempts to silence

the radical antagonisms and conflicts that are constitutive of our socionatural orders by

externalizing conflict" (27). As a project that everyone can agree upon, sustainability

builds a narrative of the future that cannot be rejected or contested. In the face of the

environmental challenges of the globe, only sustainability can save us. It is precisely this

imperative framing that causes Swyngedouw to reject sustainability. For him, the way

sustainability is conceptualized and politically mobilized precludes its harnessing for

progressive political purposes.

Keil's and Swyngedouw's arguments are compelling. Sustainability clearly has a

close functional relationship with neoliberal capitalism and does not necessarily

challenge the logics that govern it. Sustainability also has a capacity to subsume

difference in the name of consensus. But these problems, I argue, do not mean that

sustainability lacks the potential to improve life. Nor does it mean that sustainability

should be written off as reactionary and injurious to progressive ideals. Sustainability is

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an idea around which people continue to imagine a better environment and a more just

society. Indeed, as an idea sustainability can spur alternative visions and lifestyles that

challenge the exclusionary logics of capitalist exploitation. As a consequence, it is

essential not to discount the politics of sustainability and its equalitarian possibilities.

Instead, we must look at the ways in which these possibilities and alternatives emerge

from within the current system, even from practices otherwise designed to ensure the

reproduction of our current socio-environmental order. Leitner et al. (2007) argue that by

decentering analysis away from the hegemonic positions of power to contestations of

power, we can develop renewed understandings of possibilities for change within social

formations.[13] Empirical work on the sustainable communities movement (Agyeman

2005), the food movement (Alkon and Agyeman 2011), sustainable housing and low-

carbon transitions (Pickerill 2011) and climate justice (Adger et al. 2006) shows the wide

variety of means by which people are trying to pursue practices of sustainability that

carry broad possibilities for improving livelihoods and livability in cities. While it is

unlikely that they will – or even intend to – checkmate the capitalist mode of production,

they are nevertheless providing ordinary people practical and conceptual resources to

make a world they might wish to inhabit and sowing the seeds for longer-term structural

change.

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[13] Leitner et al. (2007) argue that the ways in which the contentious politics are theorized needs to broadened from just considering resistance, which is the direct fight between neoliberalism and its discontents, to contestation. The term "resistance" is problematic for Leitner et al. because it privileges the power of that which is being resisted; it conceives resistance as a response to power. Contestation on the other hand, needs to be thought of as a moment of articulation. It involves the presentation of alternative imaginaries and potentials that do not need to be formed as a direct resistance to power. Contestation includes direct acts of resistance, but transcends resistance. Contestation comes into being in relation to but not necessarily against neo-liberalism. Thinking about contentious politics in this way broadens our ability to think about how progressive possibilities can come about.

The way that the interests of the poor and marginalized can be addressed through sustainability work is one of the central concerns of this dissertation. I identify the ways in which the poor are erased and effaced from the discussion of sustainability, while at the same time noting how their presence serves to interrupt and unsettle the dominant narratives of what sustainability is and ought to be. Though the poor are absent, they recurrently surface to point out the failure of sustainability work to do what it says it will do, for sustainability to be what we imagine it to be. In some ways, this dissertation also effaces the poor. Justice is one of my central concerns, but over the course of my research, I did not speak to the poor and the marginalized whose interests are of interest to me. Instead, I chose to speak to the people who are most involved and invested in assembling sustainability programs. Some of these people had an interest in justice and were engaged with how their work affected justice. Others were surprised when I presented the question of how justice fits within sustainability as one of the central themes of my dissertation. Often, they would try to refer back to it but would spend most their time talking about other things, usually the environment. An engagement with justice does not require one to always work with the poor; it is important also to study the operations of the state and of groups in positions of power. The purpose of this is to understand the formation and workings of dominant logics, but also at the same time to undermine and unsettle them. Although the voices of the marginalized will not appear in my dissertation, my hope is that their presence behind the text will unsettle the narratives that I tell and question both the logics of my subjects and my understandings of these logics.

Sustainability in Minneapolis

To explore the way that universals are translated in practice, we need to explore how particular cities engage with the ideals of sustainability. In this dissertation, I focus on the city of Minneapolis, Minnesota. Minneapolis is a city with a strong history of both progressive politics and environmental consciousness. It has been a center both for political activism around labor struggles and social justice. It also has a long-standing environmental movement; the city's extensive system of parks and lakes has played a role in shaping its self-image. Different neighborhoods in the city began developing neighborhood sustainability programs in the early 1990s. Over the last 10 years, the City of Minneapolis has been actively pursuing an urban development agenda designed to transform Minneapolis into a sustainable city. The city government sees sustainability as important for pushing forward both a green agenda and a progressive social agenda, both of which are important to its citizens. While there is an active and progressive electorate in the city, it has been city council and the mayor in particular that have driven much of the sustainability work of the city (Harmon 2005). Mayor R. T. Rybak has been engaged with environmental issues since the 1980s and emphasized his green credentials on his first run for the mayor's office; since then he has worked to solidify his reputation as a "green" mayor.

In 2003, the City of Minneapolis officially adopted sustainability as a goal. While the city has definitions that it references to describe its sustainability work, the definitions are less important than the actual programs and measures put in place to make sustainability operational. For the city, "[s]ustainability is defined as meeting current

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needs without sacrificing the ability of future generations to meet their own needs by balancing environmental, economic and social (equity) concerns. In Minneapolis we are defining this as Living Green, Living Healthy and Living as a Community" (City of Minneapolis 2009a).[14] Rather than developing a comprehensive vision or definition for sustainability, Minneapolis has put in place a set of indicators that are meant to guide sustainability in the city. The Minneapolis City Council has identified 26 discrete indicators, each associated with one of three broader categories (Living Green, Living Healthy, Living as a Community), which will be used to measure progress towards sustainability. In that time, the city has also written sustainability into its master plan, its zoning code, and the business plans of its departments (Martin interview, May 2010).

Since the establishment of the sustainability program, Minneapolis has received accolades and rankings in numerous national surveys for its sustainability work. In 2011, Minneapolis surpassed Portland as the nation's number-one bike-friendly city (Bicycle Magazine 2011). Minneapolis was ranked tenth in Sustainlane.org's sustainable city 2005 rankings and moved up to seventh in its 2008 rankings. In 2012, Business Week Magazine rated Minneapolis as the twelfth- best place to live in the United States, citing

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[14] They reference the Brundtland report definition here, but this is only one definition city staff uses. Members of the sustainability office also pointed to the Natural Step program as a guide for the city's sustainability work. The Natural Step definition is based on four changes in the ways that humans interact with earth systems:

> 1) eliminate our contribution to the progressive buildup of substances extracted from the Earth's crust
> 2) eliminate our contribution to the progressive buildup of chemicals and compounds produced by society
> 3) eliminate our contribution to the progressive physical degradation and destruction of nature and natural processes and
> 4) eliminate our contribution to conditions that undermine people's capacity to meet their basic human needs (Natural Step, 2011)

its lakes and green spaces as an essential part of its quality of life. It also ranked tenth in the 2011 Economist Intelligence Unit's Green City Index. City officials themselves see Minneapolis as a national leader in sustainability; they understand the work of the city as cutting edge and see it a model for other cities. While engaging with best practices developed elsewhere, the city is actively working to shape best practice itself, making it an excellent site to study sustainability. Furthermore, the longstanding environmental and social concerns that have defined the politics of the city make it an important site for exploring how these issues come together within the sustainability agenda.

Making Sustainability a Priority in Minneapolis

In 2003, the Minneapolis City Council adopted council resolution 2003R-133, which made sustainability a direct goal of the city. The resolution lays out the multiple ways that the city has demonstrated its long-term commitment to the environment, i.e., its engagement with smart growth and conservation, its advocacy for emissions reduction, its highly successful brownfields reclamation program, and its work on parks and open space. Stemming from this commitment, the council issued a directive for city staff to develop and implement a sustainability plan that would establish "a more sustainable future" for the City of Minneapolis. In addition to the drafting of a sustainability plan, the resolution directed staff to develop a program of indicators for monitoring sustainability in the city and to find ways to incorporate sustainability work into the strategic plan, the zoning code, and the fabric of the city's decision-making process. The goal was to make sustainability a priority throughout the work of the city.

The vision for a sustainable future as presented by council resolution 2003R-133

is interesting in that, while the context for the vision was nearly entirely environmental –

it is the environmental achievements of the city that are laid out, and it is the

environmental work of the city that is to be incorporated into the decision-making

process – the content of the vision as stated focused nearly entirely on social and political

outcomes. The resolution defines sustainability in the Brundtland framework of

economy, environment and equity (including social justice), but the only specific

elements of the vision for the future city that the resolution presents are "stronger social

connections and neighborhoods, greater social wealth and equity, local self-reliance, and

more transparent accountability among residents and civic leaders" (City of Minneapolis

2003). This disconnect leaves open the question of what sustainability could and should

do. How should these different foci be actualized in the establishment of the plan? In

some ways, it seems inappropriate to read too much into the specific wording of any

given city council resolution; at the same time, this resolution provides the instructions

for how sustainability is to be addressed.[15]

The concern for sustainability in city government emerged from a broader interest

within the city as a whole. The city has a long history of environmental awareness:

residents were concerned about and active around issues of sustainability, so city

councilors took notice. In 2004, two citywide roundtable discussions of sustainability

were held at the Alliance for Sustainability's yearly conference with the purpose of

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[15] In conversations with both city staff members and members of the Citizen's Environmental Advisory
Committee (CEAC, the citizen group responsible for advising the city on sustainability), it was clear that
environment was the larger concern. The city publishes the environmental section of the sustainability
report before it publishes the report as a whole because that is what people who read the report are most
interesting in looking at (Mathiowetz interview June 17, 2010)

developing a set of indicators that the city could use to guide its sustainability work.

Between the two sessions, one hundred city residents participated in debating and in the

end settling on a set of indicators that they saw as important for guiding the city's work

on sustainability[16]. The outcome was a report entitled "Fifty-Year Vision and

Sustainability Indicators for a Sustainable Minneapolis," which laid out thirteen visions

for a sustainable Minneapolis, thirty core indicators and 113 background indicators that

would together provide the city with a comprehensive approach to its sustainability

work.[17]

In 2005, the City Council adopted council resolutions 2005R-251 and 2005R-252.

Resolution 2005R-252 gave formal thanks to participants in the process. Resolution

2005R-251 acknowledged the report of the roundtables and proclaimed, "That the City

will measure its progress toward achieving this vision [the fifty-year vision mentioned in

the title] by defining a slate of sustainability indicators for their business planning

process." The panel of indicators stipulated in the report were to be the starting point for

the city's own process. In 2005, the city adopted twenty-four indicators, many but not all

of them coming from the report of the citizens' roundtables. Over the course of the next

six years, the city continued to work on developing and refining its indicators. In

addition, it incorporated sustainability goals into its master plans, into the business plans

of city departments, and into the zoning code.

How does a city move from its initial interest in sustainability to the particular

initiative that it establishes? There are multiple ways that cities can conceptualize

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[16] The content of the Citizen Round table reports will be discussed in greater detail later in the chapter.
[17] For more detail on the outcomes of the roundtables, please see the discussion of the Crossroads Resource Center's '50 Year Vision for A Sustainable Minneapolis'.

sustainability. There are different ways that it can be incorporated into the structure of the

government. There are different projects and initiatives that can move sustainability

forward. All of these pivot on the adoption of sustainability as a system of order. This in

turn involves measuring the city, making it legible as a socio-environmental entity, and

manipulating the urban fabric to bring the city into conformity with the vision of

sustainability. The main empirical question of this chapter is: how has the city of

Minneapolis established sustainability as a form of ordering? By analyzing the

operationalization of sustainability as a system of order, I explore the potential and

limitations of the city's sustainability agenda as a means of balancing considerations of

economy, equity and environment.

Architecture of the Dissertation

        In his book *Sustainability in America's Cities* (2012), Matthew Slavin argues that

there is a lack of empirical analyses of sustainability programs in the American context. I

would argue, further, that there is also a lack of critical work on sustainability in the

United States. Much of the work on sustainability assumes that sustainability is what it is

claimed to be and overlooks the implicit systems of value that underpin the imagination

and practice of sustainability. In this dissertation, which is an evaluation of one city's

implementation of sustainability, I seek to address both of these lacunae. I attempt here

to provide an analysis of how the City of Minneapolis has chosen to implement

sustainability and the potentials and shortcomings of that effort. At a second level, I aim

to provide a more critical understanding of the work that sustainability does.

Sustainability is not a principle that exists outside the realm of politics; it does not

provide universal benefit. Sustainability is a political project that orders the distribution

of benefits within the city. In looking how sustainability is constituted as a system of

order and how it shapes spaces, populations, and imaginations of the city, we can begin to

see both the limitations of urban sustainability initiatives and their potential for

improving livability for urban residents.

The question of how concerns for justice and equity fit into agendas of

sustainability drives my work. To get at these issues, I explore the openings and

capacities that sustainability produces as well as the foreclosures it enacts. There are two

main arguments that I make in relation to these. First, I argue that how we study

sustainability is important. Sustainability needs to be understood as more than just a set

of policies, programs and goals; it needs to be understood as a process of socio-spatial

ordering. When sustainability is adopted as a goal for a city, it begins to reshape the

priorities of that city, the kinds of spaces and land-uses that occur in the city, and the

types of activities that are valued and allowed in that city.[18] It is through the analysis of

the production of the socio-spatial order that we glimpse the array of possibilities and

foreclosures, the inclusions and exclusions that are enabled by a sustainability agenda.[19]

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[18] It is essential to underscore that sustainability is never the only system of order and does not determine all that goes on it the city. It has a partial and limited effect on what the city is and will become.

[19] The production of this order is a result of both a set of institutionally located human actors working to make sustainability happen and a set of non-human actants that facilitate the work of these human actors. At the level of the city government, sustainability has been a project that the Mayor has been actively pressing. City Council has also played a large role, though some councilpersons have been more engaged with sustainability than others. Across the city bureaucracy, there are city staffers who are working to move sustainability forward; some like the Directory of Sustainability have the specific task of making it happen, while others are pushing the city's work forward through their normal duties. The environmental coordinating team is a meeting of department heads from across city government who work to advise city council and coordinate between departments on environmental policy. The city partners with citizens and with local groups to help facilitate the work as well. The Citizen's Environmental Advisory Committee, composed of volunteers appointed by the mayor, advises both city council and the ECT on questions of environment and sustainability. The city also partners with NGOs that are engaged in relevant

Second, I argue that sustainability is neither a panacea for the environmental woes of the world, nor is it a useless (or harmful) fiction; neither boosters nor detractors of sustainability approach it with enough nuance. Sustainability produces both positive and negative effects. It can serve to eliminate political discussion, and it can be an issue through which people make political demands. At a broad theoretical level, sustainability offers a utopian vision of what the world can and should be. It is a promise of life, livelihood and environmental quality for all people. While this promise is never fulfilled, it can unleash demands for the world that sustainability conjures.

Chapter 2, *Ordering Sustainability*, lays out the theoretical framework that underpins the dissertation. The chapter undertakes four tasks. First, it provides a means to think about how a policy universal is translated into a concrete set of policies and practices in a particular place. Second, it lays out the claim that and the explanation of why sustainability should be understood as a process of ordering. Next, it takes two cuts at how ordering works. The first of these argues that the possibilities emerging from sustainability need to be understood as a result of the way that sustainability brings together people with a set of technological interventions meant to produce the sustainable city. Drawing on actor-network theory, it makes the claim that the potentials of sustainability emerge from the way that differently positioned humans and things are brought together as an assemblage. The second cut into the ordering process, the

environmental work. The work of all of these groups is shaped and facilitated by the indicator program that has been put in place. It is not merely a document that guides sustainability work, rather it serves as an active player in shaping what is done, what is possible, and what needs to be addressed: thus, it operates as an actant rather than just a (passive) tool.

approach I embrace as the main theoretical framework for this dissertation, relies on Jacques Ranciere's concept of the 'police'. I argue that as a system of order, or 'police' as Ranciere terms it, sustainability serves to put people and activities into their proper places. The possibilities for justice within sustainability emerge in the political moment, when those people and groups that have no place within the socio-spatial order – the part with no part, as Ranciere calls them – make demands for positions that do not exist within that order. In the act of exclusion, sustainability opens up the possibilities for disruption through which demands for justice can be made.

Chapter 3, *Measuring Sustainability,* delves into the indicator program used by the city of Minneapolis. Measurement is a central element in the making of order; it is through measurement that the city becomes legible and amenable to manipulation. The chapter looks at the way that the broad panel of indicators establishes a grid of legibility that makes certain elements of urban activity important for sustainability. Focus on the broader indicator program does not tell the whole story, however. Different indicators are valued differently by city politicians, groups of residents and city staff; and some are sites of major activity while others are less so. The chapter evaluates how the measurement and activity associated with specific indicators are important in shaping how sustainability informs the ordering of urban space and urban populations.

Chapter 4, *Making Sustainability*, examines the Homegrown Minneapolis program. Homegrown is one of the main new policy efforts designed to make sustainability happen. It is an effort to build a local food economy in the city of Minneapolis. There is a large degree of tension in the framing of the Homegrown

program between people who see its primary purpose as an environmentally motivated effort to build a local economy and those who see Homegrown as a means to work to improve food security and access to healthy food to lower income residents in the city.

Chapter 5, *Imagining Sustainability,* argues that climate change has fundamentally altered the understanding of sustainability. The apocalyptic potential of the climate future demands intervention in the present. Two main approaches to intervention are currently in operation. The first is a preventive framework of action that attempts to maintain the current system of order; this approach, based in traditional concepts of sustainability, seeks to sustain the present state of things. The second framework, based on an understanding that climate change is already here and is unstoppable, argues that we must build resilience to potential climates futures into the operation and structure of our cities. The move from a form of sustainability that primarily attempts to maintain the current socio-environmental status quo to one that tries to shape a formation that will be adequate to the emerging climatic future alters the way that sustainability works as a system of order. The ordering that occurs in the name of 'resilience' distributes costs and benefits in ways different than an effort mainly directed at maintaining the status quo. While Minneapolis has begun to address the need for resilience, most of its work on climate change focuses on the effort to avert change rather than to live with it.

Chapter 2

Ordering Sustainable Cities

IB: Can you talk about how the social indicators work?

DS: Well, I think that certainly from a citizen's perspective before I came to the council there was a sense that sustainability seemed to mean the quarantining of social conditions which could be considered to be infectious. Meaning the quarantining of poverty, the quarantining of crime and drugs; that there was a part of the community that required the absence of these things to be sustainable and there was another part in which those factors were part of the [un]sustainability of that community. There was a kind of sustaining of non-livability because that's what those communities were comfortable with, or those communities could cope with those hardships and so if those people got to a point where they could afford to extricate themselves or where they socially became overwhelmed, then they would move to the other kind of sustainability physically. And so when I came, I saw as part of my job as a Northside councilmember was to articulate the discomfort. We can't deal with it. There is too much pain. We can't survive. We're not the tough, rugged individuals who can cope with and absorb the sound of gunshots without trauma. Our children are scared and we are afraid and we are wanting to change rather than wanting to move. (Interview with Councilmember Don Samuels, Minneapolis 5th Ward, June 24, 2010)

In this statement, Councilmember Don Samuels of the 5th Ward of Minneapolis,[20] articulates his understanding of sustainability before he came into office. The vision is of a city divided. There is a portion of the city where sustainability means wealth, health, and functionality and another segment of the city where sustainability means poverty, crime and drugs. These two segments are connected through the ways that sustainability quarantines certain social conditions that are inimical. In a subsequent discussion he says that as a counselor he has come to learn more about environmental sustainability and

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[20] The Minneapolis 5th Ward covers a section of the North side of Minneapolis. This district is one of the poorest in the city and is characterized by a primarily African-American population.

realize that it is an important and valuable part of what the city does; and that in terms of social sustainability he has seen an increasing commitment on the part of the council and the mayor towards the "humanity of the Northside community." While he told me that his feelings about sustainability had changed since he has been on the council, the geographic relationship he foregrounds between sustainability and unsustainability raises important questions about what sustainability does and how it shapes the city.

The commonplace imagination of the sustainable city, as I observed in the introduction, does not include poor neighborhoods; it does not include working-class livelihoods; it does not include crime and drugs. Where do these activities and spaces fit within the sustainable city? Most proponents would argue that sustainability is meant to reshape the city so that the benefits of sustainability are extended to all residents. This is a utopian vision, but that does not mean it is without merit (Sargent 2006). Utopian imagination can provide important momentum towards progress. The problem is that the utopia cannot account for the city as a whole. Samuels' statement presents a different story: one in which sustainability works because particular parts of the city are erased and forgotten. The city becomes sustainable because certain areas and certain people do not count. The potential for sustainability is predicated on partitioning the city and quarantining segments that deviate from the logics of sustainability. I contend that the spaces of unsustainability are not external to sustainability but are produced by the very logics that produce the sustainable city. Universals, such as sustainability, cannot fully account for the world and as a result must be able to segregate and elide that which they which does not fit within their narrative of the world.

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In his work as city councilperson, Samuels saw it as his job to address the social conditions of North Minneapolis. While he originally saw sustainability as a source of these problems, he later began to see in sustainability the potential to talk about and address them. In short, in thinking about what the potentials are for agendas of sustainability, we need to begin to examine both their constitutive exclusions and the ways that they might be able to address different forms of social and environmental problems. As I argue in the introduction this requires attention to what sustainability does. We need to examine how sustainability moves from being an abstract goal and policy universal to a set of interventions meant to make the sustainable city.

In order to grasp how this works, I argue in this chapter that sustainability needs to be theorized as a process of socio-spatial ordering. In thinking about sustainability as a system of order, we look at more than just how a set of policies and programs are established. We analyze how the goal of sustainability, through the program and policies that make it, begins to transform both our thinking about what the city is and should be and also the physical fabric of the city. As a system of order, sustainability frames certain kinds of spaces, certain kinds of activities and certain kinds of people as worthy of belonging to the socio-spatial order. There are things that a sustainable city does and certain kinds of people that occupy that city. Conversely, there are certain places, activities and people that do not fit within the logic of the order of the sustainable city. They must be transformed, removed or effaced. In unpacking how sustainability works as a system of order and how that order is inscribed in space, we can explore the inclusions and exclusions that are constitutive of sustainable urbanism.

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Translating Sustainability

With cities around the world adopting the principles of sustainable urbanism, sustainability has begun to operate as a policy universal. As a universal, it is seen to transcend place and to function as a value and a set of practices that are applicable and valid everywhere. However, as scholars of difference have reminded us, all universals are produced and have a provenance. Ideals and values we regard as universal emerge in particular places and at particular times; they achieve traction through the interaction of the local and global, in the encounter of particularity with that which desires universality. As Anna Tsing puts it, universals are "enacted in the sticky materiality of practical encounters" (Tsing, 2005: 1). Or, to view it another way, "policy universals, which appear as rational abstractions separate from the social order they govern (as the rule of law, private property or the economy) can be shown to be historically grounded in particular interests and events, contingencies, violence and exclusions" (Mosse, 2006: 61). Sustainability is never the same anywhere. As different localities take up the ideals of sustainable urbanism, they translate them to fit the particular contexts of those localities. Sustainable urbanism is adopted precisely because particular groups see them as important and benefit from them.

Universality, by definition, assumes a total accounting of the world; it cannot admit its failure to exhaust the world. Because the world exceeds the neat categories that universals mandate, claims of universality require constant work. In order to function, universals must exclude that which they cannot account for, anomalies that do not fit within their structural logic. For example, in his exploration of the emergence of the

modern state form in colonial India, Sivaramakrishnan (1999) identifies zones of anomaly where the rationalities of state do not function. These are places within the territories ruled by the state where norms and laws do not apply or apply only in exceptional forms – in short, areas that are illegible to the state, unmeasured and unknown, and as such beyond the pale of normal rule. The state form is assumed to be universal and to account for the totality of the territory that it rules. But if this is the case, how can we account for these zones of anomaly? Rather than contradicting the claims of the state form to universality, the zones of anomaly allow for the exception to the rule to be present within the structural logic of the state. The exclusion of that which cannot be accounted for is the device that allows the universal to achieve closure, to make sense of its claims on its own terms.

This raises very important questions about the logic of sustainability. It demonstrates a need to explore the socio-spatial exclusions that are necessary to make the sustainable city. As a universal, sustainability cannot account for everything: it must exclude what it cannot account for. What then are the erasures and elisions that underpin the sustainable city? Who gets left out? The answer to this lies in how particular places take on the universal of sustainability and put it into practice.

Sustainable urbanism is a policy paradigm composed both of ethical statements and sets of policies. In pursuing sustainability, cities must choose which ethical elements and which policy practices are best for them. To do this, they look at the best practices of sustainability work that have emerged around the world and work to translate them into approaches that will work in their own contexts. Traditional approaches in political

science see these policy transfers as the outcome of the optimizing behavior of the rational policy-maker. This approach sees the world as a marketplace of policies that can be rationally evaluated in terms of their relative likelihood for success. The rational policy maker then selects the policies that are most likely to succeed. In this framework, the understanding is that bad policies will be eliminated because policies are judged and adopted based on their inherent, objective merit. Peck and Theodore (2012) argue that we need to move away from this traditional policy transfer approach to an approach based in the understanding of policy mobility and mutation. This different conceptualization is "attentive to the *constitutive* socio-spatial context of policy-making activities and to the hybrid mutations of policy techniques and practices across dynamized institutional landscapes" (ibid: 724). In other words, it doesn't see policies as coherent wholes that move unchanged from one place to another but, instead, is attentive to policies as bundles of techniques and practices that are re-made and re-imagined as they are implemented in diverse settings.

Thus, particular places do not take on the whole of sustainable urbanism. Even when cities see value in them, both ideals and policies need to be adapted to the prospective context of their adoption. As Peck and Theodore argue elsewhere: "Mobile policies rarely travel as complete `packages', they move in bits and pieces as selective discourses, inchoate ideas, and synthesized models and they therefore arrive not as replicas but as policies already-in-transformation" (2010: 170). What may seem at first like a universal policy position is frequently a patchwork adoption that meets the needs of particular groups in particular places. It is to particular places, then, that we must turn to

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begin to explore what sustainability does. It is important to recognize that, as a universal, sustainability is more than just a set of policies that places pick and choose and remake. As a universal policy regime, sustainability provides a framework through which the city is reimagined and re-ordered. Cities do pick and choose the elements of policy that work best for them, but these choices are constrained by the logics and ethical framework of the broader policy regime of sustainability. While the practice of cities can, at times, expand and inform the broader idea of sustainability, most of the choices cities make about sustainability come from the existing canon of sustainability principles and practices. In this way, sustainability becomes a means of ordering the city. It both shapes the form of the city and the imagination of what it should be.

Ordering the City

One of the main arguments of this dissertation is that it is fruitful to approach sustainability as a socio-natural ordering of things. Sustainability is an attempt to bring our social lives into alignment with nature, to right the imbalances and environmental destruction that are foundational to our economic lives. The sustainable city seeks to enact a proper balance between the city's economic functions and its environmental impacts so as to make a more perfect urban society.[21] Through a constellation of discourses, institutions, policies and programs, sustainability strives to shape urban space, socio-environmental processes and subjectivities. It provides a new framework for evaluating which kind of people, practices and spaces belong in the city and which do

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[21] The use of the term perfect here is intentional. It is meant to capture the progressive dream of modernity, the idea that the world is perfectible.

not. By examining the way that the idea of sustainability orders urban space and society we can begin to understand what sustainability actually makes possible.

How then do we begin to think about the functioning of systems of order? Law (1994) argues that there are three elements to understanding social order. First, there never is an order as such. Order is never a finished project; it is an ongoing and incomplete process of becoming order—of ordering. Ordering is an attempt to put all people and all things in their proper place. But because both people and things move and notions of their proper place shift, order can never achieve closure. Ordering must constantly change to accommodate new ideas, subjects, technologies and relationships, as well as political claims made against the order. Second, ordering is never monolithic or singular. There are myriad ways in which the world can be ordered and shaped. Ordering processes at times operate distinctly from one another, but at times in proximity or overlap, with different orderings occupying the same space-time. This is particularly important for thinking about sustainable urbanism. While cities have chosen to pursue sustainability and sustainability does order cities, it is but one of multiple systems of ordering at work. This forces us to think about how the logics of sustainability articulate with other logics that seek to order the city. The final element necessary for understanding a social order is that the social is composed of more than just humans and human intention. The social is made up of people, words, technologies, things, and architecture; it is "materially heterogeneous." Technologies, for instance, are not just instruments of human will; they play active and constitutive roles in shaping the social

order.[22] This means that how a city chooses to make sustainability happen is just as important as what it thinks sustainability is.

Sustainability is far from the first or only attempt to order urban life. Ordering is an important element of the modernist dream (Law 1994).[23] Within this modernist vision, social problems are viewed as symptomatic of a disordered existence. By ordering the world properly and bringing people into proper relationship with their environment, the expectation is that social problems will disappear and society will function better.[24] Thus, the discipline of urban planning emerged as an attempt to produce order in the city. Early planners saw the industrial city as both socially unstable and environmentally degraded. The application of order to the city, and the re-establishment of proper connection between man and nature, was seen as necessary for the establishment of social harmony (Boyer 1983). The health hazards that come from overcrowding and the perceived dangers of socialism to the proper hierarchy of the city, both outcomes of the emergence of the industrial city, were the initial concerns that urban planning was meant to address – each threatened to endanger the prevailing social order. The built form of the city was seen as tied to the amalgam of social relations that existed in the city. Through the manipulation of the urban environment, early planners and reformers sought to remake the social order of the city.[25] While urban conditions have changed dramatically

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[22] I cover the idea of technology in more detail in the next section.

[23] The shift to the management of society, the economy and life that has marked our modern political organization since the 16th century has been an ongoing attempt to order the world (Law 1994).

[24] This is a progressivist understanding of the world. While the final goal of a perfect society is the (unattainable) goal, there is the assumption that each re-ordering will bring us closer to the perfect society where everything is in its proper place and works perfectly.

[25] Construction of public parks (Gandy 2002), public architecture (Boyer 1983), and of sewage and water infrastructure (Gandy 1999, Illich 1985, Melosi 2001) all were attempts to use spatial strategies to improve both the physical and mental conditions of the lower classes.

since the late 19th century, the search for a system of order that allows the city to operate smoothly, efficiently and effectively remains at the heart of the planning discipline. The ordering of the early modern city was a project meant to ensure the proper running of the city for particular groups and interests. While ordering is often done in the name of the body politic, and the broader functionality of the city, the order in question benefited urban elites much more than it benefited the urban masses it was meant to control. Sustainability has emerged as a new attempt to shape the socio-natural relations of the city. Similar to earlier systems of order, the order that sustainability works to create privileges particular subjects, practices and spaces within the city. Sustainability, in short, is not a neutral attempt to build a better society; rather it is a political project meant to shape the city according to the ideas, imaginations and interests of particular groups.

While Law (1994) recognizes that there is a political dimension to the production of the social order, the politics of ordering are not his main question. He focuses more on the processes through which ordering works. How then do we address the politics of ordering? There are two disparate approaches to the question of politics that I find helpful for thinking through this question. Ontologically they are quite different and rather than synthesize them, I use them to take two different cuts into the issue at hand. Each allows different questions to be asked. The first approach foregrounds a more-than-human politics. Law's understanding of the social order as materially heterogeneous is based in actor network theory (ANT). ANT scholarship argues the material world is not just the backdrop to politics, but is constitutive of the social and the political. The capacities and possibilities of different social groups are a result of the differential relationships of

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humans and non-humans. Ordering is the process through which humans and non-humans are enrolled into relationship with one another and so it is through ordering that we can begin to explore the different political possibilities that emerge from the socio-natural relations that sustainability assembles.

The second approach is based in the political philosophy of Jacques Ranciere. Ranciere's ontology of politics focuses on the relationship of order and disorder. The city is structured through the production and reproduction of social hierarchy. The potential for politics emerges through the unsettling and disordering of the social order through claims made on the city by those subjects who are excluded by an existing order or partitioning of the city.   This framework allows us to think more nimbly about the constitutive exclusions that are essential to the making of order and the way that they serve to disrupt the logics and functions of order.

Politics of Ordering 1: Technologies of Power

In asking what sustainability does, rather than what sustainability is, I call attention to the means by which sustainability is implemented and put into practice through a variety of technical measures. What I argue is that the choice of technology matters and has implications for what kinds of possibilities can emerge from the pursuit of sustainability. Technology in this sense does not just refer to physical objects as such but also incorporates a variety of physical and social programs meant to address the different elements of sustainability. These are what Rose and Miller (1992) describe as technologies of government, "the complex of mundane programs, calculations,

techniques, apparatuses, documents and procedures through which authorities seek to embody and give effect to governmental ambitions" (175). These technologies include the means by which problems are measured and brought into focus, as well as the various means by which these problems are then acted upon.

How does technology matter to politics? Winner (1986) argues that while we often consider technology to be neutral, certain technologies work better in different systems of management and rule; some work better in democratic systems, others in autocratic. Technology, then, has an important role in shaping how politics operates within the social realm: "The issues that divide or unite people in society are settled not only in the institutions and practices of politics proper, but also, and less obviously, in tangible arrangements of steel and concrete, wires and transistors, nuts and bolts" (31). We need to push this insight further. Technology needs to be understood as a coequal in shaping the social and political realms; it is not important just as an object in the hands of human intention. Actor network theory provides an important means to address this.

Within this approach "objects are suddenly highlighted not only as being full-blown actors, but also as what explains the contrasted landscape we started with, the over-arching powers of society, the huge asymmetries, the crushing exercise of power" (Latour 2005: 72). To put this differently, we can better understand power relations when we think of power not as a human attribute but something that emerges through the ways in which humans and non-humans are differently situated in relation to one another: through the way that they come to form a collectivity. Power in this sense is not merely a matter of force; it needs to be understood as the field of possible actions opened up

through the assembling of a collective of human and non-human. The narrative of collectivity provides an important intervention for understanding inequality and human capacity. Differential capacities emerge, in part, due to the differential access that people have to different technologies, and the different qualities of objects. Carrying this insight to the process of urbanization and urban politics, we are presented with the importance of thinking how the rationalities of urban governance and the technologies of urban rule produce particular constellations of people and things, which in turn endow differently situated people and groups different capacities to act. This is not just a question of capacity emerging from abstract relationships: the interventions of planners, engineers and other urban actors are designed precisely to change the relationships of people to each other and to urban landscapes in order to engender certain capacities and possibilities.

Both technology and technical knowledge have long been seen as ontologically separate and removed from the realm of politics. This has had significant consequences for conceptualizing the actions of government and the ability of city managers to understand the broader political implications of their work. In the late 19th century city politicians had visions for what the city would do and how it would look and function. But financial and technical constraints led to the rise of the importance of the municipal engineer and the city bureaucrat, who approached the operations and the fabric of the city as a technical problem: a rational object of intervention that was separable from the realm of politics (Melosi 2001, Shumsky 1996). This de-politicization of technology and policy ignores the way in which they are formative of social and political relations. The veneer

of objectivity provided by cost-benefit analysis, policy analysis and engineering science as tools to optimize city government elides the question of "optimal for whom?". Thus, questions of a moral economy and the rights of all residents of the city are sidelined in favor of a "best practice" that is built to meet the needs of elite portions of urban society. This ongoing separation of technology from politics serves to reinforce unequal access and the unequal power relations produced by it. The normative framework that determines which technical questions are asked and how they are asked has implications for who benefits and in what way from the adoption and implementation of particular policies.

Environmental policy tends to operate in the realm of techno-managerialism (Fischer 2005). The result is that political and social decisions move into the realm of administrative decision-making: "[C]ontroversial economic and social problems are thus interpreted as issues in need of improved administrative solutions" (Fischer 2005:18). Sustainability policy is no exception to this. Sustainability is imagined to be an ecological-technical concept, entailing a set of goals that sustainable urbanism hopes to achieve, i.e. levels of energy efficiency, carbon output, environmental quality. Sustainability policy is meant to optimize performance in these areas at the least possible cost to maximize efficiency and provide the greatest general impact for investment. The question of efficiency deflects the question of who benefits. It frames the discussion in terms of the best technical intervention to solve a particular problem and takes off the table the broader question of how the city should be organized. There is an assumption that all people will benefit from the implementation of sustainability policy. While there

can be no doubt about the importance of air quality or the benefits of energy efficiency, differently positioned residents vary in their ability to access the benefits of these kinds of programs. Other than distribution of benefits, the relative importance of benefits needs to be taken into account. Sustainability is of greater importance to certain segments of the urban population than it is to others. The assignment of funds and staff time to sustainability diverts them from other areas of concern.

It might be helpful here to illustrate this point. Delhi, India has been pursuing a number of sustainability policies since the early 2000s. Pollution was a major issue for quality of life in Delhi. In the name of making a clean, green Delhi, diesel two-stroke auto rickshaws were banned within city limits; rickshaw drivers were required to convert to compressed natural gas (Baviskar 2004). Polluting industries were also banned in the city (Baviskar et al. 2004). Slum colonies were cleared because of their purported impact on the water quality of the Yamuna River (Menon Sen 2008). While it can be argued that the improved environmental quality is better for all residents of Delhi, the effect of these efforts has been the mass displacement both the urban poor and their livelihoods. Baviskar describes the impetus behind this sustainability policy as a bourgeois environmentalism concerned primarily with control over the aesthetic ordering of public space. The desire for a city that is clean, hygienic, green, and safe is the desire of the new urban elites who want to reshape the city to meet their needs before it meets the needs for the livelihoods and lives of the urban poor. The policies being put in place in Delhi fit within a discursive framework of sustainable urbanism. Attention to the ways in

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which the policy universals of sustainable urbanism gain traction in Delhi shows precisely how sustainability is a political project.

While the differential impacts of sustainability policy are rarely taken into account, there is no necessary correlation between broader goals of sustainability and the disenfranchisement of the urban poor and the marginalized. There are many ways to achieve the goals of sustainable urbanism, with different policies and technical interventions leading to different possibilities for the outcomes of sustainability policy. City officials have a variety of technologies at hand to implement a sustainability agenda. Energy efficiency can be achieved through the proliferation of solar technology, the broader implementation of wind power at the regional scale, the retrofitting of existing buildings or demand management. Run-off can be controlled through the construction of large scale retaining ponds, the dispersion of rain gardens or a shift in paving materials used in parking lots. Lack of access to healthy foods can be addressed through support of farmers markets and home gardening or the provision of fresh fruits and vegetables in corner groceries. The material specificities of these technologies play a role in shaping the kinds of limitations and possibilities of a sustainability program. The choice of farmers' markets over other methods of providing healthy food has real consequences for who is able to access food and how successful attempts at improving nutrition will be. Farmers' markets are not universally accessible to all urban residents; they are often located in proximity of more well-to-do neighborhoods. They also tend to be more expensive than discount grocery stores, making them less desirable to residents with less money. Importantly, they also tend to be coded with race and class markers, making

them less comfortable spaces for lower classes and non-whites (Slocum 2007). Similarly, programs designed to get people to grow their own food will have different successes and provide different people with access. Such programs require access to growing space, which is less available to renters than homeowners. Community gardens can supplement the lack of space for renters but are limited. Time to garden and know-how are both also major barriers to home gardening. Likewise, programs to get fresh fruits and vegetables into corner markets will affect people differently. They can improve the availability of fresh foods in food deserts but may not provide quality produce at an affordable price. The choice of which program to implement has real consequences for who benefits and for the kinds of capacities that programs engender.

As a result, we should not accept technical rationality as the main mechanism by which policy is effected. Technical rationality refuses to recognize the political nature of its solutions. Putting sustainability into practice is more than just the adoption of a new technical policy framework. It involves both the re-imagination of the city through the ideals of sustainable urbanism and the reordering of both the physical and social fabric of the city. Through this reordering of the city, different capacities and political possibilities emerge as new collectivities of people and things are brought into being.

Politics of Ordering 2: Order/Disorder

I want to return now to Don Samuels' vision of the sustainable city at the beginning of the chapter as a city produced by one logic with two drastically different spatial articulations: a sustainable fragment and an unsustainable fragment. As an

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ordering process, sustainability attaches certain groups and certain activities to different spaces of the city. It codes certain groups and activities as belonging and others as not belonging. How do we account for the spaces that are erased in the making of the new order? How do we account for the people that occupy these spaces?

To answer these questions, it is helpful to turn to the political philosophy of Jacques Ranciere. Ranciere is one of a number of philosophers that one could summon to address the establishment of a social order and the politics that surround it. One could, for example, also turn to a Gramscian discussion of hegemony to explore the making of a universal and the political opposition that emerges around it (e.g. Edeleman 1999). However, what Ranciere provides for the discussion of ordering that a Gramscian approach does not, is an understanding of a social order that is simultaneously spatial. For Ranciere, the assertion that hierarchy puts everything and everyone is their proper place is not just metaphorical; Ranciere sees the spatial articulation of social order as constitutive of that order. Ordering is a process that arranges not just a social hierarchy but a spatial hierarchy as well. Dikec (2007) points to this when he argues that Ranciere is particularly helpful for thinking about the way that urban policies work. Ranciere allows us to more clearly grapple with how orders are inscribed into the physical fabric of the city and how contestation emerges through transgressions of social norms as well as place.

For Ranciere, social order is made through the 'partition of the sensible.' This determines "who can have a share in what is common to the community based on what they do and on the time and space in which this activity is performed… it defines what is

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visible or not in a common space, endowed with a common language, etc.' (Ranciere 2004:12). This order is shaped by consensus or agreement over the division of the whole of life and activity into knowable, governable parts. It compartmentalizes the elements of life so each has its proper place and time: certain activities are public, others private; certain activities are political, others apolitical; certain activities are economic and others are not. Each subdivision operates within the realm assigned to it and does not encroach on the proper place of other forms. Within the current political moment, consensus-based democracy is defined by the attachment of people's political subjectivity to a set of population characteristics and the ceding of political responsibility to classes of professional politicians and bureaucrats (Corcoran 2010). For Ranciere, politics is not a product of this order but emerges when the conditions of the order are challenged and disrupted. It is a claim to spaces and identities that are not accounted for in the current system.

Though order is a system of hierarchy, it is based on the premise of equality. There is no prior natural attribute that differentiates people into a hierarchy. All people are naturally equal. Order is the imposition of hierarchy onto this field of equality. Through the partition of the sensible, everything and everyone is put in their proper place. This ordering though, is always contingent. It is predicated on some individual or some group seizing power and dividing the community into its constituent parts, an order that at its most basic involves the division of society into those who command and those who obey. The preconditions of obeying are twofold: "You must understand the order and you must understand that you must obey it. And to do that you must be the equal of the

person who is ordering you" (Ranciere 1999: 16). The capacity for speech and understanding demonstrates the natural equality of all people. The hierarchy, though, is generally accepted by those who are in it; the rulers and the ruled both tend to stay in their given places. The presupposition of equality that allows for the establishment of the order and the understanding that the order is to be followed introduces a constitutive instability to the system of order. The imposition of order onto a field of equals places within the system of order the foundations for its own dissolution. In the recognition of that equality, anyone can speak up and challenge that order. There is no reason per se that rule cannot be in the hands of "anyone at all." This becomes important not because equality is a goal to be achieved, as in the liberal understanding of equality; but because Ranciere's ontological claim regarding equality is fundamental for disorder – for challenging systems of order and oppression (Chambers 2012). Order always fails to account for all of its parts. There are those whose part is no part at all. The political moment occurs when the foundational equality is grasped and, rather than obey and stay in their proper place, people disobey and make claims to different spaces and subjectivities, when they lay claim to a part for those with no part.

As mentioned, the idea of everything having its place is more than just metaphorical. Ranciere's social order is always a spatial order as well. Order is that which allocates particular bodies, actions and thoughts to their proper places. Ranciere calls this spatial form of order the 'police'.

The police is thus first an order of bodies that defines the allocation of ways of doing things, ways of being and ways of saying, and sees that those bodies are assigned by

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name to a particular place and task; it is an order of the visible and the sayable that

sees that a particular activity is visible and another is not, that this speech is

understood as discourse and another as noise... Policing is not so much the

disciplining of bodies as a rule governing their appearing, a configuration of

occupations and the properties of spaces where these occupations are distributed.

(1999: 29)

In this formulation police is much more than an institution of power, it is a principle of

distribution. What this means is that police does not automatically imply repression, but

rather its essence is the distribution and organization of lives and activities and,

importantly, the normalization of this order (Dikec 2007). Order is often presented as

natural, which justifies its partitioning of the world. The order, in this reckoning, is a

result of the way things are rather than the result of human manipulation. For example,

capitalist economics are often presented as natural, and the uneven distribution of wealth

that emerges as a part of capitalism is seen as an unquestionable outcome of the natural

functioning of that economic system. An important thrust of Ranciere's critique is

precisely that no order is natural. This highlights the contingency of social order. While

any given partitioning of the world may be in place, there are always other ways that

could emerge with a different organization. Like Law (1994), who recognizes the

existence of multiple modes of ordering, Ranciere too does not see the police as singular:

it is any activity that serves to establish a distribution of people and activities. Politics is

possible because socio-spatial order is neither natural nor the result of any divine order.

Order is a result of the fact that people claim it is so and other people follow their lead.

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While the idea of order requires that everything be in its proper place, it is impossible for everything and everyone to be accounted for. As Dikec notes, "although the police notion of the society is based on a principle of saturation (determined spaces with everyone and everything in their proper place), there is never total closure" (2007:18). Order always fails to account for the totality of functions and of people. There are always those who have no part and those who remain uncounted. What is their place in the order? Consensus politics assumes the "inclusion of all parties and their programs" and as a result "prohibits the political subjectification of a part of those who have no part, of a count of the uncounted" (Ranciere 1999: 71). But because of the universal claims of systems of order, the promise of a place for everyone, the order is open to claims from the part with no part. In the realization of the fundamental equality that underpins the order, those who have been excluded from the order may force a claim to a position within it that does not already exist. This is the properly political moment.

Ranciere's work is an illiberal ontology of politics. At stake for him are the conditions under which politics is possible. For him a proper politics occurs only in the moment of disruption and disordering. Because of this, Ranciere is not necessarily a philosopher one would turn to in order to think about questions of justice and equality, both of which are framed within a liberal ontology. Those questions are not part of Ranciere's problematic. This does not mean that proper politics is the only means through which lives and livelihoods can be improved. Ranciere (1999) argues that there is a better police and a worse police: some orders are better than others. Ranciere prefers orders that are regularly interrupted by egalitarian logics that jolt the "natural order". The

constant interruption and remaking of a system of order can push it to be more inclusive

and have a better distribution of benefits. This does not change the fact that a hierarchy is

still in place and that reordering is not properly political, but it does broaden the

understanding of the kinds of actions that can have an impact on improving the capacities

and possibilities that a system of order can offer.

How then is Ranciere helpful for thinking about sustainability? Dikec (2007)

recognizes that ordering is an important component of urban policy. Ranciere allows us

to think through how urban policy is a form of the partition of the sensible, delineating

particular populations and activities and assigning them to different parts of urban space.

It validates certain kinds of subjectivities and practices as belonging to the city and serves

to quarantine others to spaces that do not count. This is essential for an understanding of

how sustainability orders the city. Samuels's initial statement highlights the perception

that sustainability is an agenda that orders the city in particular ways for particular people

and requires the exclusion of the lives and neighborhoods of large numbers of people.

This is not just perception but is a reality of sustainability. The bodies and the activities

of the Northside of Minneapolis do not necessarily fit within the logics of the sustainable

city and, as a result, some have been excluded. This holds true for sustainability more

broadly. To be a coherent system of order, there are activities and people that

sustainability does not and cannot account for.

Ranciere's theorization of the part with no part allows us to think about how

sustainability can emerge as a site of political possibility. While as a consensual-based

system of order it is not a properly political project, the tensions between its promises and

its exclusions are a space that can generate a political moment. Sustainability presents a universal vision of the world that promises a better way of life based in an imagination of a more functional relationship between the city as a social and as a natural object. This vision is not exclusive to those that officially have a part nor is it a singular vision. Sustainability is a project around which different imaginings of the relationship of environment and society can be imagined. These can both cut across and unsettle prevailing ideas of sustainability or they can strive to make sustainability more inclusive.

Sustainability cannot ontologically be a radical initiative, according to Ranciere. But attention to the inclusions and exclusions and the openings and closures that emerge in the city as a result of sustainability allows us to think about how it might function as a more inclusive and more democratic system of order. It may not be the best police, but it can be compelled to become a better police through dissensus.

Conclusion

The potentials that can emerge from sustainability are tied up with the ways that it works to order the world. Sustainability is not a policy initiative that will benefit all residents of the city. It emerges from a particular set of interests and imaginings. By paying attention to sustainability as an ordering process, we can explore the exclusions that must happen to make sustainability a functional whole. We must also look at the particular methods through which sustainability is implemented; the way that measurement is used to construct that city as an actionable object and the particular techniques that are enacted upon the city both play a large role in shaping the possibilities of sustainability. While there are a number of structural elements in place that construct

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sustainability as an exclusive program, these exclusions are not immutable. The space between the universal promise of sustainability and de facto exclusions opens up sustainability to claims for justice and equity.

The rest of the dissertation explores different ways that sustainability functions as a system of order in the City of Minneapolis. Chapter 3 considers how a regime of sustainability measures the city, looking at what is counted and what is not and the implications this has for how sustainability orders the city. Chapter 4 looks at programs that are being put in place to make sustainability happen, paying particular attention to the different kinds of technologies meant to build a local food economy and considers the kinds of possibilities that emerge from the new configurations they bring about. Chapter 5 explores how climate change has begun to shift the imagining of sustainability and addresses how this has led to new forms of measurement and new configurations of the system of order.

Chapter 3

Measuring Sustainability: Indicators and the Production of Urban Order

In 2006, there were 59 homicides in the City of Minneapolis, or about 16 homicides per 100,000 residents (City of Minneapolis 2005). This was the largest number of homicides in the city in more than 5 years. In an effort to curb homicides and increase clearance of homicide cases, the police responded on a number of different fronts. Increased surveillance, through both cameras and gunshot sensors, was put into place in both the 3rd and the 4th precincts, the lower income areas of North and South Minneapolis where the bulk of the homicides were occurring. In addition, the police department worked with the Department of Health and Family Services to provide funding for youth violence prevention programs. They established a violent offender's task force that could coordinate within the department and between Minneapolis and Chicago to address and halt gang violence. In 2009, after a steady decline, only 19 homicides were committed in the city, a decrease to slightly under 5 per 100,000 residents (City of Minneapolis 2010). This was hailed as a major achievement on the part of the city, bringing the rate well under the target goal of less than 11 per 100,000. The next year, 2010 saw an increase back to one short of the 2008 level, for a total of 38, still under the target goal of less than 11 per 100,000 (City of Minneapolis 2011).

While homicide rates may not immediately bring issues of sustainability to mind, they are one element of the City of Minneapolis's vision and plan for a sustainable city.

As noted earlier, Minneapolis has taken a broad-based approach to sustainability, looking to address not only environmental issues but also issues of community and individual health, economy, and social justice. To do this, the city has established a set of indicators, each of which provides a set of goals and targets for a specific element of sustainability. Within this approach, homicide rates provide a means for tracking public safety in the city, a concern for healthy and vital communities. In the initial sustainability plan, the city lays out the importance of homicide rates: "Violent crime rates are a very visible area of concern when a community assesses the state of public safety" (City of Minneapolis 2005). That said, keeping count of homicides is not the only way that the city can assess public safety. The city could look at the incidence of other crimes; they could choose to measure availability of violence prevention programs or youth programs; they could measure public perceptions of safety. At the most holistic level, they could look at the relationship of eyes on the street and mixed-use development that Jane Jacobs (1961) argues is essential for making urban spaces safe. The choice of homicide as an indicator for both public safety and sustainability has an impact on the way that the city chooses to operationalize both safety and sustainability. It shapes both the way sustainability is thought of and talked about and how it is implemented. It channels imagination, effort, and funding into the question of how specifically to lower homicide rate, thereby glossing over the broader structural causes that contribute to lack of public safety.

In 2009, the city decided that the homicide indicator was inadequate as a proxy for what they wanted it to measure: public safety. While homicides are an important indicator, there is a broader swath of violent crime that the city confronts. The city

adapted by bringing their measure more in line with the justification given in the 2005 report, that v*iolent crime* rates are the problem and not just homicides. As a result, the city switched the indicator from looking just at homicide to addressing Class One violent crime: homicide, rape, robbery and aggravated assault. In addition to changing the kinds of crimes tracked in the indicator, the city changed the way that it presented data on violent crime in the annual report. When reporting on just homicide, the city reported both the racial composition of homicide victims and the neighborhoods in which the homicides occurred. With the switch to a broader focus on violent crime, racial data for homicides was still reported but spatial data was no longer given a place in the yearly report (though the data is easily accessible through the police department).

Both the choice of indicator and the way that it is presented are important clues to how a city understands sustainability and will act upon it. The choice of which phenomenon to measure and the specific metric used to measure that phenomenon will cause the problem to come into focus in a very particular way. Thinking through the problem of public safety as either homicide or violent crimes frames the issue of safety in terms of crime. As a result, crime prevention becomes mainly a logic of making cities safe. As mentioned earlier, this particular focus on crime reduction will likely work to reduce specific crimes rather than alter the structural conditions that impel crime or address broader questions of urban design for safety.

In this chapter, I argue that measurement is an essential component in the production of the social-spatial order. It is through measurement that cities become legible, that populations are known, and that problems to order are identified. The City

of Minneapolis has established a system of measurement based on 26 indicators that defines its approach to sustainability. The broad spectrum of indicators tell us only so much, however. I contend that it is essential to look at how individual indicators are measured if we are to understand the power of sustainability as a system of order. Problems and opportunities for action are defined in relation to how individual indicators are measured; it is here that programs and policies are put into place to remake the city as a sustainable city.

Measurement and Power

The discipline of statistics emerged as a form of knowing meant to uncover the "laws" that govern society, thereby allowing for its proper management (Joyce 2004). Statistical measurement and other forms of calculation are critical to the workings of what Foucault has called governmental power or the biopolitics of population. Governmental power works through the management of the vital characteristics of populations. The rendering visible of populations, then, is central to the application of governmental power. Populations are not an aggregate of individuals but are known through statistical measurement and the laws of averages (Hacking 1991). Through the measurement of vital statistics such as such as birth rates, death rates and life expectancy, populations come to be "seen" through their characteristics. State power operates by attempting to transform those characteristics in ways that improve the security and well-being of desired populations, in the process consolidating the security and well-being of the state. In Foucault's reckoning, government involves managing the relations of people

and their environment. Government, he says, is "the right disposition of things leading to a convenient end" (Foucault 1991: 208). He continues:

> One governs things. But what does this mean? I think this is not a matter of opposing things to men but, rather, of showing that what government has to do with is not territory but, rather a sort of complex composed of men and things. The things, in this sense, with which government is to be concerned are in fact men, but men in their relations, their links, their imbrications with those things that are wealth, resources, means of subsistence, the territory with its specific qualities, climate, irrigation, fertility and so on. . . .

Government, then, works through creating a "police," to use Ranciere's term, that orders the relationships between people and their environment. In the late nineteenth century, pre-existing categories of measured social problems such as crime, vagrancy, and disease were redefined from problems of the general population to characteristics of the urban, where the city itself becomes a problem: an object to be known through statistics (Joyce 2004). This shift not only required that populations be measured but also that the urban environment be measured and managed. Surveying was an early effort to make territory legible (Mitchell 2002, Sivaramakrishnan 1998), and maps also played an important role in making territory visible (Joyce 2004). The attributes of natural and physical entities need to

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be seen statistically as well as visually to insure their proper management.[26] City

planners measure not only the vital statistics of urban populations, they measure

traffic flow, environmental quality, tree cover, and occupancy. All of these are

important in shaping how planners work to shape the city's social-spatial order, its

"police." Thus, the sustainability indicators used by the city of Minneapolis

measure both social and physical characteristics. It is through these measurements

that the city and its dwellers become actionable objects that can be imagined and

worked upon to produce desired sustainability outcomes.

Measurement for management limits how a problem can be addressed. The

discussion of public safety at the beginning of the chapter demonstrates this. In this way,

measurement serves to overlook relations that are not directly measured and that are seen

as unimportant for the purpose of management. In a discussion of how scientific forestry

changed the way the forest was seen and used, Agrawal (2005) argues that non-

commercial plants and previous use of forests by forest dwellers are made illegal and

then made to disappear.[27] This erasure of use outside the realm of commercial forestry

was necessary for the management of the forest as a commercial object: "The erasure of

an ensemble of vegetation and relationships, both human and non-human, was necessary

for forestry to proceed apace" (Agrawal 2005: 63). Though the discipline of forestry

placed a grid of legibility upon the landscape and was designed to make the landscape

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[26] A large portion of the literature on measurement and the natural world looks at how scientific forestry brought forests into focus based on the extraction of valuable species. Techniques similar to those used to measure populations were used on forests to make management more efficient and effective (Scott 1998, Sivaramakrishnan 1998, Agarawal 2005).

[27] This disappearance occurs primarily as the result of the effacement of species and usages in measurement and accounting of the forest. The forest is measured in ways that make previous usages and non-commercial species invisible.

match the plan, natural objects frequently refused to fit the grid that was placed upon

them. This holds true for the ways that the city is measured to make sustainability.

Certain kinds of lives and relationships with the city do not comfortably fit within the

frameworks and logics of sustainable urbanism. Rather than address them, the indicator

program makes them disappear. That which is not measured and accounted for does not

exist within the structural logic of sustainability. In this way, measurement plays an

essential role in the establishment of sustainability as form of police. The indicators

make visible certain activities, people and parts of the city count while effacing others,

thereby opening up sustainability as a site for those with no part to demand a part.

For Minneapolis, measurement is the central pillar of its sustainability initiative.

In the absence of a sustainability plan, the indicator program has become the document

that defines sustainability and shapes sustainability practice in Minneapolis. While

indicators are a best practice used by most cities, Minneapolis is one of the few that has

not established a broader vision into which the indicators are situated. As a consequence,

it is essential that we look at how this indicator plan works. This requires attention to

both the broader structuring of the indicator program and the analysis of the way that

individual indicators work. This chapter starts with an analysis of the way indicators

have been mobilized as best practice. It then moves to study the origins and evolution of

the broad indicator program in Minneapolis. Subsequently, it moves to address

individual indicators in each of the categories used by the City of Minneapolis. In each

instance, it seeks to look at how the indicators are defining the spaces and populations of

the city and how in turn these are mobilized as part of the ordering work of sustainability.

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Making Sustainability Substantial: An Indicator-Based Approach to Sustainability

Sustainability at the urban scale was first systematically addressed at the 1992 United Nations conference on Environment and Development in Rio de Janeiro, informally called the Earth Summit. This conference spawned the Agenda 21 action plan, a blueprint for making sustainability happen in the 21st century. Agenda 21 established the need for sustainability at multiple scales of governance. Not only were international treaties and national policy necessary, but action was required at the local level as well: local governments had a responsibility to take on issues of sustainability (Harmon 2008). Another important outcome of the Agenda 21 blueprint was an emphasis on indicators as a key practical means for addressing sustainability (Bell and Morse 2008). Chapter 40 of Agenda 21 states that "indicators of sustainable development need to be developed to provide solid bases for decision making at all levels and to contribute to a self regulating sustainability of integrated environment and development systems" (UNCED 1992, quoted in Moldan and Dahl 2007:1). Indicators are seen as essential for developing an informed integrated approach to sustainability.

Correspondingly, sustainability indicators are seen as one of the most important elements that cities can put into place to move forward towards sustainability (Bell and Morse 2008, Portney 2003). Indicators perform a set of functions that make them a useful tool for cities. Indicators are a tool for translating the vague concept of sustainability into a clear set of factors and processes that the city finds important (Harmon 2008). As discussed in the previous chapter, since there is little consensus on

what specifically constitutes sustainability, indicators allow cities to specify which

factors are important in their specific contexts. Portney (2003) argues that the

seriousness with which cities address sustainability cannot be judged by which indicators

they take up and which they decline to; specific considerations may make air pollution a

major issue in one city and a non-issue in another. What matters is not which specific

indicators a city adopts but the way that a city incorporates indicators into a broader

vision of sustainability in a comprehensive plan for sustainability. Once the different

areas of concern are identified, indicators provide an important means for understanding

"where you are, which way you are going and how far you are from where you want to

be" (sustainablemeasures.com 2011). Indicators take the messy, nebulous definition of

sustainability and translate it into a set of quantifiable measures. This broader framework

is seen as important because it provides a rigorous and data-driven program that is

comprehensible to both city government and the public, thereby allowing for more

informed decision-making (Hák et al. 2007: xix).

An indicator-based approach provides additional benefit at the urban scale. The

ability of the city to act is highly constrained. First, due to its position in the hierarchy of

structures of governance, both federal and state rules and agendas often supersede the

wishes of the city. In its approach to sustainability, the City of Minneapolis has been

unable to pursue certain levels of emissions control and certain kinds of zoning

requirements that it views as desirable because it is unable to legislate for stricter

requirements than those set forth in state and the federal regulations (Prest interview,

August 3, 2010). Additionally, most of the property in the city is privately owned. While

the city has some ability to limit certain kinds of property usage and require other usages

through the zoning code, there are major limitations to the city's ability to mandate what

happens on private property. While the city has mandated that all new city-owned

building be built to LEED certifications and has begun to install solar energy apparatus

on many city facilities, it cannot mandate that private property owners do so. Without the

ability to mandate, the city must work to make sustainability into a common sense

approach for evaluating what the city does. The establishment of an indicator program

provides a framework for defining and evaluating the work of the city in relation to

sustainability. It provides a normative basis that lays out a vision for the kinds of spaces

that should make up the city, the kinds of activities that belong in the city, and the kinds

of citizens who should inhabit the city.

The annual reporting on the progress made on the different indicators continually

reinforces the idea that sustainability is something that is important for the city. The

indicators establish a calculative metric by which the performance of the city is judged.

There are clearly established goals and a time frame in which those goals must be met.

For city government, the clear goals and the yearly progress reports make city staff

regularly address the work identified in different indicators. The indicator program also

tells the public that sustainability is important to the work of the city and is something

that city government should be held accountable for. As Rydin (2007:612) argues:

"Calculation is at the heart of indicators since their purpose is to provide a means of

comparing performance over time or space. In so doing they define the object of their

calculation -- that is, the performance being monitored. They make such performance the

object of scrutiny and avowedly aim to influence behavior through `naming and shaming' (that is, the publication of indicator trends) in order to `improve' performance." Through the iterative process of goal setting and progress reporting, sustainability is naturalized as a correct and valid way of evaluating the performance of the city.

Sustainability indicators are, at this point, considered to be the best practice for urban sustainability work. They are seen as objective measures that provide clear direction and transparency for the sustainability work of the city and as such are the most efficient and effective means to produce sustainable outcomes. This is an approach that cannot be left unquestioned. Indicators are one of the dominant means by which the city orders in the name of sustainability. The broader set of indicators defines certain kinds of things important for sustainability and does not address other kinds of issues. Furthermore, the calculative logic of indicators is a form of technical rationality that often serves to move debates over the content and outcomes of sustainability work out of the realm of politics. As a consequence, we need to examine in more detail how indicator programs work and for whom they work. In the remainder of the chapter, I will explore the broader indicator program that the City of Minneapolis uses to guide its sustainability approach. I will look at both the genesis of that program and how the choice of the full panel of indicators was made as well as looking at how the calculation of individual indicators occurs. Ordering occurs at both of these scales and it is in these details that we can more clearly explore the kinds of opportunities that sustainability opens up as well as those that sustainability tends to foreclose.

The emergence of the Minneapolis Sustainability Indicators

As mentioned in the introduction, the initial set of indicators presented to the city came out of two citizen roundtables run by the Crossroads Resource Center (CRC) in the "Fifty Year Vision and Indicators for a Sustainable Minneapolis" (hereafter 50YR). Before the 50YR report, neighborhoods in the city had already been engaged in a Neighborhood Sustainability Indicator Project (NSIP), which was influential in setting the stage for the initial roundtable conversations. In the NSIP, residents in two neighborhoods in Minneapolis had come together to define their visions for sustainability and work to establish indicators that allowed them to evaluate and improve sustainability within their neighborhoods. The focus of the NSIP was to evaluate assets of a neighborhood and work to understand how these assets can drive neighborhoods to longer terms visions of sustainability (Meter 1999). The NSIP used four kinds of indicators: Deep sustainability indicators, background indicators, core indicators, and data poetry indicators. Of these, Ken Meter, the director of the CRC, argues that data poetry indicators are the most important (Meter interview, July 27, 2010). Data poetry indicators are meant to capture the interconnections between complex phenomena. They are both measurable and transformative. The Seward neighborhood posted a friendly space indicator – where a consistent group of volunteers would assess the neighborhood as a whole and evaluate what percentage of the neighborhood-constituted space was welcoming. This indicator cuts across a number of issues relating to livability, crime and the appearance and attractiveness of the neighborhood and presents a clear vision for what the neighborhood desires itself to be. Data poetry indicators, while numerically

based, are meant to be more open to narrative and discussion than other forms of indicators. Most importantly, they are meant as an attempt to tie together a disparate set of processes and factors into an indicator that describes connections as well as the state of a system.

The 50YR report, while based on the work of the NSIP, took a different approach. Rather than basing itself in data poetry and deep sustainability indicators (indicators based on a long term, optimistic imagining of what sustainability can be), the 50YR report focused on core and background indicators, simple indicators that clearly lay out what is at stake. It focused first on developing a collective vision for the Minneapolis of the future and then laid out 30 indicators to measure this vision. Next, it presented 13 vision statements for what the desired future of Minneapolis would look like. The vision statements were divided into four categories: environment, economy, equity, and general (administrative) indicators. They included a desire for a healthy environment and ecosystem, concerns for education, public safety, inequality, employment, as well as a healthy climate for business. While some visions were attached to only one indicator, others had multiple attachments. Later on, an even broader set of indicators was attached to the goals that allowed for a very comprehensive evaluation. What the report was clear in doing was to outline the connection of specific indicators to specific goals for the city. Not only did it clearly connect indicators to goals, but it also discussed how the different visions and indicators were related. In short, it tried to set forth a clearly integrated vision of a sustainable Minneapolis.

Upon receiving the 50YR report, the city began to move forward with its own

sustainability plan. Gayle Prest, the current sustainability administrator, was appointed to

her position in 2005, soon after the council received the 50YR report. The city council

and the mayor charged Prest with distilling the 50YR report into something that would be

workable for the city. Prest moved quickly to establish a set of indicators on which the

city could act (Prest interview, August 3, 2010). City administrators were not interested

in a long process of visioning and deliberation but wanted to be able to point to what and

how the city was doing in its pursuit of sustainability. Prest narrowed the list of 30 down

to 18 and brought them to the council, who added an additional six indicators to the list

for a total of 24.[28]

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[28] The number of indicators has since increased to 26. A few of the original indicators have been removed and new ones have also been put into place.

Living Healthy	Living Green	Living as a Community
Healthy infants	Climate change	Brownfield site
Teen pregnancy	Renewable energy	Violent crimes
HIV and gonorrhea	Air quality	Community engagement
Healthy weight	Tree canopy	Homelessness
Asthma	Biking	Cost-burdened households
Lead poisoning	Transportation alternatives	Employment and poverty
	Airport noise	Graduation rate
	Stormwater	Arts and the economy
	Healthy lakes, streams, rivers	
	Green jobs	
	Local food	
	Waste reduction and recycling	

Figure 2: Minneapolis's sustainability indicators

The indicators were meant as a snapshot of quantitative measures that, taken together, would provide an understanding of the "health and vitality of Minneapolis" (City of Minneapolis, 2006). There are two important elements that get lost between the 50YR report and the actual indicator program as established by the city. First, the city does not lay out a specific goal or vision for the future nor does it connect specific indicators to specific goals. The indicators when taken together provide a sense of how Minneapolis is doing but there is no explicit coherence to them. The vision of a sustainable Minneapolis is never articulated in any of the planning documents. Second, it does not work to establish the connection between indicators. Many of the indicators complement each other or get at different aspects of larger problems. The city has not worked in any systematic way to explore or value these connections.

The lack of a broader vision relates to an important omission in the sustainability work of the city. While council resolution 2003R-133 calls for the drawing up a sustainability plan for the city, no such document was ever produced. In a discussion with the City's director of sustainability in 2010, she consistently emphasized the importance of action over words and deliberation. City administration, she said, had made it clear that what they wanted was movement and results. As a result, the city had moved directly to the establishment of an indicator program without the preparation of a sustainability plan or vision first. With a focus on action, Prest argued, a plan was unnecessary. It would impede the forward momentum desired by city council and cost the city a huge amount in consultants' fees. The problem with this lack of plan, in terms of making sense of the city's approach to sustainability, is that there is no clear principle – no integrated vision – to guide and connect the various elements of the city's sustainability work.[29] The advantage to the city, which may or may not be of long-term benefit, is that with no clear guiding vision, opportunities for action can be pursued as they come up rather than there being a requisite order in how the city goes about implementing its plan.

The city has chosen a rather novel approach to the way it conceptualizes the categories of sustainability. For the city, "[s]ustainability is defined as meeting current needs without sacrificing the ability of future generations to meet their own needs by balancing environmental, economic and social (equity) concerns. In Minneapolis we are defining this as Living Green, Living Healthy and Living as a Community" (City of

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[29] While the 50YR plan worked to build a connected vision of the indicators, the city has not worked to make those connections explicit in its reworking of the indicators of the 50YR report.

Minneapolis 2009a). The city recognizes the 3Es as central to what sustainability is, but in its approach, it defines the categories differently. There is no clear correspondence between the three categories of living that the city has chosen and the traditional categories of economy, environment and equity. The indicators of the Living Green category are all environmentally focused but the other two categories are heterogeneous, encompassing diverse organizational concepts. The Living Healthy and Living as a Community categories both touch on issues of equity and economy, but are framed in relation to more integrated categories. A city's health has a direct impact on its economy but is not the main driver behind economic growth. Similarly, the indicators of Living as Community address the economic wellbeing of the city; but because of the way they are framed, they place the main value on the functionality of the city as a community. When asked about this ordering system, Prest indicated that it was not something that was carefully thought through. The city staff responsible for categorizing indicators clustered similar indicators and gave them names based on what they perceived as common themes.

While there may not have been careful thought given to the names of categories, their organization still provides important insights into the city's sustainability approach. The indicators chosen by the city do not fit easily in the traditional categories of the 3Es. With the focus on health and community, it is clear that the city sees sustainability as an important facet of livability. The yearly sustainability report is titled the *Living Well Report*. The number of indicators dealing with health and community provide an opening for a much more integrated approach to sustainability than an equity- or economy- based

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approach alone might. The city's indicators are grouped in such a way that they do a much better job at conceptually weaving equity and economy together. Vital communities require both economic health and equity. Environmental concerns are less tightly woven in. While brownfield redevelopment is seen as an indicator of a healthy community rather than an environmental concern, it is one of the few indicators that has an explicitly environmental focus in the Living Healthy and Living as a Community categories. When the yearly sustainability report is published, the Minneapolis *Greenprint* – the section focused on the environmental indicators – is published separately before the release of the report as a whole. City staff indicated that this is because there is greater interest in the environmental indicators both in city council and in the broader Minneapolis community.[30] The separation of the *Greenprint* report and the broader *Living Well Report* is important because it reveals the differential effort and attention attached to different categories and indicators.

Because of the active interest in environmental indicators and their acknowledgment as the central element of sustainability, a lot of effort is invested in compiling the Living Green indicators. The Living Healthy indicators are in important but secondary focus of activity. There is less activity and organization around the Living as a Community indicators. When I contacted city staff for interviews, it became apparent that in multiple cases responsibility for the indicator was not completely clear; the contact person named by the sustainability officer was not necessarily the person working on the indicator. This was not true across the board. The living wage indicator,

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[30] Members of the City Environmental Advisory Committee, the citizen body charged with advising the city on sustainability, also demonstrated a greater interest and concern with the environmental indicators than the other categories.

for example, was a focus of a lot of work during the summer of 2010, with Councilmember Gordon as the driving force. The city has one of the worst racial disparities in the country in terms of employment. Gordon was pushing to include an indicator that would address this so that city could improve upon it. However, the initiative was dependent on the external interest of a city council member; it would not have moved forward without Gordon's involvement. In general, if the indicator is not directly related to work the city is regularly engaged in or has not engaged the specific interest of a council member or advisory body, there is little chance that much progress will be made. As a result, while Minneapolis has an expansive set of indicators that allow for a broad-based approach to sustainability, there is a huge degree of unevenness in the effort and energy that is devoted to different indicators.

Indicators at Work

An analysis of the indicator approach as a whole allows us to explore how the city is defining sustainability and what problems are included and excluded in the city's sustainability work. What this level of analysis does not do is give a sense of how the indicators are being translated into action. Because responsibility for individual indicators is devolved to individual city staff members and because the city has not put forth a plan that guides and synthesizes the individual indicators, it is necessary to look at how individual indicators are managed to get a sense of what sustainability actually does.

This section focuses on four indicators spanning all three categories:[31] Healthy Weight, Brownfield Sites, Teen Pregnancy, and Urban Tree Cover. Each has been a site of active work over the last two years, and has had a clearly defined coordinator. In looking at a representative and somewhat comprehensive group, this section explores both the possibilities and the limitations that emerge from the Minneapolis approach to sustainability indicators.

Healthy Weight

The issue of obesity has become increasingly important in policy debates around the country in the last ten years. Obesity is seen as one of the major public health issues of our time. It is a factor in many diseases and one of the major reasons for rising health care expenditures in the US (Finkelstein et al. 2003, Wolf and Colditz 2012). The responsibility for obesity prevention and reduction operates at many scales but has become an important part of the mission of city health departments.

While measurement is, in many ways, essential for the technical management of a problem like obesity, the limitations of measurement do not halt efforts to address the problem. There are huge problems with data used to track obesity in Minneapolis. Data comes from two sources. The main source the city uses is the Behavior Risk Factor Surveillance Survey (BRFSS). The BRFSS is a voluntary phone survey run by the Center for Disease Control and Prevention (CDC), which questions a couple of hundred people each year on a number of health issues. Because of the low sample size (n) and

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[31] These indicators were selected based on their coordinators' willingness to speak with me, as well as the content of the interviews. Healthy Weight and Teen Pregnancy fall in the Living Healthy category, Urban Tree cover in the Living Green and Brownfield Sites in the Living as Community.

the lack of an effective random sampling method, data between years is not readily comparable. It gives us a snapshot but is not a statistically robust source. The other data set the city can access is the Hennepin County Shape Survey. The Shape survey is slightly more representative in that the county sends fliers to elicit responses; in addition, it contacts people via cell phones and land lines. Even so, it is not a statistically robust source of data. With the lack of adequate data, the effect of the city programs is hard to establish. People are asked to self-report both height and weight for both of these surveys. This increases the error because people tend to overestimate their height and underestimate their weight, which leads to a lower BMI (Tiede interview, August 25, 2010).

Though the data used to track obesity is less than ideal, the city needed some way to measure the problem. Because of this, flawed data was better than no data at all. Even with its flaws, it gave the city a broad sense of the problem, which justified the need for technical intervention. The target set by the city for the healthy weight indicator was to have 52% of the population as a whole be at healthy weight by 2010. The goal went unrealized. The rate has consistently remained at around 49% since 2006. Given the difficulty with year-to-year comparisons, the question of whether this represents a lack of progress or not is difficult to say. The goal itself was not technically derived or justified. Members of the health department looked at national averages and where the rate stood and met with city staff from the sustainability office to establish a goal. The goal of 52% was suggested as a reasonable goal to pursue – one that was achievable while still pushing the city to make positive change.

Despite the lack of effective data for tracking, the healthy weight indicator is associated with a large set of programs. The city is very active in its work to address the issue of weight. Because of the interest in anti-obesity work from state and national funding agencies, there are significant funds available, even when the numbers used to calculate the problem are not totally reliable. From 2004 to 2009, work on the healthy weight indicator was funded by a 'Steps to a Healthier Minneapolis' (Steps) grant to the City of Minneapolis from the CDC. Steps money was used to fund a broad set of programs across the health department dealing with not only issues of weight but also asthma, diabetes and cigarettes among other issues. The grant provided funding for work in four sectors: community, schools, the workplace and health care. The health department was most effective in its work in the schools and the community.

In schools, much of the Steps money was used to bring school lunches to a national standard for healthy food. For work in the community much of the Steps money was focused on programming. Targeting efforts towards communities with the greatest health disparities, mainly low income and minority communities, the health department provided mini-grants to community-based organization to provide programs to produce healthier weight outcomes. There were a variety of programs in place, but the main efforts were based in nutrition education and walking clubs. The goal was to assist individuals in making healthier choices and provide them with a framework for getting exercise: it operated at the scale of individual bodies. As the funding stream was winding down, city staff and members of the national healthcare community began to question the effectiveness of this kind of programming. As the lead staff person for the healthy

weight indicator, Lara Tiede, put it, "If you focused on programs and things like that, then you're going to influence, you know, your ten participants that come to your walking club, and then you know your funding goes away and your walking club and you affect the ten people who came regularly or in many cases not very regularly." In short, the approach was limited in its ability to address obesity as a systemic problem.

In 2008, the city received new funding from the State Health Improvement Program (SHIP). Rather than a programmatic approach, SHIP funding was tied to a different national framework. The framework based itself in changing policies, practices, systems and environments that influence behavior. At its core, the new SHIP funding was about building healthier environments that better enable people to pursue healthier lives. Practically, this shift is meant to take place in numerous ways. Tiede gave the following example: "So instead of telling you, influencing you, to buy the healthy stuff from the vending machines, like you know, doing all this nutrition ed, we just swapped out the food in the vending machines. So now the only food in the vending machines is healthy" (Tiede interview, August 25, 2010). The program was no longer about choices and education but instead focused on bringing bodies into conformity with a desired norm by altering the qualities of the environment in which bodies function: in short, it attempted to orchestrate the conduct of conduct.

SHIP money funded a number of new programs integrated around a number of low-income housing complexes in the city. As with the Steps money, SHIP money was targeted at low-income and minority communities, where the issues of obesity are most prevalent. Targeting funds on low-income housing complexes was important because it

enabled a set of programs to alter the built environment in and around these complexes. It looked at the potentials for walking and biking as modes of transport for residents and established exercise facilities within the housing complexes.

Another important element of the approach involves a shift in the food landscape around the complexes. First, community food resource mapping was undertaken to establish what kinds of foods were available within a half-mile radius of the housing complexes. Two programs were put in place to improve the quality of food available for residents of the complexes. First, the city worked to establish 15 mini-farmers markets in low income areas to provide greater access to fresh produce; next, the city developed a program to help corner stores increase the quantity of fresh produce available. Corner stores tend to be the major source of food purchases in low-income areas but they often do not carry fresh fruits and vegetables; the price of procuring and storing food is relatively high for small stores and they can suffer significant losses if the produce does not sell by its perishable date. Minneapolis City Council recently passed a law, which mandates that corner stores carry five fresh fruits or vegetables. But compliance with the regulation has been low and there has been a lot of pushback from corner stores against this because they have trouble moving fresh food (Ali interview, March 11, 2011). The corner store program provided corner stores with assistance for proper storage and display of fresh produce to facilitate sale of products before they spoil.

The most recent funding stream comes from the Communities Putting Prevention to Work Grant (CPPW). The CPPW is a funding stream that came from the American Recovery and Reinvestment Act of 2009. Like the SHIP funding, it is based in a policy,

system, and environment approach. CPPW funds were instrumental in the start-up of the

Homegrown Minneapolis program, an effort on the part of the city to build a local food

economy. Homegrown has provided a number of ways to improve the access of low-

income residents to healthy food and will be discussed in great detail in Chapter Four.

Another important element of the CPPW grant was an attempt to make North

Minneapolis more bikable and walkable. Up until the CPPW grant there was not a single

bike shop in the entirety of North Minneapolis. CPPW funded a bike-walk center that

would be a place where bikes and parts could be purchased, as well as providing

education about bike maintenance and safety.

The policy, system, and environment approach is about changing the structure of

the city to give people the freedom to act in more sustainable ways. While this provides

some important improvements in the health outcomes that people can achieve, the shift to

this systems model at the expense of the previous bodily focused model also undermines

some of the earlier success. Tiede argued that there were two important ways in which

this approach fails to produce positive outcomes. First, the movement from programs to

systems means that programs targeted at particular populations would no longer be in

place. Under the Steps funding, there were specific walking groups for Somali and

Latina women. Under the SHIP and CPPW funding there was no specific effort to target

these communities and there was less participation from their members. Another

important failure was related to creating bicycling infrastructure under the CPPW grant.

The initial grant application had requested money for a variety bike infrastructure

including bike paths and bike lanes. In the end, though, one of the major reasons that

people do not ride bikes on the Northside is the lack of safety. CPPW did not provide funding for policing and the provision of safety measures. It saw improvement of the bike infrastructure as sufficient intervention and did not address the broader causes for lack of cycling among Northside communities. As a result, the city had to cancel all bike plans associated with CPPW except for the bike-walk center and then had to return about one million dollars to the federal government.

While the measurement of obesity in Minneapolis is imprecise and doesn't effectively track the data between years, there is still a huge amount of work being devoted to anti-obesity efforts. There is a tremendous amount of attention focused on obesity and health at the national level that has provided funding for many new anti-obesity initiatives. This has allowed the City to develop a creative set of programs to address obesity from multiple angles. An important component of this has been an attempt to reshape the form of the city to facilitate people in making healthier choices about their lives. In doing this, the program is trying to establish new assemblages of people and things that leads to greater capacities for healthier living.

Brownfield Sites[32]

One of the major successes of the indicator program is the Brownfield Sites indicator. The city established a goal of cleaning up 170 sites by 2014 but met the goal by November of 2010. It is the only indicator, to date, that has been met so far in advance. Discussions are currently underway about what the city should do next with the

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[32] The data for this section comes from an interview with Kevin Carrol, the lead staff person for the brownfield indicator (September 1, 2010).

brownfield indicator, centered around the question of whether or not to adopt a more ambitious goal for the next four years.

The Brownfield Sites indicator falls within the Living as a Community category. This is interesting because brownfields can be understood as an environmental issue; brownfield development is about the clean up of contaminated land. It is also, however, an essential element of economic development – in order to be re-used, previously developed sites must meet specific environmental standards. Without the cleanup of brownfields, many plots in the city could not be redeveloped. Because there is no land within the city that has never been used, all development must happen on previously used land, some of which was contaminated in the past. In this way brownfield development is closely linked to both economic and environmental conditions in many urban communities.

The city does not actually engage in brownfield cleanup or in the funding of brownfield cleanup. The main function of the city is to connect private developers with funders at the Metropolitan Council, Hennepin County and the State and to assist these developers in preparing competitive grant applications. They engage in outreach to developers to educate them about the existence of external funds and the elements of an effective application. The inclusion of brownfield reclamation into the sustainability plan has been helpful in that it has increased the visibility of the program; city staff and City Council members are more aware of the presence of funds and can direct developers to CPED for assistance. This increased visibility is possibly part of why the city has been able to meet its goal so handily.

How else could the city measure its brownfield cleanup? Currently the city measures sites cleaned as the main indicator, gathering data on acres cleaned and dollars in grants received. Members of the Department of Community Planning and Economic Development have discussed the possibility of trying to identify all contaminated sites in the city and develop goals around a percentage of sites that have been decontaminated. While this would be powerful in giving a sense of broader contamination within the city, the approach has both legal and logistical difficulties. It would involve the testing of every plot in the city. Legally it is problematic because property values would be adversely affected by even suspicions of contamination. The city is concerned that property owners would have grounds to litigate to prevent this sort of measurement. While this form of measurement would be more comprehensive and might provide a better framework for addressing the problem, it is politically unfeasible.

The current way the brownfield reclamation work is structured also creates a challenge in terms of the targeting of brownfield clean up; there isn't a means for the city to identify an area they would like cleaned up and then implement that cleanup. The funding formula is based on having a project ready to use that site and the number of jobs it is likely to create, the increase in tax revenue, and the increase in commercial, industrial or residential square footage. There is no place for speculative programs. This is not due to a lack of concern on the part of the city or the funders. It is generally recognized that brownfield reclamation provides public benefit. However, because of the need to distribute limited funds, the formula has to show the degree of benefit that specific projects provide. Proven ability to provide immediate benefit is important for the

funders of this work. While the inclusion of this indicator into the sustainability report

has improved outreach, the city remains quite limited in what it can do about brownfields.

Despite the success of the indicator, the way that measurement and funding are ordered

limit the overall potential for what brownfield clean-up can do for the city.

Teen Pregnancy

Like the relationship between homicide and sustainability, the relationship

between teen pregnancy and sustainability is not necessarily clear at first glance. The teen

pregnancy indicator takes a particular stance to issues of poverty and government

support. Coral Garner, the staff member in charge of the teen pregnancy indicator, had

this to say: "Well, I think in terms of contributing to the productive workforce, and so …

it's a fairly accurate measure of poverty, because more than likely teen parents are going

to be single parents and more than likely they aren't going to graduate from high school,

and more than likely their kids are going to be on some type of . . . governmental

assistance program, and their ability to be high wage earners is few and far between"

(Garner interview, August 27, 2010). Teen pregnancy, then, is an important indicator

because pregnancy is connected to the long-term possibilities for both mothers and their

children. Where there is teen pregnancy, there is a greater need for ongoing

governmental support for both mothers and their children (Hoffman 2006, Westman

2009).

The goal for teen pregnancy was to reduce pregnancies in the 15- to 17-year-old

age group to 46 pregnancies per thousand by 2010. While the target is presented as a

general goal, the presentation of the data and the discussion of the problem are framed in terms of race. While the city as a whole has been meeting that goal, there is great disparity between different racial groups. Whites have had a consistently low rate, which hides the high rates among minority communities, particularly the Hispanic and Native American communities. And although teen pregnancy rate among blacks still exceeds the goals, it has fallen significantly since 2006. The city does not report the number of teen pregnancies geographically. There are few enough teen pregnancies that reporting them geographically might lead to the identification of the teen mothers, which is unacceptable due to privacy concerns. However, Garner noted that there are basically four of eleven zip codes where teen pregnancy is a problem.

It is only since 2006 that Garner has seen the inclusion of teen pregnancy as a sustainability indicator pay off. Under the Pawlenty administration tobacco settlement money was diverted from public health to paying down the State's debt. With these cuts in funding, the work around teen pregnancy was put at risk. However, because the sustainability initiative is framed around issues of community health, both in terms of physical health and social health, work on teen pregnancy has remained important for the city. One strand of work ties teen pregnancy education with the work of the Mayor's youth violence prevention initiative. What this serves to do is to tie issues of pregnancy with other kinds of social problems, all of which are seen as related to poverty and inequality in the city. These connections are essential because problems like teen pregnancy are about so much more than just sex education and unprotected sex. They emerge from a complicated set of social processes.

Despite this, much of the work around teen pregnancy is focused on prevention based in comprehensive sex education. This addresses the very real knowledge gap in teens about how babies are made. The Department of Public Health convened an unofficial task force with members of the state board of health, the city, the University of Minnesota, the county health department and the state board of education to work with the Minneapolis public schools to revise health education standards. The attempt is to incorporate age-appropriate sexual education into a broader discussion of healthy lives. This is essential because when sex education situates the biological content in the context of the social relationships in which sex occurs, it is much more effective in combating teen pregnancy (Garner interview, August 27, 2010). The city has been able to secure funding for teachers to take additional credits in the health education curriculum. This is a second necessary step beyond the establishment of new curriculum guidelines. Teachers have to be knowledgeable and comfortable to effectively deliver the curriculum.

One challenge that has emerged is a move to increasingly make teen pregnancy funding focus on issues of prevention rather than on service for pregnant mothers. This is tied to the way the indicator is measured. Prevention is meant to reduce the number of teens who become pregnant. What gets lost is the way that the city can intervene and assist the women who do become pregnant. The services available for teen mothers can be essential for allowing them to improve their living condition. There are often situations where the services provided are unable to meet the needs of the clients because they are targeted in such a manner that that they fail to address the broader context within

which the problem emerges. Teen pregnancy is not just an issue of a lack of sex education but symptomatic of a series of structural problems. Garner conveyed the following story to illustrate this point.

> And maybe to solve the whole issue around, and this is a funny story, well, it's not funny, but I remember, I used to work with the Twin Cities Healthy Start Program, which was around infant mortality reduction, and I remember there was this one woman who, her husband was beating her up all the time, and so, ok, so, you know, from a social service perspective, you're talking to someone and you're really trying to encourage them, well, you know, this is an unhealthy situation and . . . do you need to go to a safe house or what are some of the things that we can do to [help you] bear your situation. And the only thing that this woman wanted was to get her stove repaired. So every time the social worker would go and would talk to her and ask her, well what do you need, or how can we help you, she just wanted to get her stove repaired. And the main reason why she wanted to get her stove repaired is because she knew that the reason why her husband was beating on her is when he was coming home from work she didn't have dinner ready. So she wanted to get that stove repaired because she knew if she had dinner on the table on time, then he would stop beating her.

The point of this is that the social worker had a framework for thinking about healthy lives and a particular suite of services that she could provide. What she could not provide was money to fix the cooking range. This fell outside the purview of the agency. However, the client thought that this would solve many of the problems that put her at risk. Garner used this story to demonstrate a broader point. She clearly sees that no social problem exists in isolation of its broader context and that sometimes the narrow focus of social services cannot address the broader structural logics that contribute to a problem. Work on teen pregnancy that only focuses on pregnancy is limited if it does not address the broader social-economic context in which teen pregnancy occurs. Garner tries to incorporate this insight into her work. However, both the indicator and the priorities of funders make it difficult to address the full set of structural impediments to pregnancy reduction. What the indicator approach currently fails to do is to think through the connections and to channel resources to the broader sets of issues. Each indicator remains in its own silo. Clearly, the indicator-based approach needs a mechanism to situate a social problem within its broader context. Garner again:

What are the basic things that you need, so that, you know, when you talk to one of these young people who if you think about the assets, the thirty assets, the forty assets that every healthy kid needs, why is it that they only have five or six of those assets . . . and some of . . . those assets really aren't personal, they're community things, you know, whether it's access to . . . a good school, and access to food, after-school programs; so really,

how do we more proactively work with some of our communities,

especially our communities of color to determine . . . what's needed, so

they can grow and they can thrive?

Garner presents a clear analysis of the potential of her work. She recognizes that

prevention based in sex education is important but also recognizes that there are limits to

sex education alone in preventing teen pregnancy; teen pregnancy is also about poverty

and that the effort to reduce the former is all about addressing the latter. Her position in

the Department of Health and Family Services makes questions of disparity and poverty

central to her work. Even so, with work funded by external agencies, there is only so

much that can be done with the indicator framed as it is, and funded as it is.

Tree Canopy

The urban tree canopy is extremely important for the city because it is a key

component of the park-like image of the city. Trees are an essential aesthetic element of

this and in addition provide important environmental services and economic benefits.

Trees improve urban air quality and reduce runoff. The shade they provide is an

important element in energy conservation and savings. They also are important for

property value and community stability (City of Minneapolis 2011b).

Good data on the tree canopy is essential for developing an approach to

management of the urban forest and to find funding to support that work. The baseline

study of Minneapolis's canopy, conducted in 2004, was based on a sampling rather than a

comprehensive count of trees and measure of tree canopy. In 2010, the lead staff member for the tree canopy index, June Mathiowetz, found a funding opportunity for a comprehensive satellite survey of the entire tree canopy of the city. She took the initiative to apply, and the city was able to partner with the University of Minnesota to produce a comprehensive tree canopy survey. This new survey was essential, according to Mathiowetz, because it allowed the city to identify problem areas and reach out to neighborhoods and block clubs to address the spatial deficiencies in tree canopy. She also saw it as a tool that would allow the city to make the case to funding agencies that there is compelling need for monies for tree planting in the city, since without the right data to measure the problem, it is exceedingly difficult to commit resources to deal with it.

The urban tree canopy has experienced three major challenges since the sustainability initiative began. A resurgence of Dutch elm disease in the mid-2000s required that thousands of trees be removed, leading to a net loss of trees in the urban canopy in the years 2003-2005. The arrival of the emerald ash borer in Minneapolis has presented a major new challenge to the tree canopy. After the initial ravages of Dutch elm in the 1970s, many of the elms were replaced with ash trees, which currently make up over 22% of the tree canopy of Minneapolis (City of Minneapolis 2011). While the state has initiated a program to introduce stingless wasps to destroy the ash borer, the city is assuming that there will be a net loss of ash trees over the next 10-20 years. Even so, the city is moving aggressively to deal with the ash borer, with funding from the state Department of Agriculture, in an attempt to slow the damage. Another challenge to the

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tree canopy came in the form of the May 2011 tornado in North Minneapolis. Though

there has not been a resurvey of trees, visual observations have indicated that the canopy

in several parts of North Minneapolis was severely damaged by the tornado.

The current goal for the tree canopy is to maintain the baseline level of 26% tree

cover from 2004 until the year 2015. At that point the goal changes from maintenance to

expansion; the city hopes to have a tree cover of 30% by 2030.[33] The City is struggling to

keep up with the challenge of tree loss both through disturbance and attrition. The

Minneapolis Parks and Recreation Board has averaged 3,800 tree plantings a year since

2003, but despite the 27,000 trees planted on public land, there has been a net loss of

nearly 6,000 trees since 2003[34]. The city has teamed with the local NGO, Treetrust, to

facilitate the planting of trees on private property. Local homeowners are able to get

trees to plant on their properties at subsidized rates; homeowners affected by the tornado

were given the opportunity to receive trees for free.

What Sustainability Does: Measurement in Action

There is a huge variety in the programs that emerge from the sustainability

indicators. In some instances, the city is working to connect grantors with partners. In

other instances, programming emerges from the indicator. Sometimes the city devotes

effort to making things happen; in others it devotes effort to better measurement and

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[33] The 2010 survey done by the University of Minnesota found that, based on the comprehensive 2009 data, the tree cover of the city measured 31.5%. The City's official reports have yet to incorporate these new measurements and have not developed a new set of goals based on the more accurate data set.
[34] Care of the trees once they are planted is a major issue. There was a program put in place to have the fire department help take care of some of the watering of trees in boulevards and other hard to get to areas, but there was not extra funding to accomplish this and the fire department had to try to fit it in along with their other duties in a period of fiscal tightening (ECT meeting 2010).

building more focused and functional indicators. The possibilities that are produced by the different indicators are outcomes not only of the specific indicators themselves but are shaped by a number of structural constraints that channel effort and resources in particular ways.

External funding is an essential element for the sustainability work of the city. Tax revenue is not spent on sustainability programs. As one staff member puts it, "The city's revenues go mainly for potholes and policing." This has important implications for the sustainability work of the city. First, programs can only be put into place if there is funding that can be secured to run them. Second, which indicators receive support and the kinds of programs that can be used to address the different indicators is dependent on national and international understandings of how different problems should be addressed and conceptualized. The shift in conceptual focus from an individual level to a systemic level between the Steps and SHIP funding in the Department of Health and Family Support, as described above, illustrates this perfectly. With a change in the national framework for understanding how obesity prevention should be implemented, the Steps approach was replaced, leaving its specific, smaller successes unfortunately abandoned for lack of funding along with its less functional elements. Fortunately, in the case of the tree canopy, external funding was found to do a remote-sensing analysis, enabling the city to improve its measurement of the tree canopy and thereby enable the possibility of funding for programs to protect and extend it .

It is not just the availability of external funding that enables work on particular indicators. If work on the indicator does not constitute much of the existing job of a city

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staff member, they must either face external pressure from an elected official or a personal drive to make things happen. Without these, indicators are less likely to invite serious activity because they come without support and resources. Again, looking at funding for the tree canopy survey, it is apparent that it wasn't just the presence of funding that enabled the work; rather, it also depended on the initiative of the staff member tasked with the responsibility for that particular indicator. In short, what is possible depends on the intersection of national and international agendas, local interest and staff motivation.

The outcomes of the indicators are also dependent on the department in which the indicator is located. Different departments have different mandates and different ways of approaching questions of inequality and fairness. Both the Healthy Weight and the Teen Pregnancy indicators explicitly deal with inequality and are targeted to address disparities between different communities of the city. A large part of this has to do with their placement in the Department of Health and Family Support, the mission of which is to address health disparity in the city. It recognizes that differently positioned people have different life potentials. Rather than treat everyone the same, DHFS works to remedy inequality in the city. In the initial vignette in my introductory chapter, I discussed how at a meeting of the Environmental Coordinating Team, the chair reframed the question of the emerald ash borer infestation in terms of how it will differentially affect various communities in the city. The Department of Community Planning and Economic Development is not tasked to remedy inequality and, as such, has a different way of approaching its work. CPED generally has an objective set of standards that guide its

programs. It is not as flexible in addressing disparity and making exceptions for

difference in circumstance (Lind interview, April 2011). In CPED programs that are not

specifically designed to address disadvantaged communities, there is a much smaller

chance that indicators will be operationalized in ways that mitigate inequality.[35]

The internal logic of the indicators also plays an important role in shaping what

they do. Indicators are by their nature limited snapshots that measure only a specific

function or aspect of a broader problem. As such, they limit the way that sustainability

can be addressed. In the decision to pose sustainability as a panel of variables, the city

has failed to develop an integrated vision that connects those variables and enables them

to be addressed from multiple angles.

The indicator of teen pregnancy clearly demonstrates this. Teen pregnancy is not

just about a lack of sex education, though this can be part of the problem. To be

sufficiently addressed, issues of sex in the contexts of relationship, of family structure, of

community support and of opportunity need to be explored. Additionally, the ties of teen

pregnancy to broader issues of poverty and education do not fit within the broader

structure of the indicator program. Teen pregnancy work is first limited by its

measurement, then limited by its disconnect from its broader context. Without a

sustainability plan, teen pregnancy reduction becomes a narrowly focused end point. It

has no clearly visible connections either to other indicators or to a broader notion of

sustainability.

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[35] This will be discussed in greater detail in the next chapter in the case of the Homegrown Business Development Program. CPED was unwilling to change the objective measures of viability to allow a low-income collective to gain access to low-interest loans for a food business start-up.

This is true for nearly every indicator. Each becomes an end in itself rather than a proxy connected to a broader, overarching goal.

Conclusion

Minneapolis has chosen an expansive set of indicators that connect sustainability with livability, a matrix of health, environment and community issues and measurements set up to pursue a sustainability that has at its core the lives and livelihoods of its residents. These indicators have the potential to be transformative for the city and its residents. This does not mean that sustainability work in the city will be necessarily be inclusive or will account for the lives and livelihoods of all residents of the city; sustainability values particular kinds of space and particular kinds of lives and practices while providing little attention to others. For example, while the health indicators are meant to improve the health of low-income and minorities in the city, they also construe those lives as a problem that must be solved. As such, these residents become visible only through the ways that they deviate from the acceptable standards of health. Interventions that address body weight, asthma and lead poisoning are all important for improving the lives of residents. But because the sustainability indicators fail to account for the connections between indicators and the array of social processes that contribute to health problems, the broader conditions of people's lives are erased; people are overweight; they have lead poisoning; they are pregnant teens. Care and intention are necessary if these populations are not to be stripped of their fullness as human beings and defined by their deviations from health norms.

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In the choice of environmental indicators and the constraints of the indicator program, certain environments are valued over others; as with health indicators, they do not reflect a comprehensive or inclusive view of the interests of all residents. For example, the Living Green indicators present a particular aesthetic vision of a clean, green city. The aesthetics of sustainability are tied up with the question of who benefits from sustainability. It is not that there is not universal benefit from a clean and beautiful city, but this aesthetic vision is primarily anchored in the interests and values of the urban bourgeoisie. The green aesthetic emphasizes engagement with the spaces of a consumption economy as a consumer rather than as a producer or a worker.[36] Focusing on spaces of consumption rather than cultivating more desirable spaces of production in the city again conveys the benefits of sustainability more consistently to certain groups over others and overlooks the interests of equity in the sustainability equation.

To understand what sustainability does, it is not enough to look just at what is being measured and how; it is essential to be attentive to the movement from measurement to action. Measurement is important insofar as something is done with it. But, as I have shown, there is considerable variation in the way that indicators are deployed in action. Without a sustainability plan, there is no clear or consistent vision of where the city hopes to go or how the indicators might lead the city to the future. There

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[36] In examining statements about the green city or the sustainable city, descriptions inevitably talk about what a beautiful clean environment it is that people are able to consume and enjoy. Rarely do these descriptions talk about where people work in these green and sustainable cities. They fail to account for where the goods that these cities use are made. Often the kinds of clean environments that they describe are environments devoid of any sort of heavy industry. The products of that industry are present, but they are produced somewhere else. The vision laid out in the 50YR report sums up many of these visions.
> "I can walk to the train station so my grandchildren and I can take the train to Chicago to see relatives and friends. There are many trees along the route. The air is clear. There are few cars. Many other people are walking. There are nearby markets and sidewalk cafés" (CRC 2003:5).

is no guidance on how the indicators should be prioritized. As a consequence, each indicator functions independently of the others. Forward movement on the indicators is more a result of the individual initiative of city staff members than it is an outcome of the indicator program. Furthermore, the kinds of programs that are implemented also depend on city staff and the departments in which they are located. In some instances, staff can expansively imagine and act upon their indicator. In the DHS, for instance, the staff sees its work as located within a matrix of interconnected social forces and has the leeway to secure grants to address the indicators in multiple ways. In the case of brownfields, what the city can do ends up being quite limited. The city is interested in and effective at reducing brownfields, but it does not have the funds or the mandate to push its work further.

Many of these limitations emerge from the structural constraints of indicator programs at the urban scale. Within the federal system of the United State, cities have limited powers. Both state and national policy constrain the kinds of actions cities can take and the kinds of funds a city can raise. Minneapolis has larger goals than it can actually achieve because state and federal rules prevent it from developing standards that are as stringent as desired (Prest interview, August 3, 2010). This is not the only problem, though. Rather than being based in a clear vision of the future, most of the indicators focus on what the city is already doing. Indicators are measured using data that is already being collected by the city, on areas of concern that the city was already dealing with. As the sustainability program unfolded, there have been efforts to refine measurement and to collect data in new ways, the tree canopy indicator being one such

instance. The city realized that they did not have adequate data and needed a different system of measuring the canopy. The new data has allowed the city to have a better view of the urban forest, but this has not fundamentally changed the city's approach to trees in the city. These approaches focus the gaze of sustainability on the current operations of the city rather than setting ambitious goals for the future. The grounding of sustainability indicators in the present rather than in a vision for the future is both politically and financially expedient. It does not require that the city allocate new funds for programs; the city can continue with the work it is already doing. It is politically expedient in allowing the city to pursue sustainability without making changes. It is a statement that the city is already on the path to sustainability and that it just needs to keep on doing what it is doing to reach its goals.

The indicator program put into place by the City of Minneapolis is a key component of the way that sustainability serves to order the city. The panel of indicators brings certain activities, certain groups and certain spaces into focus and identifies some groups and spaces as belonging to the sustainable city and others as needing intervention. In some cases sustainability serves to encourage certain groups and activities. A sustainable city involves more people on bicycles, more people eating locally produced foods, more trees, more rain gardens, and more solar panels. In other instances, sustainability defines problems. Pregnant teen bodies, obese bodies, carbon-producing activities, and teenagers who fail to graduate from high school all are problems for the sustainable city.

This kind of focus can serve to channel resources to populations that face serious inequality and disparities in life chances but the indicator based approach often fails to grasp the complicated causality of income and health disparities in society. It channels work into the specifically defined problem while failing to work towards broader structural transformations that would substantively address why those problems exist. Those people and activities that it defines as problem must be brought into conformity to have a place in the sustainable city. The alienation that was apparent in the comments from councilmember Samuels at the beginning of chapter two is made in part by the way that the indicators serve to see certain groups only as problem rather than as full people.

The imagination of sustainability present in the indicators is primarily grounded in the interests and life realities of the city's white, bourgeois residents. While there can be broader benefits from the indicator program, the indicators tend to erase and elide alternative imaginations of what the sustainable city might be. This does not mean that sustainability work cannot advance issues of equity or operate for the benefit of non-whites and non-bourgeois residents. It is in the implementation, where the universals meet particulars on the ground, that we can begin to understand who the sustainable city will work for.

Chapter Four

Making Sustainability: Local foods and food justice in the sustainable food system

Food is central to the history of Minneapolis, the city of mills. In the late 19th

century, half of the world's grain was milled in Minneapolis (Cronon 1992). Cargill,

Pillsbury and General Mills have made Minneapolis an important node in the global food

system. This global reach has been a central component of the Minneapolis economy. R.

T. Rybak, the mayor of Minneapolis in 2012, has visions to put Minneapolis on the map

for a different kind of food system; he sees Minneapolis as an innovator in the

redevelopment of a local food economy. He aims to establish a local food system in

Minneapolis as a means to address the environmental implications of the global food

system and also to boost the Minneapolis economy. As such, he presents the city's

efforts around food as essential for the transformation of Minneapolis into a sustainable

city.

Homegrown Minneapolis is the program, set into motion by the mayor, which is

meant to lay the foundations for the establishment of a local food economy in

Minneapolis. Established in 2009, Homegrown is "a citywide initiative expanding our

community's ability to grow, process, distribute, eat and compost more healthy,

sustainable, locally grown foods" (City of Minneapolis 2012). Unlike other sustainability

efforts in the city, Homegrown adds a number of programs to what the city is doing

rather than merely augmenting programs that the city already has in place. Because of

this, Homegrown provides an important opening into both the city's definition of sustainability and the potential for what sustainability work can accomplish in the city.

The issue of food provides an important site for exploring sustainability more broadly. Food is clearly situated at the intersection of the three Es of sustainability. The methods of food production and consumption have important environmental consequences. The food system is a major component of the economy. Finally, it is a matter of equity: food is central to nutrition and health, and lack of access to adequate food is an important element of poverty. Different groups and individuals involved with the Homegrown program have very different ideas about what the boundaries of Homegrown should be and what, programmatically, Homegrown should do. The main axis of tension that has emerged is around the question of the balance between work meant to make the food economy *local* and work meant to improve *food access* in the city.

This chapter explores the policies and programs that have been put in place under the umbrella of Homegrown Minneapolis. In it, I argue that there is a creative tension between demands for a local, environmentally sound food system and for one that allows for greater food access. It is because there is not a clear consensus about what Homegrown should do that possibilities for justice emerge within the sustainability agenda. The first section of the chapter examines the broader ways in which the tension between questions of access and locality play out within food politics. This tension is in no way unique to Minneapolis; policy and activism around food regularly struggles with this question around the country. The chapter then moves to examine the origins and

administrative structure of Homegrown. These have important implications for what is made possible through the work of the Homegrown program. It will then address the major policy and programmatic outcomes of Homegrown. Before building programs for a local food economy, the city first had to establish policy and legal frameworks to define what the city wants to be doing and to ensure that those efforts are legal. This took the form of the Urban Agriculture Policy Plan, which gives clearer definition to different agricultural activities and land-uses and lays out the necessary changes to the zoning code to allow for local agriculture to work in the city. Programmatically, the city has developed programs in three areas:

- A business development program meant to encourage the processing and transportation of local foods

- A farmers' market distribution mechanism for local foods

- A gardening hubs program meant to facilitate self-production

The tension between local foods and food justice runs across all of these programs and each has different potential for mediating this tension.

Local Foods and Food Justice

Homegrown Minneapolis is a program that emerges from a broader societal interest in the structure of the food system. Over the last 20 years, there has been increasing concern about the consequences of the "conventional industrial agro-food complex," which is characterized by extensive industrial farms. These farms require large quantities of chemical inputs in the form of fertilizers and pesticides as well as

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large-scale irrigation and water diversion, all of which pose a threat to both local and global ecosystems. Moreover, such farming is done in monoculture, with a handful of agricultural companies supplying the seeds, which leads to centralization and concentrated control of power over the global food supply (Shiva 2000, Maye et al. 2007, Alkon and Agyeman 2011). The agricultural system produces food for distant places. This leads to the selection of durability over taste in food products and a massive, carbon-intensive infrastructure that is essential to move the food around the world. Finally, the systems of subsidies that drive agricultural production lead to the overproduction of corn and soy, the derivatives of which fuel the processed food industry in the United States and create problems for nutrition and the health of the population.

What is necessary, according to opponents of the conventional industrial agro-food complex, is "self-reliant, locally or regionally based food systems comprised of diversified farms using sustainable practices to supply fresher, more nutritious foodstuffs to small-scale processors and consumers to whom producers are linked by the bonds of community as well as economy" (Kloppenburg et al. 1996:2). The last 25 years have seen a proliferation in social movements working to challenge different elements of the conventional agricultural system through organic food, slow food, food security, alternative food chains, permaculture, and other permutations of localist visions of production. Together, these approaches, labeled collectively as the alternative food movement, are working to imagine and build a food system that aims to meet the needs of people and localities rather than the profit margins of the global agro-industrial complex (Maye et al. 2007).

It is these visions of the alternative food movements that drive the work of Homegrown in Minneapolis. Mayor Rybak mobilizes the food movement's analyses of the problem and sees the combination of the movement around sustainable food production and the foodie consumer movement as the solution to the problems of the conventional food system. "Food is the most basic thing we do. Food in America today is also deeply dependent on carbon, on inputs that are polluting our land. And in the process we have just ripped the taste out of what we eat. Good news is that there are two really strong social movements that are about to connect in the middle: the urban, slow food, homegrown foodies connected with the rural emerging sustainable farmers, local growers" (Rybak interview, May 15, 2011). It is by connecting alternative producers and discerning consumers that the food system will be transformed, reducing pollution and carbon output, and improving the quality of the food that is available. The other reason Rybak sees the development of a local food system as essential for sustainability is that it leads to the expansion of local food businesses and stimulates and strengthens the local economy.

Locality is not a simple concept.[37] What constitutes the local is articulated in different ways in different places. The way that the concept of the local is deployed has important conceptual and political consequences. Because of this, it is necessary to

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[37]While conventional wisdom may see the local as a given small-scale geographic unit, studies in geography have challenged this conceptualization and instead pose the local as a relational construction that is made and mobilized in different ways (Smith 1992, Cox 1997, DeLaney and Leitner 1997, Swyngedouw 1997, Escobar 2001). For these scholars, it is the political act of defining and mobilizing the idea of the local that is important. The idea of locality has specific political uses that allow political actors to achieve specific goals and frame the discourse around which they are mobilizing in particular ways (Featherstone 2003, Escobar 2001). It is because of this that we must pay careful attention to the different ways that the idea of locality is being used to discuss food systems: the political and ethical claims of adherents of local foods are tied up with their understanding and use of the idea of the local.

understand how different groups are mobilizing the idea of the local in their discussion of

the food system. Scholars of the food movement have already devoted significant

thought to this question (Depuis and Goodman 2005, Feagan 2007, Mariola 2008, Blake

et al. 2010, Little et al. 2010, Delind 2011, Kremer and De Liberty 2011). There is no

need to rehash the totality of this literature, but there are two elements of the discussion

of the local that are important to foreground. First, many activists and some scholars see

re-localization as a turn towards a more natural or more authentic system of production

(Hess 2009, Murdoch 2004). In making these claims, they fail to recognize that all

systems of agricultural production are articulations of humans and the environment.

While industrial agriculture transforms the landscape at a much greater scale than earlier

forms of cultivation, it is just another way of doing agriculture. Yet, denying that local

agriculture is more natural or authentic does not mean that critiques of industrial

agriculture are invalid. Rather, it shifts the critique to a discussion of the way that

different modes of agriculture production open up different kinds of possibilities for

differently positioned groups and individuals. An insistence on the authenticity and

natural-ness of local agriculture runs into the same problems that advocates of

sustainability do when they make claims based on a unitary external nature: it effaces the

ways in which different agricultural systems, even local ones, are produced and result in

differential forms of access and possibility.

Second, there is often a tendency to conflate the local with community (Feagan

2007) and to represent the invigorated community that local food summons as one of the

important elements of local food systems to sustainability. The enlivened community, it

is maintained, builds connections between farmers and consumers and solves the lack of democratic control that characterizes the corporate food system. The ascription of virtue to the community and the idea that communities will naturally be more democratic, inclusive and beneficial needs to be interrogated. Communities are heterogeneous groups in which social position has important implications for access to community resources (Sultana 2009). This is not just an issue of intentional discrimination or exclusion but, rather, an issue of the ways that socio-spatial formations are produced through historical relations of privilege that leads to subtle forms of discrimination and exclusion. The community that has mobilized around the issue of local food tends to be white and middle-class. This has implications for construction of the norms, ideas, culture and spaces of the local food movement. The difficulties emerge from the way that the particularities of the movement are universalized as an ethical, inclusive community. The local food movement sees itself as holding a normative ethical position that all people can and should follow. What they fail to recognize is that their ethical position is anchored in particular race and class locations. While organic, fresh and local foods have health and environmental benefits, their desirability and affordability are situated within particular ways of valuing and understanding the world.

The mythologized community and the idea of local as a more natural and authentic system of production are central elements to the production of an ethical food subject who belongs to and advocates for local foods. For the ethical food subject, food is not just a form of sustenance; it is an essential component of a proper environmental politics. Our consumption habits are a political statement about the nature of democracy

and the primacy of the environment. This leads to a set of food practices that indicate the

degree of commitment that one has to the goals of the movement. The popular literature

that has emerged from the alternative food movement is one of the best places to identify

the set of practices that define the ethical food subject.   The writings of Michael Pollan

(2006), Barbara Kingsolver (2007), Eric Schlosser (2002), Novella Carpenter (2009) and

Catherine Friend (2008), among others, lay out a case for what is wrong with the

conventional food system and tell us what we can and should do about it. They enjoin

the following.[38] The food we consume should be locally produced. It should be organic.

If meat or eggs are consumed, it should be free range, grass fed and cage free. As much

as possible we should buy produce directly from the producer at farmers' markets or

through community supported agriculture. Even better, we should produce the food we

eat ourselves, either in our own yards or in community gardens. Where this is

impossible, buying organic foods from the natural foods coop is next best. When the

food is consumed, we are to compost as much of the waste as possible and recycle the

packaging we can't compost. This full array of consumption practices is seen as the only

truly virtuous way to eat. The ethical food subject follows these practices.

Despite their presentation as universally possible and desirable, the food practices

of the ethical food subject are based in a particular experience of the world. They are

based in an ethical calculus of cost that doesn't recognize that the constraints to

consuming goods at a higher price that are particularly experienced by lower income

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[38] The following list of practices is distilled from the writings of the afore-mentioned authors. Important to
all of them is a personal narrative of engagement with these ethical practices. They serve as testimonials: I
can eat locally, so can you (Kingsolver); I can be an urban farmer, so can you (Carpenter). We can do
these things. We can engage in these ethical practices and we are just people like you, so you should be
inspired to do it too.

households. A number of proponents of local and organic foods make the argument that the external environmental costs must be rolled into the price of food to deter environmental harm (Alkon 2008; Henry interview, April 19, 2011; Meyer interview, May 13, 2011). In households where the food budget already is inadequate, an increase in food prices for healthy, local food will serve to decrease food security rather than improve nutrition. Often, self-provisioning through gardening at home or in a community garden is presented as a low-cost alternative to purchasing local food. Production of food for the self is the height of virtuousness. However, the emphasis on self-provisioning ignores the ways that the security of land tenure and time are both essential elements for personal cultivation of food. Herein lies the greatest problem of the local food ethic; it universalizes a particular standard of food consumption and ignores the way that different class and race positions impact how different individuals and groups can participate in this food culture (Guthman 2008a, Guthman 2008b, Slocum 2011). It assumes that everyone can afford to pay for the environmental costs of their food and that people have time to grow some of their own food. Even in a food system that massively subsidizes the production of less healthy food, people are unable to eat healthily (Alkon 2008). The way that the question of the ethics of food is framed often serves to exclude people who are neither white nor middle or upper class (Guthman 2008b). Members of the food movement have to be both willing and able to engage in alternative food systems which tend to be more expensive than food produced in the industrial food complex (Alkon and Agyeman 2011). Adherence to the narrative of the

food movement tends to elide other narratives of why alternative food systems are important and how they impact people.

However, the narrative of local foods is not the only narrative of the food movement. There is a growing body of activist and academic work that places an emphasis on food justice in addition to the main concerns of the bourgeois environmentalist perspective. The food justice movement works to build a narrative around food that doesn't just refer to "ecological sustainability community and health, but also to racial, economic and environmental justice" (Alkon and Agyeman 2011: 4). This demand for a more broadly defined food movement is not an attempt to supplant sustainability; proponents are not saying that local is bad. Rather they argue that there must be a focus on how issues of structural racism and structural violence fit within both dominant and alternative food systems. Without this, alternative food systems can easily serve to perpetuate some of the same kinds of problems that plague standard industrial agriculture. Local food systems are essential for developing food justice, both in the ways that they provide new opportunities for jobs and access to food and also for the ways that they can incorporate democratic control into the food system. But the vision of the local put forth by the food justice demands reflexivity – that the local is not synonymous with goodness but instead can be mobilized to achieve positive outcomes through particular forms of engagement. With reflexive engagement, local food systems can provide outcomes where "all communities, regardless of race or income, can have both increased access to healthy food and the power to influence a food system that

prioritizes environmental and human needs over agribusiness profits" (Alkon and

Agyeman 2011: 6).

To date, there has been inadequate attention to issues of food justice within the

alternative food movement (Allen 2004, Allen 2008, Allen 2010). This does not mean

that there is no place for justice within alternative foods, only that concerted effort is

necessary to bring justice into the alternative food movement. Across the country,

individuals and groups, both marginalized and mainstream, have been pushing for

alternative food movements to address questions of justice (Alkon and Norgard 2009,

McCutheon 2011, McEntree 2011). Detroit is a particularly apt example. The collapse of

the auto industry in Detroit has led to an urban crisis. Over 25% of land in the city is

vacant, with some neighborhoods experiencing up to 85% vacancy rates

(Sustainlane.org). Urban agriculture has become a major tool there to hold together

neighborhoods. African Americans, who comprise over 80% of the population in

Detroit, have played a key role in transforming the city's vacant lots. This is very

important for enacting food justice, according to Malik Yakini of the Detroit Black Food

Security Network, because African Americans have historically experienced agriculture

as a system of surplus extraction and exploitation through both slavery and share-

cropping (Democracy Now 2010). Retaining control over agricultural projects is

essential because it is part of reframing how African Americans understand agriculture

and helps them mobilize on their own behalf. Control allows allows them to determine

what is grown and where the profits of growing go. This is an important element in

building a just form of community food security, defined as the "provision of adequate

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amounts of culturally appropriate food that is easily accessible and grown in a sustainable manner" (Alkon and Agyeman 2011).

The tension between the demands for an environmentally focused local food system and a focus on food justice is a central element of Homegrown Minneapolis. The purpose of this chapter is to understand how this tension is mediated. The design and implementation of Homegrown Minneapolis plays an important role in opening up spaces for both. While much of the governmental impetus and community action surrounding Homegrown has come from an environmentalist perspective (Garwood interview, March 11, 2011; Rybak interview, May 15, 2011), voices that have been pushing Homegrown to address food justice have been present from the beginning and have been important in the way Homegrown has taken shape. The outcome has been a diverse set of programs, some targeted at building a local food economy, others focused more on building systems of access.

Structuring Homegrown

The Homegrown initiative emerged from the Mayor's office and was the culmination of a long-term interest that he has had in local food. At a community meeting celebrating the culmination of Phase 2 of Homegrown Minneapolis, the mayor told an enthusiastic crowd that work on Homegrown was his passion and the best part of his job as mayor (Homegrown Meeting, 12/12/2011). This passion, along with very strong community support, has made Homegrown a very active city program. The city has been involved on two fronts to improve the local food economy. First, they have

been working to alter the regulatory framework to remove barriers and regularize a place

for the food economy. Second, they have been developing programs to promote the

different elements of the Homegrown initiative.

Like the broader sustainability program, there has been pressure to move the

process rapidly along toward action. After the Mayor's announcement of Homegrown in

December of 2008, city staff moved quickly to invite community partners to engage with

the city into the first phase of the program. During this phase, four committees were

established to identify barriers to the development of a local food economy and provide

recommendations to the city about what needed to be changed to move forward. The

committees were organized around Farmers' Markets, Community, School and Home

Gardens, Small Enterprise Urban Agriculture, and the Commercial Use of Local Foods.

These committees were co-chaired by city staff and community members, usually

individuals involved with or working for organizations with expertise in the area their

committee dealt with. Each committee met four times over the course of the first five

months of 2009, and in conjunction with community members in attendance were able to

identify and prioritize the main challenges in each area. These in turn were submitted to

the central Homegrown steering committee, which compiled the findings in a single

report. The final report of phase one was published in June of 2009. It identified 72

recommendations and 146 detailed steps that are important for realizing the goals of

Homegrown. These establish a clear and comprehensive set of goals that can guide the

city through the process of implementation. The final report for Phase 2 of Homegrown,

the implementation phase, goes through the final steps and recommendations one by one and explains what the city has done to move each forward in the last 18 months.

The city has chosen speed over thoroughness in its approach to Homegrown. One community partner expressed some exasperation with the city's decision to move so rapidly. Cleveland, this person said, spent two years framing how to have the discussion and who should be involved before they began their work. There were four months between the rollout of Homegrown and the submission of the initial set of recommendations. While community members were involved on each of the committees, these initial efforts had limited visibility and limited participation. Initial leadership emerged from the mayor's office and from the mayor's networks of connections. There has been a failure to incorporate the grassroots at the planning stage; Homegrown has gone to community partners with programs in hand asking those partners to build a constituency around pre-designed programs rather than looking for community partners to help define what the needs and best approaches are (Sundiata interview, March 29, 2011). While some of the most important voices on food in the city were incorporated into this process, there were significant oversights as well. There was a striking gap in minority participation in the early Homegrown work. The leadership recognized this as a major problem, and efforts were made to bring more minorities into the process after the program was initiated. However, the belated efforts to include minority voices were not particularly effective in part because of frustration over the lack of initial invitation: The Minnesota Food and Justice Alliance, one of the major food justice organizations in the city, has yet to substantially engage with Homegrown for this very reason (Blecha

interview, January 2012). Though the city has made efforts to fill in the gaps after the

fact, the rapidity with which it has worked to vision and implement Homegrown has

functioned in exclusionary ways. The desire for results and programs on the part of the

mayor and councilmembers is understandable; they want to demonstrate their

commitment and their efficacy. The long-term efficacy of the program and its current

efficiency are both undermined, however, by the failure of the city to thoroughly catalog

the variety of groups that are engaged with the food system in Minneapolis and to engage

them in the Homegrown program. There are conceptual gaps and risks that efforts will

be duplicated as a consequence of this failure.

The Homegrown Phase 1 Report is essential for understanding what Homegrown

means, because in addition to recommendations it sets down the justification for the

program and the role of the city in the development of a food economy. As mentioned,

central to Homegrown is the idea of a local food economy. The city recognizes that local

can be many things, but that in the end that it should encompass the four principles that

the Kellogg Foundation lays out for "good food": it is healthy, it is green, it is fair, and it

is affordable. These four factors go far beyond the geographic sense of local and work to

incorporate different environmental and justice logics into the program. The conflation

of good food with local food opens room for slippage in what Homegrown is actually

about. Locality becomes less important than these environmental and social qualities that

label food good. While the report definitely implies that good equals local, there is space

for non-local food within Homegrown as long as it meets the definition of good. Even

within Kellogg's definition of good, there is ambiguity – the four qualities do not

necessarily come together in any food product. It is possible for food to be green and

healthy and totally unaffordable. Similarly, food could be fair but not green. This way of

defining local defers the tensions that come about between questions of locality and

access instead of working to resolve stakeholders' different expectations and desires for

Homegrown. It allows for food that is merely affordable and not green or local or fair to

be funded through Homegrown.

It is not just the conceptual framework that is important for shaping what is

possible in Homegrown; financing also plays a huge role in shaping what can and cannot

be done, particularly for the programming that has been put in place. Funding does not

come from the city budget but instead depends on a set of grants that the city has been

awarded. The grantors and the work they seek to fund play an important role in what

Homegrown can do. Initial funding for Homegrown came from both State Health

Improvement Program (SHIP) funds and Communities Putting Prevention to Work

(CPPW) funds. Both of these funding sources were designed to deal with obesity and

public health and, as a result, Homegrown was housed in the Department of Health and

Family Services (DHFS). Because of the requirements of these grants and the mission of

DHFS, a strong emphasis on access to healthy food has become a mainstay of the

Homegrown program. There have been programs to increase the availability of fresh

produce in corner markets, to build a bike/walk center in North Minneapolis, to enable

farmers' markets to use electronic benefit transfer (EBT) systems so people can use food

stamps at the farmers' markets, and to put a matching funds program in place to

encourage the use of the farmers' market.[39] It has influenced the geographic distribution

of programs, with less advantaged neighborhoods receiving a greater proportion of

benefits. It has also led to arguments about what local food really means and whether the

focus on access is watering down the efforts to build a local food economy. In the desire

to ensure that people have access to whole, healthy, fresh fruits and vegetables, there is a

tendency to accept food sales and donations from any business or grower that can provide

them. If it is a question of accepting only local foods or making sure that people have

fruits and vegetables, DHFS will opt to ensure access before guaranteeing locality

(Garwood interview, March 11, 2011).

Making a Place for Agriculture in the City: Drafting an Urban Agriculture Policy Plan

Jeremy McAdams farms mushrooms in the city of Minneapolis[40]. Starting in

2009, he established log cultivation of mushrooms in his yard. Over three years, he

expanded his operation to 800 logs – producing a little less than 200 pounds of

mushrooms in his first growing season (2010) and 400 pounds in the second (2011).

Mostly he grows shiitakes but has been ramping up his production of oyster mushrooms

as well.   The 800 logs, most of them about 4 feet long and 3-8 inches in diameter are

spread out in the yards of friends and neighbors in the Powderhorn and Corcoran

neighborhoods of South Minneapolis. His locally produced mushrooms were in high

demand the first two years and he sold to both local restaurants and the Seward Natural

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[39] The matching funds program, called Marketbucks, provided up to five dollars in matching funds when
EBT (the modern equivalent of food stamps) was used at the farmers market.
[40] The account of McAdams's mushroom farm and his experience comes from an interview with him on
April 18, 2011.

Food Coop – unable to fully fill the demand from any of his clients. Though he hopes to continue expanding his operation , he sees himself remaining a small-scale producer. At the largest, he imagines his operation would not occupy more than an eighth of an acre, or the size of a standard city lot. While he feels that it is right and important to farm in his neighborhood, he has received three citations from the city over the summers of 2010 and 2011. Commercial activity in the yards of residences in R1-zoned residential neighborhoods is illegal according to city code; as a result, McAdams' mushroom operation is technically illegal. But this is not the only reason he has been cited. The first ticket he received was for the improper storage of firewood. The second cited him for both commercial growing and what he described as improper aesthetics. Mushroom farming does not look like an activity that belongs in urban yards. The cost of citations and anxiety about continued challenges to his urban farming operation has made him consider moving his operation to the suburbs.

Earlier in 2011, the Mayor had visited McAdams' operation and had been very excited about what McAdams was doing (McAdams interview, April 18, 2011). It is the kind of small business that the mayor wants to see emerging in conjunction with Homegrown Minneapolis. The problem is that there currently isn't a place for agriculture in the city. Phase 1 of Homegrown Minneapolis called for drafting "a citywide topical plan on community gardens and urban agriculture" (City of Minneapolis 2009). The outcome of this was the Urban Agricultural Policy Plan (UAPP), prepared by the Department of Community Planning and Economic Development (CPED). The main purposes of this plan were to identify city codes, policies and regulations that were

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impediments to the development of a local agricultural economy, to support the removal

of these barriers, and to identify sites and incentives for local food production (City of

Minneapolis 2011). Second, it was meant to clarify or establish definitions for different

forms of urban agricultural land use for city code.[41] Additionally, it was meant to

provide guidance to improve the ability of institutions involved in the processing and

distribution of foods, like farmers' markets, to function effectively and legally.

The UAPP is a broad-reaching document that does more than just clarify code. It

is an attempt to reimagine the city as a place where food is grown, processed and sold. It

does this not by establishing a coherent vision for the place of agriculture in the city.

There is in fact no single place where the city organizes its visions and goals for urban

agriculture – they are spread out in the city goals, the comprehensive plan, Homegrown

Minneapolis, and the sustainability plan (Arnold interview, March 11, 2011). Instead, the

UAPP is a document that supplies an imagination through sheer detail. It discusses the

potentials for making rooftop gardens possible, what is necessary to have garden space

included in new construction, how to better formalize and make permanent the city's

farmers' markets, even the possibilities for hooved animals to be kept in city limits.

While the UAPP presents these different visions of an agricultural future for

Minneapolis, there is some danger in its doing so. There is no clear consensus,

particularly on the city council, for how agriculture should be included in the city.

Details that radically change the aesthetic and economic structuring of the city have a

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[41] In particular, the differences between home gardens, community gardens, market gardens and urban farms needed to be clarified. There is a different level of intensity of cultivation and commercialization for these different kinds of land uses, and there was a need to clarify what exactly they are and where they are allowed.

good chance of being stripped from the document. While councilmembers all signed on to Homegrown as a program the city should pursue, many of the councilmembers are not particularly engaged with the details and may be opposed to some of the specific ideas advanced under the program (Garwood interview, March 11, 2011).

One important issue at stake with the UAPP is the aesthetic make-up of the city. Agriculture has a particular look; it has a particular smell – and these smells are not perceived as appropriately urban smells (Henry interview, April 19, 2011). There is a valid question about the aesthetics of agriculture in the city: after all, cities have spent the last one hundred years or so modernizing and removing the vestiges of rural life from the urban. Residents have particular expectations about the care of lawns and the types of activities. The city regulates lawn height and the broad aesthetics of yards. While comments from the public on the UAPP have been unanimously in favor of the proposal to allow commercial agriculture in residential and industrial areas (Arnold interview, March 2011), there is concern among councilmembers that change will lead to conflict; that residents will not know that they are opposed until the aesthetic make-up of the city as not-rural is altered through the building of larger scale gardens for commercial purposes both in individual yards and privately owned undeveloped lots (Garwood interview, March 11, 2011). McAdams, in his analysis of why he was cited,[42] talked about how mushroom farming just looks out of place, and whether it was in a residential or an industrial zone, does not fit the traditional aesthetic of what the city should look like.

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[42] Citations are complaint driven, which indicates his citations came when someone did not like what McAdams was doing.

The concern about allowing city land to be used for agriculture is not just one of aesthetics. The question of what is the highest or best use of land is central to the job of city councilmembers. The city is looking to develop land in a way that increases its tax base and optimizes the land's value. Councilmembers have also expressed concern over the freeing of industrial zoned land for agricultural purposes, arguing that industrial zoned land should be exclusively for industry because agriculture will not bring enough employment or tax revenue to justify its usage of industrial land (Garwood interview, March 11, 2011). Even in residential areas there is concern that longstanding use of empty and abandoned lots for agriculture would prevent them from being developed for higher uses such as industry or residential uses if the market turns. These are valid concerns; industries produce more jobs and more value (Leigh and Hoelzel 2012). Proponents of the agricultural policy plan argue that councilmembers need to take a broader view of what the city is hoping to achieve – highest purpose needs to incorporate more than just raw monetary consideration to encompass a combination of monetary and functional goals.

While the UAPP is recommending changes to many different elements of the zoning code, what is possible on residential zoned land is at the heart of what many advocates for Homegrown Minneapolis see as important. They want agriculture to find a place in the city. They want individuals to be able to turn their yards into commercial growing spaces. These elements are essential for both the vision of a local food economy that addresses environmental concerns and one that expands the freedoms that people have to make a living in their own spaces: environment costs are decreased through the

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localization of production, freedom through the opening of the yard to entrepreneurial possibility. While the UAPP passed a city council vote in April of 2011, there is still uncertainty about whether commercial agriculture will be allowed in residential zoned property. The zoning recommendations have to pass through two more stages of review, which could derail the plan's procedures.

The Local Foods Resource Hubs Program

While the possibilities for commercial growing on residential lots is in a tenuous position, there are no prohibitions against growing for personal use. An important element of Homegrown is facilitating the ability of people to grow food for themselves. The Local Foods Resource Hubs program is one of the larger programs established under the rubric of Homegrown Minneapolis. This program, run by the local non-profit Gardening Matters, aims to increase the quantity of food produced by private individuals in the city by bringing together gardeners from different neighborhoods of the city to facilitate the building of community and the sharing of knowledge and skills.

Funding for the Hubs program came from the "Communities Putting Prevention to Work" grant, a federal stimulus grant designed to decrease the impact of chronic disease, particularly obesity, through the implementation of policy, environment and systems change (Musicant interview, August 3, 2010; Mathiowetz interview, November 3, 2010). The grant was awarded to the city's Department of Health and Family Services and provided funding not just to the resource hubs program but also for a number of other Homegrown-related programs and programs beyond the scope of Homegrown. The

location of the funding in the Department of Health and Family Services is significant. As discussed in the previous chapter, the mission of the DHFS is focused on addressing issues of health disparity in the city. Because funding for Homegrown is moving through the DHFS, Homegrown has a number of programs that are designed to address disparity in the food system and improve access to healthy food for minority and marginalized populations of the city, in addition to building a local food economy. While a local food economy certainly can work to address issues of food justice, there is nothing necessarily just about a local food economy.

The Minneapolis program is based on the work of the Garden Resource Collaborative in Detroit, Michigan. In the early stages, city staff and community partners decided that the Detroit model would be the most effective for Minneapolis to follow and invited Ashley Atkinson from The Greening of Detroit to give workshops and help provide expertise and inspiration for the Minneapolis program. The Detroit program is a collaborative among three gardening focused non-profits (Greening of Detroit, Detroit Agricultural Network, Earthworks Urban Farm) and the Michigan State University extension service. Each partner brings a different competency to the table – seed and seedlings, educational services, land, etc. Together, they established a system of geographic clusters where urban farmers and gardeners in distinct geographic areas of the city could band together to share skills, inspiration, work and ideas (Kavanaugh 2006). The cluster model is meant to facilitate community interactions in addition to the broader goal of increasing food production in the city.

While people involved were generally happy with the model that was chosen, a couple of different people who were involved questioned the selection of the Detroit model.[43] Both the model itself and the way it was chosen were seen as problematic. Detroit confronts conditions very different from those of Minneapolis. Indeed, Detroit has a degree of vacancy, economic decline, and social fragmentation that make it wholly different from anywhere but other dying industrial towns. Some respondents indicated that it seemed like people in charge had decided on Detroit without adequately considering other models. There was no discussion of what exactly the program should accomplish. This mirrors a broader critique of Homegrown that has emerged from a number of community partners. While there have consistently been requests for community involvement and many community members have participated in every event, it seems that the leaders of Homegrown have a particular vision in mind and steer the process in the direction that they want it to go. When the initial steering committees and committee chairs were put into place, the authority positions were given to friends of the mayor and people involved with organizations that the mayor had interactions with. The pattern repeated itself in Phase 2: yet again, leadership positions were appointed, with an inner circle dominating the positions of power. Dissatisfaction over the Detroit model was partially based in this feeling of inevitability, in addition to the concerns over the broader applicability of a program based in a city with such drastically different circumstances.

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[43] Certain informants asked that their names be withheld because of their continued relationships with the city.

The Local Foods Resource Hubs pilot program was inaugurated for the summer growing season of 2011. Membership for the program was fee based; individuals paid $10 and community gardens paid $30. Members of the program received seed packets in May and numerous seedlings in June (at a retail value of $30). Additionally, monthly courses were offered that would provide important, seasonally relevant information for gardeners. These included courses on building soil nutrition, growing specific kinds of crops, composting, canning and preservation. The educational component was designed to ready growers for the next steps at each stage of the growing season.

The initial Hubs program was developed in three neighborhoods of the city: Northside, Philips, and Southside. These three areas were chosen because of their status as lower income neighborhoods. There is interest in other neighborhoods, and one additional hub is being started in 2012, but the costs of running the hub program currently limit the possibility for saturation in the city.

Though the hubs were located in the more racially and economically diverse neighborhoods of the city, the largest demographic element participating in the program was white women (Henry interview, October 11, 2011). There was also some degree of Hispanic participation. Very few Somali Americans, Hmong or African Americans participated in the program. Planners had hoped that people who had been adversely affected by the economic downturn and the housing crisis, especially African Americans, would participate in the program, but the hope has not been realized.[44] One barrier,

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[S]Since its inception, there has been collective worry on the part of the leadership and organizers of Homegrown about lack of African-American participation (Blecha interview, January 5, 2012). At every stage of the program, there has been only marginal participation from African-Americans, Hispanics, Somalis and Hmong. Community meetings were most frequently held at the University Outreach and

according to the coordinator of the Northside Hub, was that one historical legacy of slavery was a distaste on the part of a large portion of the urban African American community for agricultural work (Sundiata interview, March 29, 2011). This difficulty is foundational but surmountable. Compounding this problem are the convenience of store-bought foods, the time commitment of self-provision, and the lack of stable land tenure for low-income residents. People with low incomes often have to take multiple jobs to make ends meet and don't have access to adequate child care, which means there is little to no time to put into labor-intensive self-provisioning. Additionally, low-income residents are often renters and have unstable and insecure tenure, meaning that in addition to a lack of time, they lack access to land that can be used for home food production. While in Detroit there is high degree of African American participation, Minneapolis has not been able to achieve similar engagement on the part of the African American community. Detroit's success is due in part to Detroit's demographics, with its 80% African American population, but also to the control that African Americans have over the urban gardening programs; there is a strong sense of ownership of the benefits (Democracy Now 2010). Minneapolis has had less success for a number of reasons. The racialized nature of the alternative food movement makes it feel less inclusive to blacks (Slocum 2012, Guthman 2008b), and there has been a lack of consultation and community input from African-American leaders about how this kind of program could

Resource Center, in the heart of North Minneapolis, in order to make meetings easily accessible for residents of those neighborhoods. One African American participant told me that Homegrown was pitched in such a way that it wasn't compelling to an African American audience. Make it about jobs, he said, and this hall would be full of people from this neighborhood (Graddock interview, December 15, 2011).

be sold to the community.[45] The food justice movement sees participation in the establishment of goals and choices as central to the realization of food justice. The failure of the city to meaningfully incorporate minority voices into the planning process undermines the potential of the program to effectively address issues of justice, even if it programmatically provides beneficial services.

While the city provides funding for the Hubs program, Gardening Matters officially administers it. Responsibility for the Hubs has been devolved to community members in each of the three neighborhoods where they were established. Each hub had a leadership group of neighborhood members put in place, charged with running the Hubs and coordinating events for the neighborhoods. A number of participants argued that the hubs would be sustainable only if they were based around participation by and leadership of community members, saying participant buy-in is the only thing that will keep the Hubs running once the initial grant funding runs out (Sundiata interview, March 29, 2011; Graddock interview December 15, 2011; Sayler interview July 15, 2011). One of the important activities of the Hub program in its first summer was to establish a stewardship council, again composed of community volunteers, who will guide the future of the program, but the stewardship council also has limited participation of minorities. This means that the problems the programs have had attracting minority members will be difficult to remedy because they will not necessarily come up, and if they do, the expertise will not be in place to address them.

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[45] This is less about African American leaders not being willing to help and more about the fact that the City did not work to comprehensively invite groups to the planning stages of Homegrown. The speed of operations and the exclusive role of the leadership council led to a number of groups being unhappy because they were asked to the table so late in the game.

In thinking through the effectiveness of the hubs in generating equity outcomes, Kirsten Sayler, the director of Gardening Matters, felt that they were designed in a way and based in an understanding of equity that was inadequate for meeting the needs of marginal and minority populations. Equity for many bourgeois white people, Sayler argued, is about fairness, about everyone being given the same chances and opportunities.[46] The hubs were designed in this framework where one size fits all. For the hubs to be more effective in dealing with questions of equity, Sayler said, they would need to better understand and address the differential circumstances of the communities they were trying to serve. To increase the possibility of equity outcomes, the hubs would have to provide more support and outreach for target minority and low-income residents than for the white middle-class populations that have been the primary users of the program so far.

Beyond Growing: a Focus on Food Processing and Distribution.

Not all of Homegrown is focused on urban agricultural production. Homegrown is meant to develop a local food economy that crosses from production to processing to distribution of local foods. While much of the excitement is focused on growing, there are both city programs and citizen mobilizations designed to foster businesses that will process and distribute local food in the city as well.[47]

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[46] When unequal players are given the same opportunities unequal outcomes will occur. Sometimes unequal opportunities are necessary to bring about equity solutions.

[47] The city has funded programs to facilitate food preservation for individual use as well as providing funding for businesses that will operate in the city of Minneapolis to process local food.

One program the city has put in place is the Homegrown Business Development Center (HBDC). This program is designed to give matching funds of up to $12,000 to businesses locating in Minneapolis that process or distribute food products containing local ingredients. This program is located in the Department of Community Planning and Economic Development (CPED)[48]. The HBDC has provided some challenges for CPED. While they have extensive experience with restaurants, they have much less competency in dealing with other kinds of food processing businesses.

One challenge for the HBDC has been to define how it approaches the question of local. There was debate about what qualified as local and how much of the product needed to be made from local food. The final decision was to define local as any food produced in Minnesota or within 150 miles of the city. This allows foods from certain parts of Iowa and Wisconsin to be included. As to proportion, CPED decided that only one ingredient needs to be local in order for a business to receive funding; the percentage of the product that needs to be local was not specified. CPED did not want to place undue burdens on startup businesses.

In his presentation of the just finalized HBDC at a local foods resource fair, Bob Lind, the CPED staffer in charge of HBDC, introduced the funds saying that the hope on the part of the city was that a new General Mills might emerge from this funding stream. He gave an example of the Geek Squad at Best Buy getting its start-up funding from a similar program years earlier. The hope for the emergence of mainstream industrial food processing facilities makes sense for the city. They provide both a tax base and an employment base that won't be found in smaller businesses. However, the choice of this

[48] See Chapter 2 for a broader discussion of CPED's priorities and mission.

example and the articulation of this vision was interesting because the excitement around Homegrown is primarily based in an ethic that is opposed to mainstream industrial agriculture. The kind of local, small businesses that are congruent with this ethic are very different from General Mills and will not generate the volume of jobs or taxes the city is hoping for. To date, there has been some difficulty in finding projects to fund; this in part comes from the philosophy of CPED. Unlike DHFS, they are not inclined to pay attention to different conditions of different residents; instead they treat all applicants the same. This means that there is a little wiggle room to waive particular requirements for funding.

How effective is a program like HBDC in addressing both local foods and food access? At the meeting that culminated Phase 2 of Homegrown reflecting on how to move forward, Bob Lind told his audience that HBDC had been unable to lend its entire corpus of available funds. In the discussion that followed, one of the community members at my table, Collie Graddock, expressed frustration over the way HBDC operated. He later expanded on this in an interview (Graddock Interview December 15, 2011). He was part of a group called the Community Table Coop (CTC), which had applied for city funds through the HBDC but did not get awarded any monies.

CTC is a group of individuals who are working to engage in the collection, distribution and processing of local food, which are the activities that HBDC is designed to encourage. Growing in the city should not be the focus, according to Graddock. While a city like Detroit, with its massive tracts of vacant land, may have enough land to grow enough food for its population, a city like Minneapolis can never hope to grow enough

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food to support itself within the city limits. Because of the limited availability, Graddock argues that most of the growing should be left to farms in the urban hinterlands. These areas already have farmers and land devoted to farming. For a local food economy to take off, there need to be new means of processing and distributing foods within the city. Currently farmers are losing products in their fields and throwing products away at the end of farmers' markets. Farmers have no outlet for their seconds and are unable to sell all of their products at the market. The Community Table Cooperative is an attempt to address this issue. It will connect processors with these farmers and will guarantee the farmers a market for their seconds and provide them with an outlet for unsold produce at the end of the market. In return, processors will be able to purchase the product at a much lower cost. As part of the cooperative model, money will not immediately flow through the system. Farmers will be given a share of the profit once profits start rolling in. An important part of this is the establishment of a brand. Graddock has been working with both the Allina Health System and the Midtown Global Market to help provide space and to establish a Community Table Coop brand. He has also worked to get African Americans involved with the Community Table Coop. Graddock's goal is for it to be a means through which people can work to support themselves – not through the growing of food, but through a job in the food industry.

Despite support from Allina and Graddock's personal engagement with the Homegrown program, CTC has been unable to secure funds for operation from the city. Graddock sees two main reasons for this. First, he thinks that city does not quite understand how cooperatives work and what they do and is thus reluctant to support a

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cooperative business model that does not fit the normalized model of the private individual business that the city is used to dealing with. Second, the CTC has a number of individuals who have yet to work in the preservation and food transportation businesses. The city sees this as an impediment to the viability of the project. Because of HBDC's location in CPED, there is a less flexible framework for evaluating the viability of projects. Unlike DHFS, CPED is not tasked with addressing issues of inequality; instead its job is to evaluate applicants on an equal footing based in questions of viability. The unfamiliar business model in conjunction with the lack of established expertise make CTC unfit at this time.

The work that CTC wants to do is vital for the establishment of an effective, integrated local food economy. It would connect already productive farmers with new markets in the city and provide them with the ability to sell greater proportions of their produce. It also is an important element of food justice. It provides healthy, local produce to local communities at an affordable price and provides members of the African-American community with jobs that give them a modicum of control over the kinds of food that come into their communities. Responsibility for the failure of the CTC to meet the standards and win funds cannot be placed solely at the feet of CPED. However, if the city is to look for creative ways to address the core concerns of Homegrown, it will need to look beyond the standard business model and standard business practices. It will need to find ways to use the funds it has to support businesses that can help achieve its goals.

Food Access and Farmers' Markets

Farmers' markets are some of the most visible and popular institutions involved with Homegrown and the local food movement more broadly. They are the sites where communities are made through the connections between growers and consumers. They are the main vehicle through which people gain access to local produce, meat and dairy products. As a result, they are one of the most virtuous sites of consumption. Farmers' markets also are sites that are subtly encoded with race and class identity and are often experienced as privileged spaces of whiteness (Guthman 2008b, Slocum 2007, Alkon and McCullen 2010). While this does not interfere with the circulation of local foods, it puts barriers in place for markets to be used as sites for addressing food justice.

One of the features of the central Minneapolis Farmers' Market is the presence of wholesalers. These vendors sell food that is neither local nor organic but instead is purchased wholesale from the industrial food system. This feature of the Minneapolis Farmers' market has been a longstanding source of contention for the food movement of Minneapolis (Slocum et al. 2009). People concerned with local food find the presence of these vendors in the farmers' market offensive: they are not farmers, and the food they sell is part of the problem. These vendors are important, though, for minority communities. They provide a broader variety of food that brings minority populations and differently classed population into the market (Slocum 2008, Nicholson interview 2011). This leads to a much greater diversity of users than one finds at other markets that have stricter rules about locality (Slocum et al. 2010). Discussion about the necessity for locality in the Homegrown process has been seen by some participants as an attempt to

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put pressure on the Minneapolis market to adopt stricter rules that ban the presence of wholesalers (Nicholson interview, April 27, 2011; Arcand interview, April 4, 2011; Garwood interview, March 11, 2011). The brand image of the farmers' market is based on local food and community building. The worry is that a grocery store or some institution like that could sell its produce in its parking lot and label it is a farmers' market, despite the absence of farmers and the distance that the produce travels (Garwood interview, March 11, 2011). Another participant, though, said that having a small number of wholesalers does not undermine the brand of the farmers' market and the benefit they provide in terms of opening up the market to a broader array of people far outweighs any damage they might cause to the brand. The question, in the end, centers on what degree of locality is desirable. The answer tends to be different depending on whether virtuous locality or food justice is more important. The Minneapolis market has not agreed to the local-only demands of other participants, and so this issue remains open.

One of the biggest initiatives to make farmers' markets more accessible for lower-income populations comes from efforts to encourage the usage of Electronic Benefit Transfer Programs (EBTs) at the markets. The switch from paper food stamps to EBT programs in the 1990s led to the inaccessibility of farmers' markets for families dependent on food stamps (Institute for Agriculture and Trade Policy 2010). The EBT system required that people use a debit style card to access their account. While supermarkets had the technical and bureaucratic infrastructure in place to accommodate this change, farmers' markets had neither card readers nor the ability to hire staff to do the paperwork that accompanies food stamp usage. Most farmers' markets are non-

profits run by volunteers and have been unable to adjust to these changes in the intervening years. Homegrown initiated two programs to make farmer's markets more accessible to EBT users. First, it provided funding to help markets get wireless card readers and hire help to manage the paperwork. This is the most essential step. Without readers, markets remain incapable of accepting food stamps. The second related program is one called Marketbucks, a matching funds program that provides people who use food stamps with up to $5 in matching funds each visit to the market. These programs address two important barriers to use: first that of accessibility, second of cost. Farmers' markets can sometimes be cheaper than grocery stores, but often you are paying more for a large quantity of produce. Though it is a greater value in terms of cost per unit, since you must buy a basket of vegetables rather than just one, the higher prices are a barrier to those on a very limited budget.

Both programs have been quite successful. The Midtown Farmers' Market, with funding from Blue Cross/Blue Shield, started a pilot EBT program before Homegrown was put in place. Over the three years of the program, Midtown saw a steady increase in users of the EBT system (Arcand interview, April 4, 2011). The introduction of the Marketbucks program through Homegrown led to an even greater increase than in previous years.

While Homegrown has led to a number of programs to facilitate the work of farmers' markets, it has failed to address the one of the most fundamental problems with the way the city conceives farmers' markets, according to David Nicholson, a board member of the Kingfield Farmers' Market in South Minneapolis, and an active member

of the Farmers' Market committee of Homegrown. The city has failed to decide whether

farmers' markets are private enterprises or if they are a public good that serves a social

function beyond the connection of agricultural producers and consumers. Farmers'

markets are private enterprises; they are private institutions that connect entrepreneurs

(farmers) to consumers.   Even so, farmers' markets are not profit-making organizations.

They are primarily run by volunteers, and Nicholson noted that he had never seen an

effective business model for a farmers' market that was sustainable without external

support. Farmers' markets serve a much broader purpose, however, according to

Nicholson. More important than the private functions of the market are the public

functions that they serve. They provide important points of access for healthy (and

sometimes affordable) food; they are important for community building; they provide a

means to support "more virtuous" agricultural systems. These elements of the farmers'

markets are often seen as more important than the strictly commercial functions, and

different government institutions at the state and the local level see farmers' markets as

essential for the pursuit of public programs as seen in the varied elements of Homegrown.

A clear understanding of the markets' main function is essential for effective policy

surrounding them. If markets are understood primarily as private institutions, there is no

reason for them to receive special treatment from the city. However, if their public

functions are emphasized, then there is a compelling argument for cities to work to

address the needs of farmers' markets. Homegrown has yet to present a compelling case

that for the public nature of the work of farmers' markets to City Council. As a result,

efforts to change zoning ordinances and secure ongoing funding for important public programs (such as EBT in the market) have not seen overwhelming support.

The lack of broad-based institutional commitment across the whole of city government leads to concerns about the long-term potential of farmers' markets for building the local food economy and local food justice. The ability of markets to use EBT and the Marketbucks program are both entirely dependent on external funding. Without continued financial support, the markets will be unable to continue these kinds of programs. This is only one challenge to the long-term viability of markets. Homegrown Minneapolis also lacks a mechanism to connect the work of the city with the broader region. Agriculture is a regional practice, and the local food economy the city wants to put into place depends on numerous connections with its hinterlands. Trends in the demographics of the agricultural communities further erode the long-term possibilities of farmers' markets (Nicholson interview, April 27, 2011). Many of the current vendors are older immigrants, whose children, rather than farming, are taking up professional jobs. While the older generation continues to farm, it is not clear what will happen when they are gone. Without a critical mass of growers, local produce will be extraordinarily expensive, making farmers' markets boutique shopping locations rather than sites for community building or food access.

Conclusion

Homegrown Minneapolis is a program that has taken shape in the tension between concerns about the production of a local economy and the issues of food justice. The

mayor's vision for Homegrown and that of many community members is focused on the production of a local food economy. The title itself, Homegrown, demonstrates how the idea of the program was firmly situated within an imagination that values a local, environmental vision of the world. The title implies a world where production occurs at the most local of levels – in the yards of residents. The areas of intervention (farmer's markets and home gardens) and the objects of production (local foods) come out of a movement that has had difficulty in recognizing the ways that it often excludes those who are neither white nor bourgeois.

There is a place in the alternative food movement for concerns for justice, and there is place in Homegrown Minneapolis for justice as well. The funding structure of Homegrown, based in obesity prevention, has meant that the Homegrown must deal with question of access to healthy food; this is what the funding is for. The location of Homegrown in the DHFS further facilitates the emphasis on issues of justice. The city staff running the various Homegrown efforts have been trained to think about the city in terms of its inequalities. This has played a role in emphasizing the question of food justice. Community partners involved at every stage of the development and in all of the various sub-committees have had the issue of justice on their mind to varying degree. They have not let Homegrown continue without at least raising questions about its purpose.

It is between these two positions that Homegrown has emerged, and it is there that we must look to the long-term potentials of the Homegrown effort. These potentials are limited by three important factors. First, the city has not thoroughly considered the racial

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and class biases of the local foods movement and their impacts on the reception and effectiveness of the Homegrown program. Compounding this issue is the way that the city has failed to incorporate a broad array of community and minority voices into the governance structure of Homegrown. The agenda was set before participation was encouraged, undermining participatory justice. While there is nothing to be done about what has already happened, the city must confront the race and class biases of the programming and actively work to generate and address input from a more diverse set of stakeholders if it wants to see Homegrown transform the food system of the city. In the current set-up, people who already care about the issue in its particular foodie manifestation are the ones most likely to get involved with Homegrown programs. Community partners involved in every element of Homegrown, from home gardening to farmer's markets to food production, have shown awareness of some of these flaws; the question is how their critiques can be effectively mobilized to transform Homegrown.

Second, Homegrown's conception of the local limits its long-term viability. Much of the excitement about Homegrown Minneapolis comes from the vision of growing food in home gardens and small-scale urban farms. However, small-scale agriculture within the city has no chance of providing the necessary food to feed all its residents; it will most like serve to provide boutique access to hyper-local food. Since the city's plans for growth involves increased density of urban occupancy, the space for food in the city will become less and not more. Thinking about a local food system requires that the city begin to develop connections within a regional system. It needs to re-imagine a geography of food production that will be adequate to the city's current and

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future needs: currently, there is no mechanism in place for the city to coordinate beyond its boundaries around the question of food. Neither the Metropolitan Council nor the Minnesota Department of Agriculture has a unit that addresses questions of local food systems. As a result, the efforts of Minneapolis are disconnected from those of St. Paul, the surrounding counties, and the regional agricultural foodshed. Solutions for this problem are tricky. It involves advocacy at the state and regional level. The city could take a leadership role in trying to develop this kind of system. The grounding of Homegrown in a cultural aesthetic of foodie culture means the enthusiasm for food is located in consumption and romanticized visions of production rather than a systemic analysis of what a viable food system looks like. The desire for as local food as possible ignores the fact that food needs to be addressed at a broader spatial scale.

Finally, Homegrown has been limited by its temporality on a number of levels. Both the visioning and the implementation processes have focused on rapid action the city has wanted in order to get things moving. This has led not only to the exclusion of a diverse set of voices and ideas, but to a lack of programs based in a long-term structural understanding of food production and consumption. The building of a local food system requires thinking over long time-scales and not readily obvious spatial scales. The programs that have been put in place are exciting to certain segments of the population but are not the foundation for a local food economy; they will not generate a self-sustaining food system in the long run. This leads to the important question of the temporality of funding. How is sustainability to be sustained? The city has short-term grants from the federal government to run some of its programs, but these funds are likely

to available only for a limited duration. Blue Cross/Blue Shield has helped with funding,

but the question of whether these programs will still be running in ten years remains.

Homegrown got off the ground as a result of hundreds of volunteer hours with limited

funding. The city needs to decide how important Homegrown is and begin to think about

what it takes to create a functional food system in the long run.

Although based primarily in bourgeois notions of food provisioning, Homegrown

has become a site where other forms and ideas of food practice have advanced. Activists

for food justice have engaged with the Homegrown process in order to make it more than

it was originally imagined as. The local food system is not a site of consensus, where

everyone agrees about what it should do and how it should work, but is instead is a site of

disagreement, where differing viewpoints based in different systems of value are

expressed. While certain groups have avoided Homegrown, the city has buy-in from

some members of minority communities who see Homegrown as an important place for

having a conversation within their communities and at the scale of the city as a whole

about food, health and a good life. Homegrown has neither excluded these voices nor has

it coopted them. Homegrown is still an evolving program, and what it will be and do is

still an open question. For Homegrown to become more inclusive and to actively work to

address the food needs of diverse populations in the city will require that the city actively

work to engage with those populations. If it is to be more than just a boutique program

that makes local foodies happy, the city will need to think about both the spatialities and

temporalities of a local food system. Sustainability requires broader structural

engagement. If sustainable urbanism is limited to the boundaries of the city, it will have

little impact on changing our lives.

Chapter 5

Imagining Sustainability: Climate Change and the City

We are barreling towards disaster. Every year, we fail to reduce or even stabilize greenhouse gas (GHG) emissions, and the concentration of atmospheric carbon dioxide continues to increase. Although scientists have been warning for years that anthropogenic GHGs are leading to global climate change, there has been little political will to deal with this problem. Our way of life and the geopolitical order of the world are based in the consumption of fossil fuels and the emission of carbon, creating serious barriers to meaningful change (Chakrabarty 2009, Mitchell 2009). Our failure to act is already having consequences: the world is warming and the climate is changing, with the prospect of even hotter weather, water shortages, increased flooding, rising sea levels, ocean acidification, and greater frequency and severity of weather events. What remains unclear is how much warming will occur and what its exact consequences will be. In a best-case scenario, the changes in climate will lead to hardship and displacement; at worst, they could undermine the boundary conditions that have made life as we know it possible (Lynas 2007, Chakrabarty 2009).[49] Climate change is the apocalyptic imaginary of the present; it is through climate change that we imagine the possibility of the end of the world. As such, concerns about climate change have become central to the discussion

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[49] By boundary conditions, I mean those conditions that have been necessary for life as we know it to function. If climate change is severe, it threatens to undermine the climatic conditions on which our lives are predicated. The Holocene, the 12,000-year climatic epoch that saw the development of agriculture and modern man, was a period of climatic mildness and stability. The crops that feed us, the settlement patterns we have established and more are based on the conditions of the Holocene. The worry is that we are undermining these conditions through anthropogenic climate change (Chakrabarty 2009)

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of sustainability. Because sustainability is an attempt to address the environmental impacts of our lives, sustainability cannot be thought without climate change. The task at hand is to uncover how the apocalyptic imaginary of climate change shapes both the discourse and the practice of sustainability.

In this chapter, I argue that the imagination of climate change has fundamentally altered the way we approach sustainability. We are confronted with the possibility that life as we know it cannot be sustained, and that programs meant to thwart or slow climate change are insufficient. This means that sustainability must be replaced or transformed as a system of socio-spatial ordering if it is to be sufficient to meet the challenges of the future climate. The science of climate change indicates that if things do not change dramatically and rapidly the possibilities for catastrophic climate change are immense. This has prompted calls for urgent actions to address the (geographically uneven spread of) activities that produce carbon and begin to prepare for the changes that climate change will bring. In this call to action, the city is coded as, both, a space of threat that must be dealt with but also as a space of vulnerability and danger. The summons to action that has emerged around climate change represents climate change as a universal threat to our way of life. In so doing it fails to recognize that our way of life is heterogeneous; that life chances and the benefits of life are unequally distributed. Instead, the way of life to be defended is depicted as universal and monolithic, overlooking the fact it is based in an ethical calculus that values some lives more than others. However, precisely because it is presented as universal in its impact and as being about the need to preserve a certain standard of living, climate change can in fact function as a driver for political action that

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calls into question the inequalities of the current system of order, as well as address the

needs of those who are more vulnerable, both in the present and the future.

Cities and Climate Change

Cities are major contributors to climate change, with some studies attributing up

to 78% of carbon emissions to cities (Stern 2007). Cities tend to have the greatest

concentrations of industry, people, and personal vehicles, the basis for their number-one

ranking in greenhouse gas emissions. Because of this, cities are seen as one of the most

critical sites for addressing climate change (Betsill and Bulkeley 2007, Bulkeley 2010,

Newman and Jennings 2008, Satterthwaite 2008). Even studies that challenge the figure

of 78% as dramatically over-inflated recognize that climate change efforts must focus on

cities (Satterthwaite 2008).[50] What can cities do? First, they can work to build effective

tools for measuring their carbon outputs (Wackernegel and Rees 1996, Heberle and Opp

2008, Satterthwaite 2008, ICLEI 2010); effective measurement is seen as essential for the

development of effective solutions. Second, cities can look to best practice to find

effective tools and programs to decrease their carbon output (Newman and Jennings

2008, Radovic 2009). Through adopting LEED construction, installation of solar panels,

and construction of light rail systems and bicycle paths, cities can implement a technical

shift to reduce emissions. Third, looking beyond technological practice, cities can

recognize that they contain both a structural organization that leads to greenhouse gas

production and, as well, the assets of common wealth that can lead to major structural

changes that reduce greenhouse gases (Davis 2010); cities are both the cause and the

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[50] Satterthwaite argues that the attribution of carbon emissions is an extremely complicated process that often fails to adequately differentiate between the responsibility of producers and consumers and also fails to take into account the difference between cities and regions in the production of carbon outputs.

solution for the coming climate crisis. Finally, cities can look beyond abatement and

begin to address the challenges that will emerge in a world of changed climate. At this

point, there is no question that climate is changing. The challenge is to put policies and

programs in place that will allow cities to adapt to the challenges that climate change will

pose to urban life.

In the United States, the failure of the national government to take a stance on

climate change has also contributed to the urban imperative for climate solutions. The

U.S. government has yet to ratify the Kyoto Protocol of 1997, the main international

agreement to address climate change. In the absence of leadership at the national scale, it

has fallen to leaders at the local level to proactively address the issue. The United States

Conference of Mayors initiated a Climate Protection Agreement in 2005, under which

cities have signed on to reduce their individual emissions to 1990 levels, as agreed upon

in the Kyoto Protocol. Additionally, the signatories have agreed to urge both state and

federal governments to adopt the standards of the Kyoto Protocol. As of May 2012, 1055

cities across the country had signed on to this agreement (USCM).

Minneapolis (in conjunction with St. Paul) recognized early the imperative to deal

with issues of climate change. Before the Kyoto Protocol, before the Rio Declaration of

1992, Minneapolis and St. Paul signed on with 12 other cities to work to reduce their

GHGs through the Cities for Climate Protection program run jointly by the United

Nations and the International Council for Local Environment Initiatives (ICLEI). In

participating in this program, Minneapolis agreed to develop a local climate action plan,

work to reduce the emissions of local city operations, work on outreach to convince the

public of the dangers of global warming, and engage in partnerships with cities in

developing countries to facilitate the transfer of expertise in addressing emissions. The

Minneapolis-St. Paul Climate Protection Plan provided a set of recommendations

involving changes to the cities' transportation networks, the kinds of vehicles in the urban

fleet, the retrofitting of city-owned buildings to increase their energy efficiency, and

increasing the size of the urban forest.[51]   Costs would be defrayed by savings resulting

from increased energy efficiency. The cities agreed to institute what was feasible and

cost-effective.

The City of Minneapolis touts the MSP Climate Protection Plan as an important

component of its environmental credentials and has continued to engage with issues of

climate change. In 2007, Mayor Rybak signed the Mayor's Climate Protection

Agreement. The city has recently published its second green house gas inventory. The

City Council adopted a climate change indicator as part of the sustainability initiative.

Many of the other indicators also touch on issues of climate change: alternative energy,

downtown transportation alternatives, bikeways, and tree canopy. Climate change also

motivates programs like Homegrown Minneapolis; Mayor Rybak's concern about the

conventional food system in part stems from the way that "every night you are placing

carbon on your table" (Rybak interview, May 15, 2011). The emissions from the global

chains of food are one of the main drivers of the environmental impetus for local food.

The specter of climate change and the sense that action is necessary now animates the

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[51] The subtitle for the MSP Climate Protection Plan, "a framework for developing strategies to reduce CO2 emissions, save taxes, and save resources" indicates that the cities saw climate work as something that would not increase costs for the city but that actually would be a win-win solution for the cities. They would both reduce emissions and make them more efficient and competitive.

sustainability work of the city and can be seen across the issues and programs that the city runs. Climate change has been more than additive in that it has not just led to the addition of new programs and policies: climate change has been transformative; it has begun to reshape the way that the city understands and works towards sustainability.

In 1987, the same year that the World Commission on Environment and Development produced the Brundtland Report and established the call for sustainability, James Hansen, a senior scientist at NASA, testified before Congress about the dangers posed by growing concentrations of greenhouse gases in the atmosphere. Most initial discussions of sustainability did not include the issues of climate and anthropogenic greenhouse gases, but as concern over the climate rapidly grew, there has been an increasing convergence between discussions of climate change and discussions of sustainability. The geographic and temporal peculiarities of climate change impact how sustainability is imagined and the kinds of social-technical solutions that are posed to realize sustainability. First, as an issue of a global nature, climate change is beyond the ability of any locality to affect in more than limited degree, due to both the scale of local response and the challenges imposed by federal and international systems of power. Despite this, it is at the level of the city – indeed, the local – that much of the work around climate change is carried out, with the collaboration of multiple localities required to affect change on a larger scale. The spatialities of climate change initiatives and the spatialities of sustainability initiatives that preceded it overlap to a considerable extent; the mantra "think global, act local" has long been central to the imagining of sustainability. The temporalities of climate change pose even greater challenges to the

response than the spatial dynamics. Whereas much of the initial concern about sustainability was framed in relation to observed damage to ecosystems and existing challenges of resource scarcity, the threat of climate change comes not in the present but in the future. Scientists are certain that climate is changing and that the change is anthropogenic, but the degree to which the climate will change and the actual effects of this change cannot be known. Climate change demands a response not to a known threat but to a set of possible futures. Creating policy to address an unknowable threat poses very different challenges from addressing a current, knowable problem. It requires methodologies of making the future visible and then requires weighing potential futures against current costs and constraints.

This chapter focuses on the ways that concerns about climate change have shaped the discourse and the practice of sustainability. To do this, it is helpful to think of climate change as a problematic. For Louis Althusser (1969), concepts do not exist in isolation. They need to be understood in relationship to the ideological framework in which they emerge. This framework is a coherent whole and that coherence is produced by its problematic: that is, "the constitutive unity of the effective thought that make up the domain of the existing ideological field" (1969: 66). The problematic is a system of ordering thought that defines not only the kinds of answers that are provided but also the questions that can be asked, indeed the repertoire of thoughts that can be thought. Thus, the problematic directs attention not just to what society articulates but also to those questions and problems that it excludes. I am interested in how climate change operates as a problematic and how attention to it reshapes the way sustainability is thought, by

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changing the kinds of questions that can and cannot be asked. The climate change

problematic sees the world through the lens of carbon: it is necessary to decrease the

amount of carbon we are emitting into the atmosphere. This leads to a focus on

alternative energy, on alternative modes of transport, on density of life activities, on

locality, and on energy efficiency. Carbon emissions must be reduced if we want to

sustain life as we know it. This obsession with carbon defined all of the early work on

sustainability and climate change and remains the central pillar of this corpus. It fits

comfortably within the imagination of sustainability because its purpose is to preserve

life as we know it. There is a growing realization, however, that climate is already

changing the world, that life as we know it cannot be sustained. In the face of the

inevitable changes to come, a new ideal has emerged: that of resilience. We can no

longer only ask how to reduce carbon emissions; we must ask how we can prepare for the

changing world that we will confront. We must prepare our human settlements and our

social and economic lives for whatever climate change may bring. This focus on

resilience fits less comfortably within the framework of sustainability. It demands that

we ask different questions.

As mentioned, a problematic is not just concerned with the questions that are

asked or with the ideas and problems that fit within the framework. It is also concerned

with what is excluded – with the questions that cannot be asked. There is an urgency to

climate change that serves to marginalize other concerns. The drumbeat goes that climate

change poses a threat to the conditions that make life as we know it possible. The social

order, the environmental order, the political order, the economic order and the interests in

the maintenance of those orders all are under threat from climate change. Because of this, climate change must be addressed first; other concerns must wait until the climate threat is dealt with. This does not mean that other concerns are inadmissible within the problematic of climate change; rather, their importance is based on how proximately they are thought to connect to climate change. Poor people will suffer more from climate change than wealthy people will: but rather than prompting calls to address poverty, this merely provides more weight to the need to address climate change imminently. We must deal with climate change to help the poor. Because climate change is the lens through which other problems are brought into focus, other ways of seeing them and other ways of working to solve them are sidelined. This has implications for the imagination of justice in the world of climate change.

The first section of this chapter explores in more detail the possible futures that climate change may bring. The main question it addresses is how we come to know these futures and how we then act upon them. By imagining these futures and actions based in these imaginings, we build the present as a reflection of the possible future. The second section looks at how these broader imaginings work in the context of Minneapolis. It explores the relationship between the possible futures that have been projected for Minneapolis, the means of measurement the city has installed to gauge the city's impact on the changing climate, and the programs that are being put in place to address these. The final section explores how climate change brings justice into focus. It looks at both the way that the idea of justice is framed by climate change and how this plays out in the context of Minneapolis.

Presenting the Future: Making the Future into an Actionable Object

The future is, by its nature, unknowable – there is no way to tell for certain what will come. While we make assumptions and predictions about what may be, there is always a degree of unpredictability. Climate change, terror threats and ecological degradation are seen to decrease our ability to predict what is to come. Despite this, the potential for crisis in the future does not allow us to sit idly and accept whatever comes. Instead, we must build into the present the ability to meet the challenges that the future will bring. This poses very particular challenges. First, methodologies of knowing the future or projecting the future must be established. There can be no certainty in this procedure, but methods of projecting and anticipating the uncertain must be in place to make the future legible, which is essential for action. This legibility is about projecting a set of possibilities rather than predicting what an actual future will look like. It is only through the envisioning of multiple future worlds that uncertainty can be accounted for. Second, technologies of acting upon these uncertain futures must be put into place. Action takes three major forms. First are tools of action designed to close off certain possible futures. When a potential future presents dire consequences to what we value in the present, it is necessary to attempt to prevent that future from actualizing. Second are technologies of adaptation. When there seems to be no possibility of averting a future, attempts are made to prepare ourselves for the eventualities that may come. Finally, there is the active attempt to create a particular future. Here, rather than trying to anticipate what the future may be, we instead imagine the future we want and work to make that future materialize.

Any attempt to act upon the future requires an ontological understanding of the connection between past, present and future. Within the Western philosophical tradition the future has been imagined as an end of the world, as in millenarian Christian philosophy; as open and perfectible, as evidenced in the imaginaries of development and progress; and as a mystery in certain forms of utopianism (Anderson 2010). In each instance, the understanding of the relationship of present to future authorizes particular ways of acting in the present in relation to the expected future. In our present conjuncture, the future is imagined as a break from the present: through climate change, terrorism, disease, or ecological crisis the future will be unforeseeably different from what we know (Anderson 2010). This means that we cannot predict what will come.

Despite the break between the conditions we now know and the possible conditions that future may hold, the future is not ontologically distinct from the present. The coming crises are immanent in the present: they are grounded in the current political-economic-environmental order. The potentials for crisis are always present. As a consequence, anticipatory action is never a singular event but must be incorporated into the ongoing management of society. Which crisis will emerge from which set of present conditions is unknown. This openness of the future requires a broad-based preparedness and constant vigilance to the emergence of any of these potentially dangerous futures.

Extremely important to this imagining of the future is that any of these future crises have the potential to be catastrophic. Catastrophes differ from other forms of crises in that they challenge the ability of existing technologies and processes to respond to them. Immanent to catastrophe is the collapse or destruction of our way of life – any

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given catastrophe may end life as we know it. The catastrophe is precisely the break with the present that undermines and destroys the long march of progress that defines our imagination of modernity (Aradau and van Munster 2011). The potential for catastrophe as the end and possibly reversal of progress and cessation of life as we know it imbues a tremendous urgency in the application of anticipatory action. Even when this threat is disputed or vague, catastrophic potential makes inaction impossible. Increasingly, environmental politics has been using the precautionary principle as basis for action (de Goede and Randalls 2009). The precautionary principle states that "uncertainty is no excuse for inaction against serious or irreversible risk, and absence of evidence is not evidence of absence of risk" (Stern and Weiner 2006:394 in de Goede and Randalls 2009: 859). This kind of logic has very serious implications for the present.

If the future, by its nature, cannot be known, how do we plan for it? How do we account for what may and may not come to pass? Measurement is essential for the definition of a problem, because, as we have seen in previous chapters, measurement allows a problem to become actionable. A world of uncertainty calls into question evidence-based and measurement-based modes of knowledge production for decision-making. While risks can be calculated and acted upon within a knowable framework, uncertainties cannot. Donald Rumsfeld's now famous quote about threat and uncertainty provides insight into the challenges of building knowledge for acting on the future: "Reports that say that something hasn't happened are always interesting to me, because as we know, there are known knowns; there are things we know we know. We also know there are known unknowns; that is to say we know there are some things we do not know.

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But there are also unknown unknowns – the ones we don't know we don't know"
(Rumsfeld 2002). The things we know and the things we know we don't know can be
accounted for. Formulas that establish degrees of risk can be used to account for these
(Anderson 2010). It is the unknown unknowns that present the limits of evidence-based
and calculative responses to the future. There is no way to account for what we don't
know we don't know, while at the same time we need to be prepared to deal with the
outcomes of the unknown unknowns. To do this requires a methodology based in
imagination rather than measurement. While a departure from calculative reasoning,
imaginative systems of knowledge production are neither irrational nor fanciful (Aradau
and Van Munster 2011). They provide a supplemental form of knowledge production
that allows for the analysis of the unknown. This shift to imaginative systems of
knowledge production has important political implications. Imagination both forms
knowledge and the "material interventions *in* and political sensibilities *of* the world"
(Yusoff and Gabrys 2011: 516).

Scenario planning is at the heart of the imagination of the climate future. As a
method, scenario planning "attempts to divine not this or that aspect of the future but *the
multiple future worlds* attendant on alternative actions in the present" (Cooper 2010:170).
Based on the differential possibilities emerging from the present, it traces out the possible
futures that might emerge. The different scenarios must be coherent, internally consistent
and provide a vision of a plausible future (Carter 2007, IPCC 2007). Scenarios provide
an important planning tool in the form of 'if, then' logic. If these parameters are in place,
then these effects can be expected. This gives planners and other government officials a

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way to envision what is possible and to plan based on the contingencies of the different scenarios.

Scenarios compose the main form of future knowledge production about climate change. The International Panel on Climate Change (IPCC) established a set of four storyline scenario families to explore how different socio-economic formations will lead to different climate outcomes. Each one makes assumptions about population growth, economic growth, technological development, integration of the global economy, and land use. The results of these vary dramatically in terms of the future world they envision. The B1 category, often called the best-case scenario, is based on massive technical innovation and large-scale economic transformation. It projects an increase in global temperature between 1.1 and 2.6 degrees C. The worst-case scenario is in the A1 family. It basically sees world development continuing as it is. The projected increase for this family is between 1.1 and 6.4 degrees C. It is, of course, impossible to model effectively the complexity of all the factors that lead to climate change, but the storylines capture particular visions of the world that are plausible based on where we are now.[52]

The U.S. Department of Energy calculated that between 2009 and 2010 there was a 6% increase in carbon emissions for the United States (Borenstein 2011). This dramatic increase puts the world on track to eclipse the worst-case scenario of the IPCC (Borenstein 2011). This is not surprising; a number of scientists have argued that the

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[52] Mann and Wainwright (2012) argue that it is not just the ecological imaginations of climate change that need to be taken into account. We must also be attentive to the possible political futures that are produced by climate change. Climate change cannot be ignored forever, they argue, and the potential political responses will have important implications for who benefits and who suffers in the climate of the future world. They see only a slim possibility for a world that can truly address the threats of climate change and justly address the needs of the bulk of the world's population.

IPCC has been overly conservative in its estimates (McKibben 2007, Wigley and Santer 2012. These conservative figures are not exceptional but are seen as an important part of IPCC's method because a more radical approach is alienating to the governments that fund it (Brysse et al. 2013). This raises important questions about the limitations of scenario planning. The scenarios themselves are not objective, thorough envisionings that trace out all possible futures. They are constrained by the political imperatives and the imaginings of the agencies who design them. Compounding this problem, "[scenarios] often inadvertently become taken as statements *of the future*, thereby acquiring a solidity and authority that is unmerited" (Yusoff and Gabrys 2011:518; emphasis in original). Like all forms of knowledge production, scenario planning is an exercise of power. As a result, it has an essential role to play in authorizing certain imaginings of the future and certain courses of action meant to address those authorized futures while at the same time marginalizing alternative imaginaries.

The threat of the catastrophic future demands action to mitigate the possibility. With the stakes so high, the catastrophic future must be averted. This places preemptive or precautionary action as the central strategy for addressing climate change[53]. One of the most important elements of the low-emission scenarios is a rapid dispersal of technical innovation meant to decrease the usage of fossil fuels, improve the efficiency of energy usage and decrease the waste of energy. Technology is only one element of transformation. Policies must be put in place that make the new, more efficient technologies cost-effective. Cost-effectiveness is an essential component of preemptive

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[53] There is difference between preemption and precaution. Preemption is a terminology that emerges from the security literature, precaution from the environmental literature. The difference goes beyond this however; Massumi (2007) argues that the use of preemptive power works to incite what it seeks to avert.

action: uncertainty should be no barrier to cost-effective action but does not necessarily justify more radical action (de Goede and Randalls 2009). Because of this, efficient technology becomes the most desired form of preemptive action. Even though initial outlays may be high, the increases in efficiency will pay for themselves over time. At the urban scale, this had led to programs to introduce solar technology, efforts to make new construction LEED certified, calls to retrofit older buildings to LEED standards, and efforts to re-introduce light rail transportation. These kinds of technical solutions are also preferred because they are generally understood as politically neutral and objective. They push aside broader questions of structural change and economic transformation in favor of palliative measures.

As a picture of our activity unfolds, it is becoming clear that we will be unable to avert significant global warming. The question is not if there will be climate change, but how much. This means that preemptive action is not sufficient for dealing with the effects of climate change. The scenarios of the IPCC give us a framework for estimating the degree of warming that will occur. From this, scientists are able to project how different levels of atmospheric CO2 and different levels of warming will lead to different climatic and environmental changes. A one to two degree change, at the lower end of the spectrum, would lead to changes in rainfall intensity and frequency, alter ocean chemistry, lead to rising sea levels, and increase the frequency of storms and severe weather events. While the costs of dealing with this would be high, it is seen as a world we can adapt to (Lynas 2008). Because at this point we can assume that this degree of

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warming will occur, mechanisms must be developed to alter the socio-spatial organization of our lives to adapt to these changes.

Adaptive imaginaries are fundamentally different than preemptive imaginaries. Rather than envisioning a catastrophic break between the future and the present, adaptive imaginaries are based in a pragmatic approach to the patterns of everyday life. Within the adaptive imaginary, "climate change is located 'in here', within our cultural practices and our everyday lives, rather than 'out there' as a remote and global force of alterity" (Yusoff and Gabrys 2011: 522). Like preemptive action, adaptive action has mainly been conceived as a technical response, addressing (1) the functionality of critical infrastructure in the changing world and (2) the need for new engineering and designs to cope with the challenges of climate change. Elements of infrastructure such as dikes, levies, water treatment facilities, sewage treatments facilities and power generation facilities, which underpin basic activities of modern life, all experience different levels of threat and require different levels of intervention. King Country, Washington, has been preemptively active in reinforcing and upgrading its systems of dikes and levies in order to protect low lying commercial and industrial infrastructure. Adaptive action also needs to address the routines and practices of our daily lives. Architects and designers have been actively involved in designing new forms of housing and buildings that meet the challenges of the climate future. These adaptive efforts often fall under the name resilience. The purpose being to make cities and social structures that are can weather the challenges that climate change brings.

Our attempts to anticipate the climate of the future have dramatic impacts on the structure of the present. The impacts of these imaginings vary based on the methodologies of knowing the future and the different actors who engage in the act of imagination, leading to different understanding of the types of effects, the degrees of effects, the geographies of effects, and affected populations. These in turn lead to different modes of action. The imagining of climate futures tends to fall under the authority of scientific knowledge, while the actions that emerge are the result of technopolitical schemes of control that work to address the potential catastrophe of the climate future. Imagination of the future, however, is not just limited to a reactive framework. The authoritative visions of climate change are juxtaposed with different utopian imaginations of socio-environmental ordering. Envisioning the future, then, opens up a variety of possibilities in the present: "In the enactment of better worlds, the future is constantly being folded into the here and now; a desired future may act as a spur to action in the present, for example, or action in the present may bring back memories of the long forgotten hoped-for futures" (Anderson 2010: 778). While climate change has become central to our dominant vision of the environmental future, other visions of future worlds also emerge that imagine better future worlds. The sustainable city takes shape in the articulation of these acts of imagination. The next section explores this further by looking at the way the city of Minneapolis is working to shape the climate future through the structuring of the present.

Accounting for Climate Change in Minneapolis

"The science is clear – global warming is real, we are responsible, and it is a threat to our society" (City of Minneapolis 2008). These have been the opening words on the discussion of climate change in the Minneapolis Greenprint each year since 2008, the first year climate change was included as an indicator. Real, responsible, a threat. The statement unequivocally lays out the city's position on climate change. It also serves as the foundation for an ethical position that requires action. Humans are responsible for climate change; climate change is a threat to society; therefore something must be done. To this end, the city has been developing programs and policies to reduce the emissions of the city with the goal of preempting climate change. Action is happening on two scales -- at the scale of city government operations and of the city as a whole. While easier to affect change at the scale of city government operations, because the city has the authority to control what it does, it is at the scale of the city as a whole that the city can have the largest impact on its greenhouse gas emissions. Through the measurement of the differential impacts of different sectors of the city, city government is able to see problems and begin to work on solutions.

How do cities measure greenhouse gas emissions? This is not a simple question. Cities are geographic entities, but they are also nodes in the flows of goods and people. Emissions occur within their boundaries that are caused by residents, by visitors, and by people just moving through. Emissions are produced in the production of goods meant for elsewhere, and goods produced in other places are brought to the city. Which of these emissions belong to the city? Which belong to other places? How are the emissions of

the region related to the emissions of the city? There is presently no national standard for how cities should measure emissions (City of Minneapolis 2009). Even though there is some consensus on major themes, there are tremendous variations in how cities conduct their measurement (Slotterback interview, February 10, 2012). How a city chooses to measure its emissions has important implications both for its ability to reduce those impacts and the perception of that city in the competitive framework of global urbanism. Cities compete with each other for prestige and for environmental credibility, and a system of measurement that is not as comprehensive may give cities an advantage in this competitive system.[54] At the same time, this decreases the ability of the city to actually affect emissions because the accounting methods are inadequate or incomplete.

What will cause cities to engage comprehensively with greenhouse gas emissions? For some, it is a matter of survival. Coastal cities all have to be concerned about the effects of rising sea levels in conjunction with bigger and more frequent storms. The combination of these effects presents the possibility of severe economic impacts on most coastal cities and threatens the very physical existence of parts of the cities. This leads to very real concerns that require aggressive action. Other cities have less of a direct impetus to address climate change. The possible effects will be less on continental cities, particularly in the Midwest. In these instances, what drives work on climate change? Part of it can be attributed to the calculative needs of cities to make themselves competitive in relation to others, but this cannot be the whole of it. The need to address

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[54] The Minneapolis International Airport lies outside of the political boundaries of the city. As a result, the city could choose to exclude the emissions that come from the airport in order to reduce the overall emission footprint of the city. Minneapolis chooses to take responsibility for those emissions even though it drives up the emissions of the city.

climate change is also an ethical stance; it is a recognition of the common threat and the need for common action.

Minneapolis published its first greenhouse gas emission survey, called the *Minneapolis Carbon Footprint Report (MCFR)*, in 2009. It addressed the years 2000-2006 and was designed to set a baseline measure from which the city could base future policy. The report was an important first step in fulfilling the obligations Minneapolis had taken on through its participation in the Mayors Climate Protection Agreement. It allowed the city to quantify the emissions from the operations of city government and the broader community of Minneapolis. The City of Minneapolis has chosen to use a "geographic plus" method to calculate its greenhouse gas emissions. This model measures the emissions produced within the geographic boundaries of the city in addition to the emissions of power produced outside the city, waste processed outside the city, and airport emissions produced outside of the city. The bulk of the data for the report comes from the electric and gas utilities. Electricity accounts for 38% of Minneapolis's current emissions and natural gas for 25%.[55] These account for the bulk of the emissions of the city across the commercial, industrial and residential sectors. The State Department of Transportation provides data on road transportation that accounts for both local traffic and through traffic on the city's highways. Road transport accounts for 25% of the total. Further data comes from the airport, the Metropolitan Council, and different elements of the city. Though the airport is located outside the city, Minneapolis takes credit for a

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[55] Figures in this paragraph come from an interview with Brandon Slotterback conducted on February 10, 2012. He pulled these from the as yet unpublished Minneapolis Carbon Footprint Report for 2012.

portion of its emissions due to the fact that Minneapolis is the cause of much of the air traffic at the airport.[56]

The geographic plus model does not fully account for the emissions of the city. The 2009 report acknowledges that serious methodological challenges remain in the tabulation of a city's carbon footprint. The biggest absences are the emissions of goods consumed within the geographic cities but produced elsewhere, and the upstream emissions associated with the emissions that are measured, such as the emissions from the production, transportation and processing of petroleum and gas. Accounting for these emissions requires a shift from a producer-based model of emission accounting to a consumer based accounting. King County, WA, is currently on the cutting edge of this form of emission accounting. The consumption based survey accounts for the all of the emissions that come from the consumption of goods in King County, WA, wherever they are produced. The survey found that 75% of the emissions that occur as a result of consumption are produced outside of the boundaries of King County (Stockholm Environmental Institute 2012). The shift to a consumption inventory also massively increases the quantity of emissions. Neither the production approach nor the consumption approach can fully address the emissions production of the city – the attribution of emissions in a global economy makes this overly difficult. Between the two, however, a strong understanding of the impacts of the entity can be derived. Adding the consumption approach dramatically increases the carbon attribution for a country. In

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[56] The Metropolitan Airport Commission tabulates the emissions for the airports. These include the emissions from ground operations, the emissions that from airplanes in approach (below 3000 feet) and taxiing, and the emissions from all outgoing flights. The MAC also measures what percentage of trips originate or end in Minneapolis, and the city takes credit for that portion of the MAC's emissions (Slotterback interview, February 10, 2012).

a world where cities compete, adding a system of measurement that dramatically increases emissions can be a risky thing to do. It requires a strong commitment to climate change mitigation that goes beyond the instrumental rationalities that push for the minimum. In its 2012 emission survey, Minneapolis has decided to add a consumption survey to the geographic plus production survey. City officials are expecting that this will nearly double the emissions attributed to the city (Slotterback interview, February 10, 2012).

Measuring carbon output is only the first step of the city's climate work. The city has also established goals for the reduction of greenhouse gas emissions as a component of the sustainability plan. The climate change indicator sets the goal of reducing the emissions of the city as a whole by 17% from 2006 levels by 2020 and reducing the emissions from city operations by 1.5% annually (City of Minneapolis 2011). As of 2012, according to the more recent, as yet unpublished carbon survey, emissions for the city as a whole have been reduced by 12.5% (Slotterback interview, February 10, 2012). Since the establishment of the indicator, the city has been able to reduce electricity consumption of city-operated buildings by 2% and natural gas consumption by 10% (City of Minneapolis 2011). The city is quite pleased with these numbers and sees them as a measure of success. However, city officials recognize that these successes are provisional, particularly the reductions for the city as a whole, for it is not just the city's efforts that have led to these reductions--many are due to factors far outside the city's control. The economic meltdown of 2007 has had deep effects on emissions. The Minnesota Department of Economic Development statistics show that employment in the

City of Minneapolis is down by almost 4% from 2006 levels (Slotterback interview, February 10, 2012). Many businesses in the city have had to reduce processes and production, leading to decreased energy usage and a decreased level of emissions. The degree to which the downturn has affected emissions cannot be calculated, but recovery will certainly lead to increases in emissions. The second major factor outside the city's control is an increase in winter temperatures over the last 6 years. Most of the recent winters have been above average, which has led to a decrease in the use of heating fuel and concomitant emissions. Because of the importance of the global economy and climate on emissions figure, it is not yet clear how effective the city's efforts are.

While climate and economy both impact the emissions of city operations, the city has much more control over these emissions. One important element of the city's work is policy that now requires all new city buildings to comply with at LEED silver level.[57] LEED, or Leadership in Energy and Environmental Design, is a program that emerged out of the U.S. Green Building Council. LEED design is meant to reduce the environmental impact of buildings and to provide an environment where individuals using that building can also reduce their impacts, and to transform the practices and the common sense of the construction industry to be more environmentally sound (Cidell 2009). LEED design takes into account and rates five major categories of building design: Sustainable Sites, Water Efficiency, Energy and Atmosphere, Materials and Resources, and Indoor Environmental Quality (with additional points for Innovation and Relevance). The City's Hiawatha Maintenance Facility, completed in 2010, achieved

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[57] LEED certification is divided into 4 tiers, certified, silver, gold, and platinum. The certified category is seen by many in the design field as barely acceptable, while platinum is seen as the level that truly demonstrates a strong environmental commitment (Denzer and Hedges 2011).

LEED platinum status. The city has not built any other buildings since the policy was established but has been working to install solar energy production and energy efficiency measures across the city in fire stations, police stations, maintenance facilities and at the Minneapolis Convention Center.

The other major effort at the level of the operations of the city is the installation of solar generation capacity on city buildings. Shifting to alternative forms of electrical energy generation is seen as one of the best ways for the city to reduce its emission. To this end, the city is working to increase the amount of alternative energy it purchases from Xcel Energy, the regional energy provider, and is also working to install its own generation capacity. The city is participating in the Solar America Cities program, a federal-local partnership to facilitate a shift to alternative energy[58] The program has been designed both to install generation capacity for the city and to help the city overcomes barriers to solar generation within its limits. The city has currently installed 600-kilowatt capacity of photovoltaic generators on city buildings, including fire stations, the convention center and maintenance facilities. They are hoping to increase this capacity to 1 megawatt by 2015. Additionally, the members of the sustainability office have been working to reformulate the zoning code to make a place for solar in residential housing. There was no clear set of regulations for solar in the original zoning code, and for solar to be installed across the city with ease there need to be clear regulations to guide it.

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[58] The Solar American Cities program is an effort not just to reduce carbon emissions but is also framed around the question of energy security. While the effects -- the deployment of increased solar capacity -- are the same in terms of either framing, it is important to recognize that climate concerns are often not enough to drive federal policy. There is a need to see how these forms of program emerge from the conjuncture of different kinds of political concerns.

Though the options are limited for mandating energy efficiency beyond the operation of the city government, the city has a few tools that it is using to reduce the energy consumption of residents and businesses. The city has teamed with the Center for Energy and the Environment, a local NGO, to provide energy audits and assistance for energy efficiency improvements. There are two different programs through which this is offered. The first is directed at private homeowners and provides energy audits and some energy saving interventions at a reduced price. Since 2007, 4000 households have taken advantage of this program (Slotterback interview, February 10, 2012). The second program provides rebates and loans at 0% interest for businesses to upgrade their buildings and equipment. This program has been less successful than the household-based program. Energy efficiency, while saving money, is less important for businesses than increasing market share and improving the customer base. The city has been unable to subsidize the program to the point that energy savings become sufficiently attractive. Another shortcoming is that these programs are not universally accessible. One must be a homeowner and have the financial wherewithal to participate in the home program or a business owner to participate in the business program. While the increases in energy efficiency and the concomitant savings would be very helpful for those in lower income brackets, it is out of reach because they tend to rent rather than own. There is an incentive program for multi-unit housing, but it has seen very little use, in part because landlords do not pay the utility bills. There is no way for these savings and technologies to be passed to poorer segments of society.

Faced with the limitations of altering the emissions of the city as a whole, the city has developed a broader set of indicators that will function synergistically with the climate change indicator. Addressing emissions requires more than just the rollout of solar energy and improvements in energy efficiency; emissions are related to the structural organization of the city (Bulkeley et al. 2011). The city needs to alter its socio-spatial organization to effectively change what is both possible and desirable for residents. The city sees transit-oriented development as central to this transition. Individual automobiles are a major source of carbon emissions. Although cities cannot mandate fuel efficiency standards for these vehicles, they can work to make driving less desirable and transit more desirable. Minneapolis was built up around a dense trolley system, but like other American cities, lost its transit system to the aggressive actions of the post-war American automobile industry. Over the second half of the twentieth century, transit ridership plummeted as cities were rebuilt to meet the needs of the automobile. The task at hand is the rebuilding of the city to put transit first. As a result the City of Minneapolis has been a strong advocate for the construction of light rail in the Metropolitan region. Transportation infrastructure is funded by the state and run by the Metropolitan Council, a regional body, but the City of Minneapolis has been instrumental in pushing forward the Central Corridor light rail and a Southwest Corridor light rail project.

The biking indicator and downtown transportation mix indicator are both designed to facilitate the modal shift away from private automobiles. The downtown transport mix indicator sets a goal of increasing the proportion of people who enter

downtown by alternative transport from 55% (as of 2003) to 67% by 2013 (City of

Minneapolis 2011). Rather than focus on the city as a whole, it addresses just the

downtown of the city. This makes sense but at the same time limits the impact. While

the density of downtown, its current status as a transit hub, and its centrality to the

economy of the region make downtown efforts more effective, it excludes the large

amount of travel in the city that does not flow downtown. With the active neighborhood

life of Minneapolis, this adds up.[59] The biking indicator does address the city as a whole.

It focuses both on the improvement of bicycle infrastructure and the increase of ridership

in the city. Minneapolis has been extraordinarily aggressive in its bicycle policy, and as a

result, the city has seen dramatic increases in bicycle infrastructure and ridership over the

last ten years. Both indicators are an effort by city council and city planners to reshape

the spatial organization of the city in such a way that alternative modes of transportation

are easier than automobile transport, thus improving the desirability of alternative

transport for residents.

The local foods indicator also is an attempt to reduce quantity of carbon produced

by Minneapolis through the reduction of food miles that underpin Minneapolis's food

system. Goals have yet to be set for this indicator so how exactly it will work is still

unclear. Again, this is an effort to make structural change through the re-imagination and

reformation of how the Minneapolis food system should work. All three of these

indicators have multiple motivations and impacts beyond their bearing on emissions.

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[59] In addition to the central business district, there are many neighborhood business districts, comprising
restaurants, coffee shops, retail establishments and service providers that are located throughout the city in
tracts ranging from multi-block corridors such as in Uptown to corner districts like those at Chicago
Avenue and 48th Street.

They directly or indirectly address the health of urban residents, the economy of the city, and climate change. All recognize the connection between technical systems and social change. While none of them measures emissions specifically, the kind of work they do is necessary to effect positive change on the climate change indicator. It is only through broad-scale socio-technical change, through the expansion and revaluation of people's choice and options, that the city government can impact the carbon footprint of the city as a whole.

Changing climate and everyday life in Minneapolis

While Minneapolis is working hard to identify where climate impact comes from and to reduce that impact, it has yet to seriously engage with the impacts of climate change on the city. Nearly all of the work the city is doing is focused on preemption and the reduction of the carbon footprint. Recent summer heat waves, an abnormally warm winter, and the May 2011 tornado in North Minneapolis have put questions of adaptation and resilience on the map for city officials. They are beginning to recognize that prevention is not enough – Minneapolis is experiencing a changing climate. Around the country, as cities are coming to this realization, climate change impact analyses are becoming best practice for cities (Hertsgaard 2009). Cities like San Diego and Seattle/King County have both commissioned detailed reports that look at different projected scenarios for climate change and analyze the preparedness of those cities to deal with the effects. The consequences for coastal cities are very different to those of cities in the interior. While San Diego's and Seattle's initiatives provide a model, they do

not provide a blueprint for what is to be done. Minneapolis needs to develop scenarios

that address the specificity of its location to begin to understand the city's vulnerabilities.

While specific studies on what the future climate holds have not been undertaken

for the City of Minneapolis specifically, analysis has been done for the state as a whole.

An analysis of the climatic data for the state of Minnesota reveals three major trends

(Seeley 2012, MDH 2011). First, winters have been significantly warmer, with major

increases in the mean low temperatures. Second, the dewpoint is rising across the board,

leading to greater degrees of atmospheric moisture. Finally, there is an overall increase

in precipitation and a change in the character and pattern of that precipitation – it is

coming in larger quantities in thunderstorm events in some parts of the state, while in

other parts of the state there has been a significant decrease in precipitation. The

implications of these trends are varied. In many ways, Minneapolis is geographically

positioned to benefit from certain elements of climate change – warmer and shorter

winters will cause a decrease in the need for heating gas, an increase in the length of

construction season, and an increase in the growing season as well. The economic

benefits of all these shifts are clear. Because of its temperate Northern climate and its

location away from the coasts, Minneapolis will generally be much more resilient to the

effects of climate change (Kahn 2010). This does not mean that there will be no ill

effects. Increased winter lows and warmer winters mean that freeze-thaw cycles will be

much more frequent, leading to greater stress on roadways and infrastructure. Warmer

winters also impact the survival rate of pests. Greater frequency of large and damaging

storms also have potentially severe consequences. The issue of greatest concern, though,

comes from the increase in dewpoint, which, in conjunction with summer temperature, has the potential to create dangerous heat indexes. In Minneapolis, six of the last ten summers have had dangerous heat waves driven by increased dewpoint (Seeley 2012). These effects are amplified by urban heat island dynamics, making cities particularly susceptible.

In the last year, the Minneapolis DHFS and the Minnesota Department of Health (MDH) have begun to assess the public health outcomes of climate change. They have been working to define vulnerable populations, process potential scenarios that could affect them, and identify resources that can address the challenges. The first scenario they have worked on is one in which dangerous heat indexes are coupled with a lack of power, or a lack of individual air conditioning. Extreme heat has been caused more fatalities in the last 25 years in the United States than all other severe weather events combined (MDH 2012). Consequently, populations vulnerable to climate change are defined as "anyone who has difficulty adapting to rapid changes in their environment" with a focus on age, biological or medical conditions, and social exclusion. Of particular concern are the elderly and children under the age of five. The DHFS/MDH collaborative has been producing threat/resource maps of the City of Minneapolis. Different categories of vulnerability are mapped in relation to the public resources available. In the first of the heat danger maps, the vulnerable population is children under five living in poverty, which is measured by percentage per census tract. Here vulnerability is defined both by age--young children are more susceptible than older children, and by social inclusion--the poor have less flexibility in coping with adverse

situations due to lack of resources. The resource overlay is public air-conditioned spaces, including movie theaters, museums, community centers at public parks, and libraries. The map gives a very basic look at where people could go if their home spaces become untenable for living. It does not provide broader analytics that could help the city assess preparedness. There is neither a sense of the number of people who are vulnerable, nor of the capacity of safe spaces where they could go. There is no careful analysis of gaps in the network of public air-conditioned spaces.
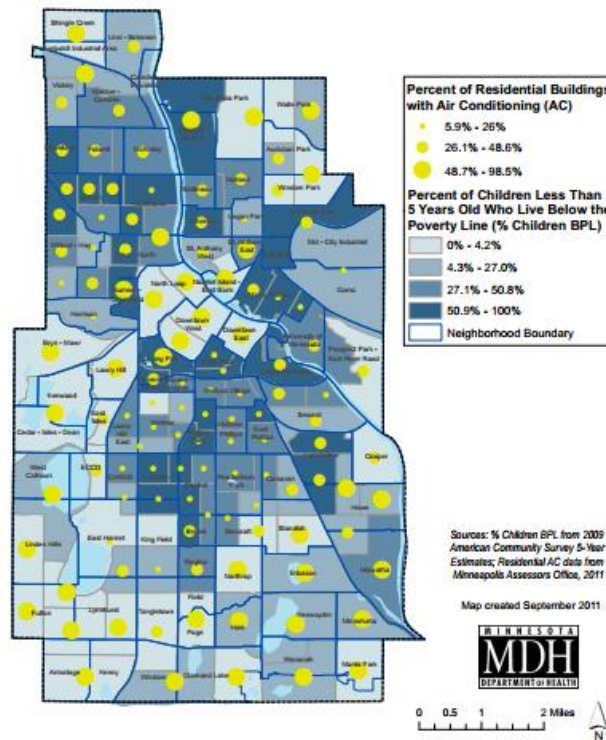

Figure 6. Centrally Air Conditioned Residential Buildings and Children in Poverty
Source: Minnesota Department of Health

Figure 3: Risk Map from the Minneapolis Draft Climate Action Plan (2013)

Public health is not the only area of concern for the city, but it is the only place where adaptation planning has begun. The lack of specific knowledge coupled with the general knowledge of the possibilities has the city worrying about other potential areas of

effect, such as the urban forest in this example: A climatological drought started in the fall of 2012. From August through December, the city had less than average rainfall. Winter did not provide relief for the drought, and warmer-than-usual temperatures compounded the situation. The concern on the part of many city officials is the integrity of the urban tree canopy. Drought puts trees under stress, making them more susceptible to disease and insects. Whereas in an average year winter temperatures would have killed off a great number of pests, the warmer temperatures of the 2012 winter would have been less effective in reducing the number of pests. This has led to serious concerns on the part of different city staff members about the level of damage that might occur to the ash forest in the spring of 2013. Whether this comes to pass or not is immaterial; what is important here is the articulation of anxiety and imagination and the way they summon particular futures into the present.

Balance between preemptive or mitigating strategies and adaptive strategies is seen as an essential component for addressing both the short- and the long-term risks of climate change (Rosenzweig 2010). At the start of the Climate Action Planning process, the city has not put much thought into the question of adaptation, and it does not have an important part in the way forward (Slotterback interview, February 10, 2012). Their systems of measurement and their programs have focused on the work of mitigation. Adaptation and mitigation work in the interest of different populations. Mitigation is meant to address the universal challenge of climate change. It is an attempt to push back the general threat that the climate poses to the world and the social order as a whole. As the next section will discuss, the universal threat is often construed as a specific threat to

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a way of life, and efforts focused on mitigation often serve to value the needs of a future elite over other populations.

Adaptive work often is meant to provide protection for the same elite populations as mitigative work. However, as the work of the DHFS and MDH shows, the focus on adaptation on everyday patterns of life and activity can also serve to emphasize the differential impacts of climate change. In exploring what the effects of climate change will be, it is clear that some populations will be better able to cope with these effects than others. People with lower incomes will have less access to cooling technologies. This is not where the vulnerability ends. When looking at the way that climate change intersects with other forms of disruption in the city, we can get a sense of a complicated landscape of vulnerability. The danger posed by Emerald ash borers to the urban tree canopy will amplify the disproportional impact. The city's tree canopy provides essential insulation functions. As the ash trees die, residences in the Northside will face even greater demands for cooling. The response to the threat posed by Emerald Ash Borer can either target its focus on vulnerable areas or provide equal coverage across the city. Each of these conforms to a different understanding of fairness: one treats all residents of the city the same, the other recognizes the differential vulnerabilities and capacities of different populations.

To establish a response to climate change that balance these two senses of fairness and that adequately responds to both, universal threat and particular vulnerability, requires citizen participation (Rosenzweig 2010). People must push the city to think about and address the differential impact. This requires devoting more resources to the

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more vulnerable. In Minneapolis, city officials definitely have an agenda in mind for the

Climate Action Planning Process; they see it mainly as a tool to reduce the city's broader

impact. If and how citizens will be able to push for an approach that deals more with the

differential impacts remains to be seen. Because the effects of climate change will be

less pronounced in Minneapolis than many places in the country, there is less of an

impetus to pursue costly adaptations that address uncertain futures. Technical solutions

that address general well-being and are more prone to cost-recovery through energy

savings are seen as the best way forward for the city.

Climate, Justice and Sustainability

The possible effects of climate change have led to increasing calls for attention to

issues of climate justice.[60] The need to address the serious negative impacts of climate

change rarely is framed as a purely functional need; there is nearly always an ethical

element to it. A strong argument can be made that, as contributors to climate change, we

have a responsibility to those who will be impacted. As with sustainability, there are both

inter- and intra-generational elements to climate justice. First and foremost, it is clear

that climate change is a threat to future generations. This concern figures most

prominently in the many different calls to address climate change. James Hansen, the

NASA scientist who first issued warnings to Congress in 1988, has published a book

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[60] International figures such as Kofi Annan and Mary Robinson, the former president of Ireland, have lent their voices and foundations to advocate for Climate Justice. At the Earth Summit in Bali in 2002, a coalition of people's groups from around the world came together and issued the Bali Principles of Climate Justice, a manifesto meant to highlight the human impact of climate change, particularly on the most marginal populations of the world. Academics also have been weighing in, arguing that justice concerns must be included in the discussion of climate change (i.e. Klinsky and Dowlatabadi 2009, Marino and Ribot 2012).

called *The Storms of My Grandchildren*. The journalist Mark Hertsgaard's book *Hot*

again and again comes back to the figure of his daughter Chiara and his guilt and anger

over the conditions she will face. It is the child of the future who is the victim of climate

change, and we have an ethical duty to minimize the impact of climate change on the

lives of future generations. Climate change will affect everyone, but it is easy to create

sympathy and outrage when everyone is not anyone somewhere else but our own

children. While the people of faraway places may seem distant and hard to relate to,

people can associate with the plight of their own children.

The ethical dimension of climate change demands that we look beyond our own

communities and pay attention to the plight of distant and faraway peoples because our

own lifestyles and consumption habits play a large role in the production of greenhouse

gases. Ethical responsibility is often quantified by the attribution of carbon emissions to

individual countries, cities or population. Different countries have differential

responsibility for the emissions that have produced climate change: industrialized nations

have been producing huge quantities of emissions for a long time, while newly

industrializing countries are producing increasing amounts of emissions in the present.

Many of the calls for justice center around the relationship between the developed and the

developing worlds and the question of who should pay for greenhouse gas mitigation

(Barnett 2007). The main argument is that developed countries had no limits on

emissions for their development and are not only responsible for the bulk of emissions

that have occurred, but remain major emitters. As a consequence, if they want poor

countries to engage in cleaner development, they should help pay for these efforts. The

global system is a system of nations, and so it is at the scale of the nation that climate justice is imagined and addressed.

Though the bulk of work on climate justice is based in the geopolitics of nations, much of the recognition of differential impact is brought to earth in the city. The urban poor, particularly in the third world, are faced with a lack of necessary infrastructure and often live in more environmentally marginal areas. The combination of these two factors makes them much more vulnerable to the impacts of climate change than their wealthier counterparts (Baker 2012). The question that emerges then is how to deal with this differential risk. The answer varies depending on whether the difference is framed in terms of prevention of climate change or resilience to climate change. A preventive approach does not take differential impacts into account. It is the generalized threat and the need to prevent that generalized threat that drives a preventive approach to climate change. The specifics of who will be affected and how are not as important as the need to prevent the broad impacts of climate change. The adaptive approach is based in an understanding of the impacts of climate change on everyday life. This opens up opportunities for the discussion of climate justice precisely because of the differential impact climate change will have on everyday lives and the different kinds of adaptive strategies necessary to deal with these impacts. There is no guarantee, however, that this accounting will occur. The scale at which the differential impacts are to be addressed can lead easily towards generalized impact analysis on the urban scale as a whole that loses sight of the disproportionate impact on the urban poor. Additionally, all adaptive strategies must pass through the calculus of cost-benefit analysis (Baker 2012): efforts

that deal with the particular impacts on the urban poor must provide greater benefit than those that will help a broader swath of population.

The recognition of the differential impacts of climate change has led to calls for climate justice. However, the imagining of climate change functions in ways that simultaneously undermine calls for justice and elide the differential impacts of climate change. The differential impacts are always weighed against the general threat of climate change. There are two elements to this. First, climate change reformulates the understanding of humans as a species and their relationship to the earth. Second, climate change is a global risk that works to undermine a universal "way of life." Chakrabarty (2009) argues that climate change has changed the way that we need to consider the place of humanity. At the scale of the global environment, humans are now understood to be geologic agents.[61] While thinking of humanity at the scale of the species may be essential for conceptualizing the causes for and broader impacts of climate change, it also serves to smooth over the differences within the species. Differently placed individuals contribute differently to emissions. Modern life still eludes millions of residents of the world. Similarly, while we will feel the impacts as a species, certain populations are at greater risk than others and certain populations have the ability to adapt while others do not. This is the crux of the issue. If we are to understand the implications of a climate change-based imagination of the city, we need to look at the tensions that emerge between species thinking and an approach based in an understanding of a heterogeneous set of populations.

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[61] What this means is that as a species we are no longer purely subject to environmental conditions but are changing the composition of the environment at a geological scale. We do not just disturb the ecosystems in which we are embedded; we alter the global environment, the climate and geological processes.

What climate change threatens is not the end of the world, but the end of the world as we know it. The geological entity of the planet will continue and life in some form or another will continue as well. Climate change threatens extinction to multitudes of species that currently occupy the earth, and it threatens the social organization that defines the world today. It is this social order, our way of life, that most would say must be preserved. Like humanity, our way of life becomes a universal category. This ignores how the way of life to be defended actually depends on the social position of the speaker who defines "our". The way of life that must be defended is not universal and is, in fact, predicated on the production of massive inequality. "Our" way of life is heterogeneous, involving both massive privilege and massive exploitation. To preserve our way of life means to preserve the violences and exclusions that are central to the constitution of modern life. All human life is presented as equal in the threat that the future poses. The fact that "our" way of life may not in fact be desirable for many who live it and may not be necessarily worthy of preservation gets lost in the face of the universal threat. Additionally, when the universality of the threat is combined with the urgency that emerges from its imminence, the space for meaningful debate about what is being preserved and for whom, and what life is valuable and should be protected is closed off. The threat of climate change serves to depoliticize and delegitimate debate around the nature of the response to the threat (de Goede and Randalls 2009). What it comes down to is that "to protect, save and care for certain forms of life [the purpose of anticipatory action] is potentially to abandon, dispossess and destroy others" (Anderson 2010: 780). The imagination of the future as catastrophe authorizes a narrative and a course of

anticipatory action that values the future lives of some groups above both the current and future lives of others.

The city of Minneapolis frames its understanding of climate change within a framework of global and intergenerational justice; it pushes itself beyond the bare minimum of action because it recognizes that "we are all in this together." In choosing to account for its carbon emissions, Minneapolis recognizes a general right to the plant and to a healthy environment for all people and acknowledges ethical responsibility for its environmental impacts; a more self-interested city could easily pursue a less rigorous approach to climate change. Yet, despite the city's choice to act responsibly, there is an erasure of difference in its vision of climate change that simultaneously creates a virtual disavowal of responsibility. Minneapolis's ethical framework sees its responsibility to the marginalized as a subset of its commitment to universal humanity; it fulfills its ethical obligation to the marginal through addressing the needs of the whole. The city has not looked at the differential cost and benefits of its desired structural changes on the different communities in the city. The building of transit-oriented development is often tied to the gentrification and the eviction of the poor from redeveloped areas (Pollack et al. 2010). The city's energy efficiency and solar programs benefit home owners more than they do renters. Even as the city begins to map out the differential vulnerability, as in the geographic distribution of cooled spaces in poorer neighborhoods, it has not asked how to ensure that people in North and South Minneapolis can be made safe in their own homes. The definition of the problem address a symptomatic manifestation of poverty

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and provides a solution for what to do in an episodic heatwave, but does not get at the broader structural issues that cause people to be in danger during those heatwaves.

If poverty around the world is a major indicator for inability to cope with the effects of climate change, should questions of climate change put poverty first before adaptation? If we look at how climate change structures the discussion of urban life, it becomes clear that poverty, marginalization and inequality are secondary to the general threat of climate change. For climate change work to effectively broach issues of justice and equity, it is necessary that it not just address the symptoms of vulnerability but that it look to decrease the structural vulnerability that stems from poverty and marginalization. This means that adaptation does not just require technical solutions, but needs to seek out political solutions to the inequities of our current social order.

Sustainability, Resilience, and our Way of Life

In their discussion of the ethics of climate justice, Posner and Weisbach (2010) argue that in any international treaty, questions of carbon emissions must be dissociated from questions of redistributive justice between nations. Though there are valid arguments made by developing countries about the fairness of emissions standards and mechanisms of payment for carbon abatement, they must be set aside. The only way to ensure that rich countries will buy in to reductions in carbon emissions is to enact this separation. And the severity of the climate change risk requires that pragmatic action take precedence over just action. Their argument could be rehashed at the scale of the

city--that the need to be effective supersedes the need to adequately address the needs of the marginalized.

I would argue that this is not the case. We cannot let the urgency of climate change derail discussions of justice. We cannot uncritically defend the unacknowledged privileges that our way of life provides us with. We need to begin to think about how the ever-expanding concern about climate change presents us with opportunities to address the inequalities inherent in our way of life.

My purpose here is not to challenge the importance of addressing climate change. Just as the Minneapolis sustainability report says, "The science is clear – global warming is real, we are responsible, and it is a threat to our society" (City of Minneapolis 2008). We must take the dangers of climate change seriously; the potential catastrophic future does demand decisive action. But this does not mean that we accept without question the ways that climate change is deployed to make policy and the way that programs are put into place to address the challenges of climate change. As with other critical work, we must work to unsettle our commonsense understandings of the world. We need to explore how climate change is embedded in existing power relations and serves as a means to advance particular interests over others. The pursuit of the general welfare of the world elides the importance of addressing the specific challenges that marginal populations face.

As one of the dominant imaginations that undergird sustainability, the imagination of climate change has essential implications for the kinds of outcomes emerging from sustainability agendas. The tension between local foods and food access

present in Homegrown Minneapolis is so pronounced in part because of how local food is tied up with concerns about climate change and the preservation of "our" way of life. Despite the power of the climate change problematic, Homegrown remains a place where issues of food access are addressed, even though there is not general agreement that this issue should be included in the building of a local food economy. For the sustainable city to be a site of progressive politics requires that we move beyond the limited futures that often define it. Without an expanded imagination of what is possible and what is desirable, sustainable development threatens to reproduce the inequalities that define the modes of development it was meant to replace.

The shift from prevention to adaptation and the inclusion of resilience into the understanding of sustainability provides such an opening. It allows us to shift the discussion of climate change from that of general threat that we all bear to specific questions of impact and inequality. A focus on resilience provides no guarantee of any discussion of these issues. But it does provide a conceptual opening and a discursive framework in which the impacts on daily lives are made visible and valued. It provides an ethical framework around which claims can be formed and demands can be made. While sustainability is most often presented as the attempt to sustain or preserve our way of life with all of its inherent inequalities, demands for resilience can be framed in relation to those inequalities with demands for increased assistance for those who are most vulnerable.

Even the conservative imagination of sustainability as the preservation of life as we know it provides certain kinds of opportunities for reimagining what the life is that we

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are trying to preserve. The way that future is seen as a break from the present opens up discursive space for thinking about the social organization of human life. If there is a break, what will life after that break look like? Our way of life is what we seek to preserve in the face of the impending catastrophic break, but it is also the cause of that break. The specter of the collapse of the ever-expanding capitalist economy in the face of natural constraints can provoke us to think about other ways of social organization that pivot around different logics of co-existence. While sustainability in many ways seems to be about the preservation of an environmentally and socially harmful ordering of society, climate change can provide a site for contestations of the present order through the production of new imaginations of a post-climate change future.

Chapter 6

Conclusion: The Future of the Sustainable City

This dissertation is a partial answer to Slavin's (2011) call for more empirical studies on sustainability in American cities. Rather than look for best practices that will be generalizable across the American context, I have taken a more critical approach to the question of sustainability. In shifting the focus of the study from what sustainability is and how we make it happen to what sustainability does, I have worked to draw attention to the different kinds of capacities and possibilities and the foreclosures and exclusions that sustainability can produce. Too often, the tendency of planning to see sustainability as a technical problem in need of technical solutions fails to adequately address the ways that sustainability often serves as a political project that works to shape the city in the interests of the bourgeois and elite classes of the city. We need to pay attention to both how the articulation of the idea of sustainability and the choice of programs and policies have consequences for who benefits and who is excluded. I offer this critique of sustainability not to undermine the ideals of environmentalists and planners who seek to make cities better both for their residents and for the environment but because I see those ideals and the imagination of sustainability they underpin as essential for the production of a better future.

This dissertation is situated between two very different literatures on sustainability. The first, based in urban planning, seeks to move forward the agenda of urban sustainability. It looks to identify what works and to distill and package that best practice to be replicated in other cities around the country and the world. For the most

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part, it does not interrogate sustainability, but instead assumes that it can and should be replicated to make a better world. The second literature is one that has emerged in critical geography that challenges both the functions and desirability of sustainability. Based in critiques of capitalism, it sees sustainability not as the solution for the world's environmental problems, but instead as a policy agenda that supports the needs of a capitalist political economy, which will, in the end, amplify rather than solve the world's environmental problems. In these approaches, the best sustainability can do is to provide a palliative to the environmental crises of capital in the short term and at worst it will undermine the potential for an environmentally sound socially just future.

This dissertation was meant to intervene in both of these literatures. As regards the first, it is meant to provide a sense of how a more critical approach to sustainability can inform planning practice. There is a need for planners to recognize the political nature of their work, even when that work is thought to be technical and apolitical. In using some critical policy theory to think about how sustainability policy works, I have tried to substantively engage the planning literature while not dismissing the context in which the work occurs. My intention was to lay out a method by which planners can move from asking what sustainability is and how to make it happen to an approach that takes more seriously the differential possibilities that different kinds of interventions produce.

In relation to the critical geographic literature, I argue that while sustainability is indeed problematic, it still can serve as a rallying point for positive political change. Keil's (2007) assertion that sustainability and capitalism are incompatible leaves no place

for gradualist political change. The only way to a sustainable future is the utter collapse or overthrow of the capitalist system. This serves to marginalize a wide array of activity that surrounds sustainability work. Swyngedouw's (2007, 2009) discussion of post-politics pushes this further arguing that sustainability fits within a framework of environmental politics that is actually disabling to a positive progressive future. I disagree with this assertion. Swyngedouw engages more in the construction of an ontology of politics rather than an analysis of the politics of sustainability itself. Moreover, my reading of Jacques Ranciere leads me to view the politics of sustainability as not just the establishment of an oppressive and unequal hierarchy, but as the establishment of a social order that is seeded with the conditions to undermine that order. Ranciere allows that some orders of police are better than others: as such, the politics of sustainability can push for a more just system of order. There are resonances between Swyngdeouw's post-political approach to sustainability and previous debates over the nature of development. The move of post-development theory to reject development outright was met with resistance not only by those who had a stake in maintaining development, but also by those who saw it as a complicated and heterogeneous process, offering undeniable promise even as it sometimes wreaked misery. There may be interesting connections to pursue between these two critical moments: the earlier moment of development and the present moment of sustainability and climate change.

To build my understanding of sustainability, I have argued that it is helpful to think about sustainability as a system of order. In choosing to pursue sustainability, cities are not just adopting a new set of policies; they are beginning to fundamentally

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restructure the socio-spatial organization of the city. Orders are meant to arrange the world such that everything is in its proper place. Orders also tend to elide those activities, which do not conform or fit comfortably within the conceptual framework of the order. Looking at sustainability as a system of order allows us to explore the activities, spaces and subjects that sustainability valorizes, those that it problematizes and those that it excludes and seeks to erase. These are not just the result of individual policies but are the result of the way that sustainability becomes an organizing principle for the city through which it reshapes both the imagination of what cities can and should be, and the material form of the city.

This dissertation has provided a first brush at these issues. Due to the scope and nature of the project, I had to limit my discussion. There are certain questions and lines of inquiry that, while important, were omitted. First, the dissertation does not delve into the kinds of practices and subjects that are produced by the ordering the sustainability work strives to establish. With the main focus being on policy makers, there is less attention to the spaces, subjects and practices that are important in circumscribing the proper place of different groups and activities in the city. Second, the dissertation does not fully address the broader political economy of urban development. I made the strategic choice to study the application of sustainability policy in Minneapolis rather than urban development writ large. It is important to recognize that urban development in Minneapolis is shaped not merely by city government and citizens but also by the large corporations that are based here. The interplay between these various groups is not explored, but it is a very important component of the urban politics of sustainability.

Third, the interrelationships between the local and the global are also not explored. A focus on Minneapolis has meant that the intertwining of sustainability policy with the forces of global political economy remained neglected. Finally, there were a number of junctures where the intersection of race and class seemed important but I did not have the wherewithal to explore these in greater detail.

To extend the work of this dissertation, some distinct interventions will be necessary in order to address the limits previously mentioned. First, ordering is not a uniform process. It operates in different places in different ways. To understand it better, it would be important to look at how different American cities have taken up the question of sustainability. The imperative here is not to explore best practices and find out how to get sustainability right, but instead to explore the ways in which the universal policy discourse of sustainability shapes different cities in different ways. Even St. Paul, which is contiguous to Minneapolis and similar in culture and size, has chosen to approach sustainability in different ways than Minneapolis has – and as a result has been ordered in ways that are different from Minneapolis. Studying a diverse range of cities will allow for a more sustained analysis of the broad set of possibilities that sustainability opens up. While best practice is not the goal of this effort, this sort of investigation may be useful for thinking about avenues of socio-political intervention that have pushed sustainability work in progressive and more expansive ways. They may not be replicable, but they could expand our imagination of possibilities.

Second, this dissertation has focused primarily on formal circuits of power. It has addressed how the state and its partners have conceived of and advanced an agenda of

sustainability. It has not addressed how these programs actually affect people's lives. The capacities and possibilities that are discussed are general openings. In studying what sustainability does, the next step would be to explore the kinds of practices and subjectivities that are produced at the scale of people's everyday lives. A focus on both the practices of planners and urban residents as they relate to sustainability agenda is important to understand what sustainability is and can do. Further work in this area should focus on three groups. First, we need to look at the people for whom sustainability already is a priority, those who see themselves as belonging to the sustainable city. These people are some of the main drivers of the work of sustainability. It is their desire that has pushed public officials to move forward with sustainability. How has the organization at the level of the city impacted their own sense of their place in the city? Second, we need to look at those groups that have been targeted for improvement by the sustainability programs. How has the disciplinary gaze of sustainability shifted their own senses of self and their practices? Finally, there are those that that have no part in the ordering that sustainability strives to establish. They are unaccounted for and have not been engaged with the problem of sustainability. Because of their lack of any clear or direct relationship to the issue of sustainability, this group may be difficult to identify and engage, but at the same time it is important to explore their marginality.

Finally, I would like to return to John Law's argument that that orders are not singular. There are always multiple systems of order at work in a given place at a given time. Most of the work on sustainability, including this dissertation, does not adequately connect the sustainability agendas of cities with the other work that cities do and the

other imperatives that order the work of cities. In addition to sustainability, cities are ordered by concerns about growth, security, and health among others. A focus on multiple systems of ordering has important empirical and theoretical consequences. Empirically, it may allow us to better understand how and why certain kinds of programs are put in place. The concerns of one system of order are frequently counter-balanced by those of others. The calculus of decision-making has to take all of these into account. In looking at Minneapolis, it is clear that while sustainability was a priority for some staff and some councilmembers, it was not for others. Rather than trying to understand sustainability as the main driver of city policy, we need to contextualize it as one of many. In so doing, we can better address the broader political economy in which sustainability is situated. Theoretically, an attention to the multiplicity of order allows us to understand how different systems of 'police' serve to 'partition the sensible' in different ways. Ranciere's discussion of ordering does not full address the question of the multiplicity. For Ranciere, the police divides the world into a system in which everyone has a proper place. However, if we fully embrace the multiplicity of any system of order, it means that everyone and everything will have multiple proper places and multiple positions. The tensions and (dis)articulations between these multiple proper positions might have important political consequences as those tensions could generate openings and slippages that undermine the notion that any place is proper. Through the extensions I have proposed, we can be able to both theorize sustainability better and push it closer to realizing the ideals of justice it promises but rarely achieves.

While sustainability has become a hegemonic principle in urban planning over the last ten years, there are very real challenges for the ongoing functionality of the sustainability project. In a recent volume, *The Future of Sustainable Cities*, Raco and Flint (2012) argue that the global context in which sustainability has been pursued has fundamentally changed. Sustainability, they argue, gained prominence and dominance in a period characterized by expanding growth and opportunity. The financial crisis and the subsequent changes in the economic organization of urban and government finances have decreased the desire and the ability of cities to pursue agendas of sustainability. In boom times, they argue, concerns for justice and environment could be added, whereas in times of austerity, they are a much harder sell. Governments move from managing the effects of growth to attempts to (re)create growth.

In the same volume, Whitehead (2012) has written a pre-emptive obituary for the sustainable city. Whitehead's analysis grounds the social and spatial organization of sustainability in a framework that assumed that the tensions between economy, environment and equity were surmountable; cities have pursued policies that assumed that a win-win-win situation could be produced. A shift to alternative paradigms is now difficult, as this failed paradigm has been built into the urban fabric and into the logics of the operation of cities.

Is that it then? Will the gains of the last twenty years be lost as a new set of economic and structural logics take hold? Will the environmental and social protections that have emerged as part of the sustainability agenda be discarded in the attempt to shore up the myth of ever-lasting growth? Although scholars such as Flint and Raco or

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Whitehead are generally pessimistic on this count, they also seek routes by which sustainability can be preserved and reimagined. As Whitehead (2012: 43) argues, "there is far more to lose than to gain from the demise of sustainable urban development as a key principle of urban planning."

Looking to the case of Minneapolis, I would argue that cities will not necessarily discard their pursuit of environmental protection and social equity in the face of environmental crisis. There are three elements of the Minneapolis plan--structural, programmatic, and procedural--that point to an ongoing commitment. First, let's look at the structural element: When the City of Minneapolis established their sustainability initiative, they chose to have a very small (one to three person) sustainability office, with most of the sustainability work being devolved to the operations of city departments. Departments were required to include sustainability into their business plans and have their staff engage in sustainability thinking in the way that they do their work (Musicant interview 2010). Because much of this work is unfunded, there have been few resources for the city to push for new programs under the rubric of sustainability. However, the design was meant to encourage city departments to consider how to do their work more sustainably and was designed precisely to weather financial crisis. Gayle Prest, sustainability director for Minneapolis, pointed to the difficulty that cities like San Francisco were having in maintaining a large sustainability department with diminishing urban finances. Minneapolis has not been similarly struck. Sustainability remains limited more by staff time and interest than by funding. The goal of the Minneapolis approach is

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to change this and to make sustainability logic part of how city staff think about and perform their jobs.

Programmatically, sustainability in Minneapolis remains a changing and dynamic project. While the city does not want too many indicators, they return to the indicators every year to evaluate how they are doing and what needs to be changed. In 2010, again in the midst of the financial crisis, councilmember Cam Gordon spearheaded an initiative to establish a new indicator meant to measure poverty and employment. Minneapolis has one of the greatest disparities in employment between the black and white populations anywhere in the country, and 60% of minority children live in poverty (Brinda interview July 23, 2010). Gordon saw this as unacceptable and as something that had to be taken into account as part of the city's sustainability agenda. The council voted unanimously to make employment and poverty a sustainability indicator. In this case, it was neither a structural logic of sustainability nor a demand on the part of the unemployed and excluded to be included; rather it was the leadership of the city's most liberal politician that brought another justice-oriented indicator into the sustainability report and it is his ongoing commitment and attention that will keep city staff working on it.

Procedurally, the requirement for an annual report helps drive the work on sustainability on the part of city staff and councilpersons alike. City staff report to city council every year on progress towards achieving the indicator goals. Many city staff indicated that it was this feature of the sustainability initiative that actually made the biggest difference in their work. Because of the yearly reporting, city council is regularly reminded of the sustainability work the city is doing. Even those councilpersons for

whom sustainability is not the biggest priority are confronted with both the success and the failures of the city in meeting its goals. For Prest, an essential part of this reporting is that both good and bad results are reported without negative consequence for staff people (Prest interview, August 3, 2010). Because of this, Prest said, the city is better able to engage constructively with the areas in which it is struggling.

While none of these elements guarantee that Minneapolis will either continue to pursue sustainability or that issues of justice will remain on the table, these elements have indubitably improved the likelihood for ongoing commitment by the city to sustainability. As this dissertation's broader discussion of sustainability in has shown, even when everyone agrees that sustainability is important there are disagreements about what constitutes sustainability and how the city should move the sustainability initiative forward. Because it is conceptually open, city planners, government officials, bureaucrats, and community partners all can make claims. Sustainability does not necessarily foreclose difference. It is a site that enables those who have no part to make claims against its universal promise.

It is not just the changing economy that undermines the potentials for the sustainable city. As I argued Chapter 5, the potential ecological threats of climate change present a danger that has fundamentally changed what sustainability is about. Sustainability can no longer just be about the preservation of our current way of life; it must now prepare us for life in a changing climate future. Wainwright and Mann (2012) contend that we must not only begin to address the possible ecological futures that climate change will bring, we must also begin to address the possible political futures.

They argue that the challenges that climate change will pose will be so dramatic that they will fundamentally restructure the world. Because sustainability is increasingly taking on the question of climate change, I think it is important to explore how agendas of urban sustainability might push us towards these futures and how can we work sustainability now to move us toward a just future.

For Wainwright and Mann, the political futures they envision emerge from two sets of variables: first, whether or not the capitalist mode of production continues to be the dominant economic order of the world, and second, whether the political organization of the world is based on a planetary sovereign or an anti-planetary sovereign. From these, four possible futures emerge. Climate Leviathan occupies the capitalist, planetary pole; Climate Mao the non-capitalist, planetary pole; Climate Behemoth the capitalist, anti-planetary pole; and Climate X, the non-capitalist, anti-planetary pole. Sustainability has the potential to lead to two of these poles: Climate Leviathan and Climate X.[62]

Climate Leviathan is the most likely model for the future based on where we currently are. It involves the consolidation of global power to build a carbon regime that preserves the interests of capitalist corporations and the elites of the Global North. It entails the global monitoring and enforcement of carbon emission standards by a militarized international body. More than anything, Climate Leviathan seeks to entrench and sustain the current "way of life," complete with the increasing levels of inequality and diminished life chances that mark the current arc of capitalist development. A

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[62] Climate Mao represents an authoritarian, territorial sovereignty based in the revolutionary impulse of the proletarian and peasant masses of Asia forcing the world to come to grips with climate change. Climate Behemoth marks the ascendance of reactionary conservatism grounded in a libertarian distrust of the state and rallying in defense of capitalism. More than anything, it leads to inaction on the issue of climate change.

sustainability policy that does not interrogate the question of what is being sustained for whom and that seeks to continue a win-win solution for economic growth and environmental protection will push the world in this direction. Part of the power of Climate Leviathan is that it has been presented as the only alternative to end of the world. This represents a dangerous lack of imagination on the part of much of the Left.

Climate X is the only possibility for a just climate future, according to Wainwright and Mann. Climate X is radically democratic, decentralized resistance against both the idea of global sovereignty and the elite politics of sustainable capitalism. They point to a global coalition of marginalized peoples' groups as the seeds of this kind of movement, a coalition that both firmly rejects the efforts of the United Nations Convention on Climate Change while at the same time demanding real reduction in carbon output. "Climate X," they argue, "is worldly and structurally open: a movement of the community of the excluded that affirms climate justice and popular freedoms against capital and planetary sovereignty" (17). How we get to this future remains an open question.

How might sustainability help us get there? Sustainability cannot and will not lead to the immediate overthrow of either the global sovereign or the capitalist mode of production. However, if we return to Nancy Fraser's (2012) discussion of justice, we are reminded that a just social order is not something we can simply inaugurate. As social orders are remade, we must constantly work to address the injustices within the previous order. Sustainability holds out the promise of justice. While it fails to achieve that promise again and again, it leaves open the possibility for a more just future. This is not

a false promise. As claims of those who have no part are made in the name of sustainability, it reshapes the system of order to be more inclusive and more just. Sustainability makes possible a gradualist and progressivist approach to a more just world.

Leaving aside the question of whether or not gradual change will be sufficient in the face of our unpredictable, unknowable climate future, we must not reject sustainability merely because it does not immediately take us to where we want and need to go or because it will not get us all the way there. Sustainability is an issue around which many groups can agree and find common ground. While they agree that it is important, disagreements persist over what it is and should be. Even as sustainability becomes entrenched as a system of order, it opens the possibility for disruption and disorder. In this way, sustainability remains an important site for contested politics around the socio-environmental conditions of our world.

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Appendix: Methodology

This dissertation is about the way that sustainability, as a universal policy agenda, gains traction in particular places and begins to reshape and remake the ways that that urban space, urban populations and urban policy function. In other words, it is about how sustainability is a process of socio-environmental ordering. At a broad level, I was interested in how sustainability structured the work of the city and how these structures made space for issues of justice and equity. These interests translated into four specific research questions.

1) How is sustainability imagined by those who are working for it?

2) What does sustainability do?

3) How is sustainability done and by whom?

4) How and in what ways have issues of justice and equity been pursued in conjunction with the work of sustainability?

To get at these questions, the dissertation was grounded in an approach influenced by the questions that drive institutional ethnography. I do not engage in a full-scale institutional ethnography. Rather than a deep ethnographic analysis of the functioning the city government, I base my analysis on in-depth interviews with city staff. However, the questions that institutional ethnography asks are important for the work that I am doing. Institutional ethnography (IE) is a methodological framework that seeks to understand the relationship of everyday experience to institutional relations of power (Campbell and

Gregor 2004). Dorothy Smith (2005), the founder of IE, sees it as a means to explore

social organization or social order by looking at "how things are actually put together" or

"how it works," where "how" and "it" are left indeterminate. It studies how institutions,

knowledge production, daily experience and the act of researching the forementioned are

all tied together. Smith's initial work (1986) was an explicit attempt to build a

"sociology for women" rather than about them. It was meant to bring the experiences of

women into conversation with the structural relations of power, what Smith calls "ruling

relations" and the work of social scientists that explores the experience of women. IE

does not just focus on a sociology for women; researchers have used IE to examine health

care (Campbell 2000), education (Manicom 1999), surveillance studies and policing

(Walby 2005), development and environmental policy (Turner 2004).

Importantly, IE attempts to de-center the study of power. It recognizes that social

organization is not just a result of intentional government action but occurs through the

dispersal of ruling relations throughout the social institutions of our lives (Ng 1995,

Grahame and Grahame 2000). It demands attention to the multiple sites and scales at

which ruling relations shape the social lives of peoples. As Taber (2010) argues, "ruling

relations do not compromise a simple entity that controls people's lives. They are

enacted and resisted by people who make regulations (i.e., government policy makers and

school administrators), and by people affected by the regulations (i.e., teachers and

parents), who also may be able to affect the regulations (i.e., through parent/teacher

organizations and/or through civic participation"(10). In its method of analysis, IE

explores the relationships of texts to practice. It studies texts, as laws, representation, and

policies and how they "function to organize and dictate social and cultural space for particular individuals and groups" (Wright 2003: 245).

As I work to build an understanding of the way that sustainability shapes the structure of the socio-spatial order of the city, I focus most on the constitution of ruling relations. These are composed not just of the state apparatus but also of the variety of institutions that work with the state to make sustainability happen. As Taber notes above, the individuals who operationalize the work of sustainability for the state are not just subservient instruments of the state but play a role in shaping how ruling relations are composed: in short, their interpretation and implementation of sustainability play a role in shaping what sustainability is and can do. To limit my research project, I chose not to study the specific impacts of sustainability policy on the life conditions of the poor and the marginalized of the city. While this approach would be fruitful, I wanted to address the kinds of structural possibilities and foreclosures that emerge from the implementation of sustainability as a system of order. I wanted to explore how sustainability takes shape within the circuits of power.

This follows the anthropological approach of "studying up" (Nader 1972). There, Nader calls for a re-orienting of the way we ask questions about social problems. In working to explain poverty, rather than asking why are the poor so poor, we ask why the affluent are so wealthy. "What if, in reinventing anthropology, anthropologists were to study the colonizers rather than the colonized, the culture of power rather than the culture of powerlessness, the culture of affluence rather than the culture of poverty" (289)? Doing this not only shifts the questions we ask and the analytical focus of our work, but it

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also opens up different frameworks of explanation. It allows us to explore the connections between power and powerlessness. A move to study up does not disavow studying down, but instead uses an analysis of both "up" and "down" to explore the relational construction of social problems. In using this to study sustainability, I look at how sustainability emerges from the work of city officials, bureaucrats and partners rather than looking at how residents who are not involved with the sustainability program experience its outcomes.

Research Design

This dissertation's research was carried out between May 2010 and February 2012. Data was collected from four sets of sources. First, I analyzed documents produced by the city that discuss the actions and priorities of the city. This includes the yearly sustainability reports, the five-year business plans of the different departments, the city's comprehensive plan, documents reporting on the city's climate change and local food efforts, and early exploratory reports that influenced these (for details, see below). Second, I obtained minutes of official city council meetings, city government subcommittee meetings, meeting of the Citizens Advisory Committee and the Environmental Coordinating team, and task force meetings for Homegrown Minneapolis. Third, I attended public meetings and conferences where the city was discussing and engaging with the community about its sustainability work. This included meetings of the Environmental Coordinating Team (ECT) and the Citizens Environmental Advisory Committee (CEAC), public outreach meetings about Homegrown Minneapolis and the

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Climate Action Plan, and local events addressing the work of Homegrown Minneapolis. Finally, I conducted extended interviews with different members of city government and partnering organizations. I spoke with the mayor, city council members, the staff of the sustainability program, lead staff members in charge of indicators, community members on the CEAC committee, members of the ECT, community partners based in neighborhood organizations, local NGOs and farmers markets, and participants in the Homegrown Minneapolis effort.

I conducted 36 in-depth interviews. Interviews took place in two main stages. The first, which primarily occupied the summer and fall of 2010, involved interviews with people about the indicator program and the broader sustainability work of the city. The second phase, which occurred mostly in spring and summer of 2011, involved interviews with people primarily involved in Homegrown Minneapolis. Follow-up interviews were conducted in fall and winter of 2011-2012. Interviews were semi-structured. While I was particularly interested to have the respondents provide information on the measurement, programs and procedures of sustainability in the city, I also wanted to give them a chance to tell their own stories and make connections between their work and the sustainability program of the city. I wanted to ask questions that would allow them to explain what they saw as the constraints and possibilities that came from doing work for sustainability. A set of three sample scripts follows. I generated different scripts for different categories of interviewee. Most interviews lasted between thirty and forty-five minutes, though some extended to an hour and beyond when a research subject was very interested and engaged with the interview. All but three

interviews were recorded. Respondents were encouraged to speak freely and were given the opportunity to have any of their statements be anonymous.

Interview subjects were chosen based on two factors. First, they were selected due to their involvement with the sustainability work of the city. In the first phase of interviews, members of City Council, city staff in the Sustainability Office, the Citizens Environmental Advisory Committee, the Environmental Coordinating Team, and lead staff members for specific indicators were interviewed. In the second phase, city staff involved with Homegrown and community partners involved with the Homegrown process were selected. The second criterion was a willingness to participate. While I was able to interview most of the key players involved with the broader sustainability work and with Homegrown Minneapolis, there were a few that were unresponsive to requests for interviews, unwilling to be interviewed, or that I was unable to get in touch with. While this did leave a few important gaps, I was able to get most of the story through discussions with other participants. In the follow-up that will move this work from a dissertation to a book, I plan to fill these gaps by approaching the respondents that were missed in the first round.

Approximately half the interviews were transcribed verbatim. The others were processed through note taking while certain statements were transcribed verbatim. Data analysis was carried out through iterative readings of the written materials produced by the city and the transcripts and notes from the interviews.

Sample Script 1: Lead staff for Indicators

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1) How do you understand the way the Healthy Weight/Teen Pregnancy indicator fits within the sustainability agenda?

2) How has the sustainability initiative facilitated work on Teen Pregnancy/Healthy Weight?

3) Where does the data used for the indicator come from? What sort of socio-economic/spatial breakdowns are available?

4) What sort of programs are in place to make progress towards the achievement of the indicator?

5) How are these programs funded?

6) Who do you work with to make these happen?

7) How effective are these programs?

8) What needs to be done to make them more effective?

Sample Script 2: Homegrown Community Partner

1) Why are farmer's markets important for a food system?

2) What are the city in general and Homegrown Minneapolis in particular doing to facilitate the work of farmers' markets?

3) What impediments are still in place? What are the challenges that farmers' markets continue to face? Are there any ways the city is creating problems, intentionally or not?

4) What sort of tensions emerge around farmers' markets and local agriculture? How has Homegrown mediated these tensions?

5) To follow up, one issue some people have spoken to me about is that between the questions of local food versus food access in the farmers' markets?

6) What is your vision for a local food system?

Sample Script 3: Sustainability Director

Vision

1) You have been instrumental in shaping the City's sustainability initiative. Can you tell me about what your vision is, how the City's initiative took shape, and your role in this?

History

2) Can you tell me about how Minneapolis's slate of indicators was chosen? What was the process that moved the city from the sustainability round table to the selected set of indicators? Why were the selected set of indicators chosen? How did Economy, Environment, Equity become Living Green, Living Healthy, Living as Community?

Process

3) Funding seems to be essential for moving things forward. How is sustainability work at the city funded? Is it something the city plans to put more funding into or is it an item that will constantly struggle to find funding? How much of the sustainability work is funded by the city and how much comes from external sources?

4) How has the city incorporated sustainability into its operation? How does the sustainability initiative link in to the way the city pursues its other agendas?

5) How well have social justice and social equity concerns been included in the sustainability initiative? Does the commitment in practice match the strong commitment in writing? What are the mismatches?

Evaluation

6) Where has the city been most effective in its sustainability work?

7) Where have the biggest challenges been?

8) How can the city move past these challenges?

Conflict

9) What sort of disagreements have there been surrounding the sustainability agenda both in the past and present? For this I am interested in:

        a) Conflicts over different visions of sustainability

        b) Pushbacks against the city's plan to pursue its sustainability agenda

         c)   Pushback against particular parts of the sustainability agenda

10) How has the city worked to mediate these conflicts/disagreements?

Primary Data Sources

<u>Interviews</u>

    Gretchen Musicant August 3, 2010
    Angela Hackell July 21, 2010
    Mark Brinda July 23, 2010
    Sarah Sponheim Sept 7, 2010
    Judith Martin May 25, 2010
    Cam Gordon June 15, 2010
    Jeremy McAdams April 18, 2011
    Russ Henry April 19, 2011 and October 11, 2011
    June Mathiowetz June 17 and 19, 2010, and November 3, 2010
    David Nicholson April 27, 2011
    Allison Meyer May 13, 2011
    Kevin Carroll September 1, 2010
    Cara Letofsky August 20, 2010
    Coral Garner August 27, 2010
    Lara Tiede August 25, 2010
    Walker Smith August 24, 2010
    Ken Meter July 27, 2010
    Sean Gosiewski July 27, 2010
    Ross Abbey June 24, 2010
    Don Samuels June 24, 2010
    Gary Schiff July 13, 2011
    Annette Rondano August 30, 2010
    Jen Blecha January 5, 2012
    Kirsten Sayler July 15, 2011
    Gayle Prest August 3, 2010
    R.T. Rybak May 15, 2011
    Aliyah Ali March 11, 2011
    Robin Garwood March 11, 2011
    Amanda Arnold, March 11, 2011
    Mustafa Sundiata, March 29, 2011
    Amy Arcand April 4, 2011
    Jess Green and Bob Lind April 6, 2011
    Collie Graddock December 15, 2011
    Brendan Slotterback February 10, 2012

Conferences and Meetings

Citizens Environmental Advisory Committee. April 21, 2010, City Hall.
Citizens Environmental Advisory Committee. September 1, 2010, City Hall.
Environmental Coordinating Team. April 20, 2010, City Hall.
Alliance for Sustainability: Local Government Sustainability Workshop. March 12, 2010, Central Lutheran Church.
Alliance for Sustainability – Community Conference. March 13, 2010, Central Lutheran Church
Building a Local Food System One Enterprise at a Time. April 1, 2011, University Research and Outreach Center
Community Garden Spring Resource Fair April 2, 2011, Sabathani Community Center
Urban Agriculture Summit April, 3 2011, Sabathani Community Center
Homegrown Phase 2 Meeting, Decmber 12, 2011, University Reasearch and Outreach Center.
Climate Action Plan Kick-off Meeting, February 1, 2012 Minneapolis Central Library.
Committee of the Whole. April, 31 2011, City Council Chambers.

Minneapolis Documents

City of Minneapolis 2003. Council Resolution 2003R-133 April 4, 2003
City of Minneapolis. 2005. *Living Well Report*
City of Minneapolis 2003. Council Resolution 2005R-251, April 29, 2005
City of Minneapolis 2003. Council Resolution 2005R-252 April 29, 2005
City of Minneapolis. 2008. *Living Well Report*
City of Minneapolis. 2009a. *Living Well Report*
City of Minneapolis. 2009b. *Minneapolis Plan for Sustainable Growth*
City of Minneapolis. 2009c *Minneapolis Carbon Footprint Report: Greenhouse Gas Emissions Inventory.*
City of Minneapolis. 2010. *Living Well Report*
City of Minneapolis. 2011a. *Living Well Report*
City of Minneapolis. 2011b. *Mapping Minneapolis Tree Canopy*. City of Minneapolis
City of Minneapolis. 2012. *Living Well Report*
City of Minneapolis. 2013. *Draft Climate Action Plan*

Other City Documents

Minutes of the Homegrown Minneapolis Subcommittees
City Department Business Plans