LEANER, GREENER DETROIT

A REPORT BY THE AMERICAN INSTITUTE OF ARCHITECTS
SUSTAINABLE DESIGN ASSESSMENT TEAM

DETROIT, MICHIGAN
OCTOBER 30-NOVEMBER 1, 2008

AIA Communities by Design
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The American Institute of Architects Center for Communities by Design

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EXECUTIVE SUMMARY

INTRODUCTION

Detroit, Michigan is world-famous as both a major industrial city, and as a synonym for the American automobile industry. Just as "Detroit" has become synonymous for the industry as a whole, so the city has come to be known as "Motor City", or thanks to Berry Gordy and his musicians, "Motown." With that industry, Detroit prospered. The city's neighborhoods spread outward from a downtown filled with Art Deco skyscrapers, filling in its 139 square mile land area, and spreading to an expanding suburban ring.

Detroit's fortunes turned, however, after World War II. By the 1950's, the movement to the suburbs had already begun, while the riots of 1967 turned that movement into full-fledged flight. Today, Detroit's population is around 800,000, less than half its 1950 population. Over 40 square miles in the city are comprised of vacant land, and between 30,000 and 50,000 buildings sit empty. From a symbol of industrial dynamism, Detroit has become a byword for economic decline and urban decay.

But Detroit is more than the sum of its problems. It has valuable assets on which to build a brighter future:

- The city's anchor institutions, including universities and medical institutions, arts and cultural institutions
- The city's physical assets, including its neighborhoods, its architecture and its location
- A rich reservoir of creativity and innovation, reflected in areas from alternative music to new energy-saving technology
- A strong network of community organizations and civic leadership

Will Detroit's future be defined by its problems, or by its strengths?

THE CHALLENGE FOR DETROIT

Detroit today is a far smaller city in population than it was only a short while ago, but the city's policies and practices have yet to recognize and address that reality. The city's population is still dropping at an accelerating rate. Detroit's population is unlikely to stabilize for many years, and when it does, it may be no more than 500,000-600,000.

The question is not whether Detroit is and will be a far smaller city – in terms of population – than in the past. That is no longer debatable. The question is whether a smaller Detroit can become a stronger, healthier, and more sustainable Detroit. Finding the path to a future smaller and stronger Detroit is the challenge facing the city, its leaders, and its citizens. A number of approaches collectively offer the potential of creating such a smaller, stronger city:

- Take advantage of the city's assets, and build an economic future around them

- Preserve and enhance the city's healthy neighborhoods.
- Rebuild the city's economy around new industries and opportunities
- Build Detroit's human capital
- Reconfigure the use of the city's land to create a greener, more sustainable city.

As the city pursues these goals, its strategies should be organized around three central guiding principles:

- Build an economic development strategy that can create jobs for the city's residents
- Carry out a land reutilization strategy that truly reflects today's realities of population change and housing demand
- Make sustainability the driving theme underlying all of these strategies.

A SUSTAINABLE URBAN FORM FOR DETROIT

Population loss offers the city an opportunity to frame a new direction for its future, based on a new economic and physical reality, by building on its assets. Detroit has a strong and clearly identifiable urban core surrounded by a number of well maintained and relatively stable neighborhoods scattered across the city. Throughout that area there are signs of revitalization, economic energy and urban vitality, coming from a diverse population and strong civic and community leadership.

Detroit has far more land than it needs to accommodate its people. Detroit must begin to look at ways to reconfigure its land uses to create smaller, better functioning, more sustainable and interconnected livable communities. A new compact development pattern based on an urban core and a network of urban villages linked by roads and transitways will not only allow for more efficient and cost effective delivery of public services, but will encourage public transportation, provide opportunities for diverse, mixed income communities, and create long term environmental benefit by reducing vehicle use and fostering transit and land use efficiency.

The ***urban core*** is a high-density, compact mixed use and mixed income area, containing both diverse residential neighborhoods and the city's commercial and institutional heart, in which much of the region's economic vitality is concentrated. Urban villages are areas of a walkable, neighborhood scale and density designed to increase social interaction, and offering a variety of transportation options, reflecting our desire for communities which offer an intimate network of residents and businesses, but with the vibrancy of an urban area. Much of the city's land will be preserved for future economic opportunities including urban agriculture, and for environmentally-sustainable green areas.

ECONOMIC DEVELOPMENT

Detroit is jobs-poor. The city has lost hundreds of thousands of jobs over the past decades, and far fewer of its residents hold jobs, or participate in the labor force, compared to the United States population as a whole. The single most important economic development goal for Detroit should be to fill this "jobs gap." That means not only creating more jobs, but creating the sort of jobs that Detroit's residents can access.

Detroit should aim to create 75,000 (net) new jobs, a difficult but achievable task over the next decade. The SDAT report outlines a three phase job creation strategy. In Phase I, which can be implemented immediately, job creation should focus on taking advantage of existing opportunities that utilize existing assets in Detroit. Phase II will rely on using existing assets to create new opportunities. In Phase III, Detroit will focus on capitalize on transforming new assets into new growth opportunities.

Existing assets in Detroit include its entertainment cluster; large numbers of skilled manufacturing workers looking for new opportunities; and deep experience in global logistics and manufacturing. Phase II will rely on two of Detroit's strongest assets: the innovative capacity of firms in Detroit and its region; and the concentration of large medical, educational, and cultural institutions in midtown Detroit. The presence of large anchor institutions in the midtown area of Detroit is a powerful opportunity to link increased local procurement to local business development and job creation. In Phase III, Detroit will focus on capitalize on transforming new assets into new growth opportunities, including capitalizing on the increased density of the urban core and villages; a growing body of experience in green manufacturing; and the development of urban agriculture as a major economic engine for the city.

LAND RECONFIGURATION

Since Detroit's population will not grow back to historic levels, there is no demand for rebuilding houses across the amount of land that is available. Additionally, it is unlikely that the best future pattern for development in Detroit should be predominately single-family residential neighborhoods. The city's core and its viable neighborhoods in the city should be reconfigured as centers of population and activity, building on their existing density and strong community identity.

By building on existing neighborhoods and the downtown core, and looking at new uses for large vacant land areas, we can envision a new, smarter city appropriately sized and configured for Detroit's future. The new land bank proposed for Detroit can be a powerful tool to lead this process. Such an entity can be a critical element in realizing the city's vision for its future.

Three elements should come together to realize a smarter, leaner and greener city:

- Increasing density
- Land reconfiguration
- Connectivity

Each complements the other elements of this report, such as urban vitality, economic development, urban agriculture, transportation, and green energy.

URBAN AGRICULTURE

Urban agriculture is a use for vacant land that is a potential vehicle for economic development, increasing instead of draining public resources. Urban agriculture can become an important part of Detroit's future economic and environmental landscape, with significant public and private benefits. By converting vacant land to urban agriculture, the city and its residents reap a number of potential benefits:

- Jobs for community residents are created in the cultivation, processing and distribution of food
- Small business opportunities are created in the cultivation, processing and distribution of food
- Detroit's carbon footprint is reduced by increasing consumption of locally produced food
- Existing food processors and distributors in Detroit gain additional business opportunities
- Vacant land is reused for productive purposes.
- Neighborhoods are stabilized and community cohesion enhanced through the productive reuse of formerly vacant land
- Social and health hazards are reduced, including crime and illegal dumping
- Detroit benefits by taking a pioneering role in an emerging industry

Detroit is particularly well suited to become a pioneer in commercial urban agriculture. The city already has hundreds of community gardens, and a growing number of small commercial agricultural operations. The operators of these farms and gardens have organized networks to support and promote their activities. The Eastern Market and the surrounding complimentary businesses give Detroit a food-related infrastructure well beyond that which exists in most cities.

The benefits of urban agriculture can be realized by an initiative designed to lead to large-scale agricultural production in Detroit, using a significant share of the city's vacant land over the next five to ten years. 10,000 acres of land used for urban agriculture – less than half of the city's vacant land – could support hundreds of farms and generate thousands of jobs, while dramatically improving the health of Detroit's residents. Within five years, Detroit should be able to build an urban agriculture system that would substantially exceed any other system in the United States.

We are calling for urban agriculture as a long-term approach to economic development and land utilization in Detroit, not as a short-term or interim program of using sites until more appropriate developments are feasible. Unless that premise is accepted, and all relevant stakeholders are willing to invest in urban agriculture as a long-term or permanent use of a large part of Detroit's land area, the initiative will never take place.

GREEN ENERGY/GREEN ECONOMY

Detroit is well-positioned to take advantage of changes in energy use and the economy. There may be no other area in the United States that has a better location, and a broader and richer pool of individuals with skills in energy and related technologies, as well as a deeper pool of manufacturing capabilities adaptable to green energy technologies.

Green initiatives should focus on creating opportunities for Detroit's residents. Green jobs include a wide range of jobs in manufacturing, construction and installation, and in retrofitting older homes and buildings for greater energy efficiency. They can create opportunities not only for engineers and entrepreneurs, but also for large numbers of people with limited skills or formal education.

Detroit can become a center of renewable energy technology and manufacturing, taking advantage of the outstanding skills and facilities that exist in the area. Manufacturing and installing wind turbines, solar arrays and other renewable energy technologies will be a major growth sector in the economy in the coming years. Michigan already offers a variety of attractive incentives for such firms, which Detroit can use to improve its competitive position. Wind energy is a particularly attractive option for Detroit, in light of the strong electrical generation potential from offshore wind energy in the lakes surrounding the state of Michigan.

Detroit can benefit from the green economy and renewable energy, but time is of the essence. Detroit is not the only city looking at these areas, and its competitive advantages are not so great that the city can afford to wait and see industries flock to its doors. It must move quickly and effectively. If it does not, it is likely to be left behind.

SUSTAINABLE TRANSPORTATION

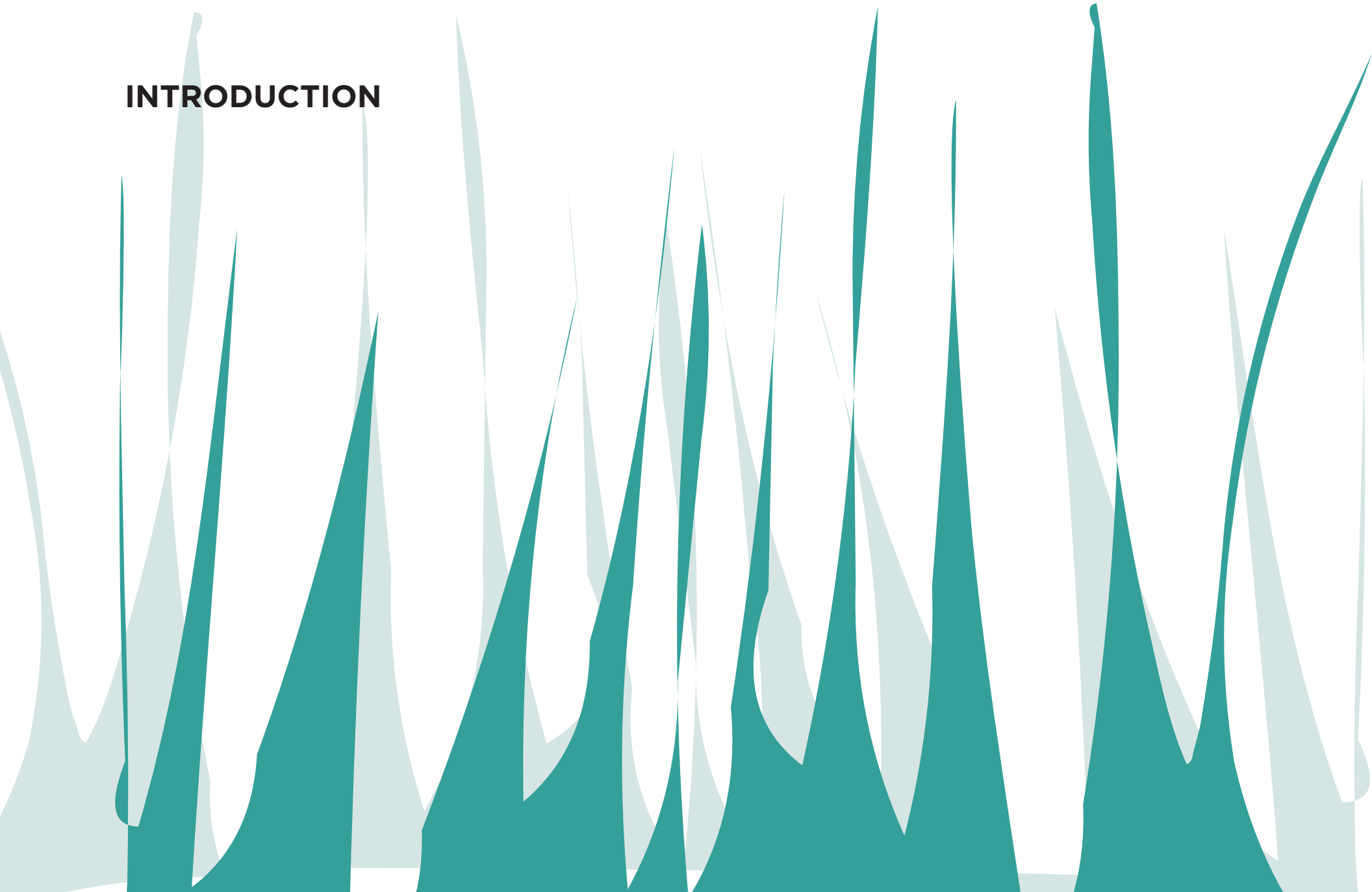
Detroit's existing transportation infrastructure presents significant challenges for planners looking to develop a sustainable transportation network. A central challenge is how to effectively shift away from cars serving single family homes with abundant parking to more sustainable modes of transportation and greater connectivity. This will require improving the attractiveness and accessibility of public transit as well developing and expanding non-motorized transportation modes, linking them all together in a seamless network.

The SDAT team identified the following key elements for a successful sustainable transportation network in Detroit:

- A revitalized public transit system
- Improved connectivity
- A comprehensive walkability plan for all of Detroit's neighborhoods
- Stronger links between transportation and land use
- Use of sustainable transit vehicles in the urban villages
- Strong leadership from transit providers, planners and local industry

As the urban villages emerge in Detroit along with the foundations of a new economy, transportation planning and land use must be integrated into a single strategy.

INTRODUCTION



INTRODUCTION

Early in 2008, a coalition of organizations in Detroit submitted a proposal to the American Institute of Architects (AIA) for a Sustainable Design Assessment Team (SDAT) to assist the town and its citizens in addressing key issues facing the community. The issues were fundamental ones – how to rethink the social, economic and physical infrastructure of a city that had been built on a model of unchecked industrial growth. With that model long obsolete, Detroit has been losing jobs and population for decades. How, the SDAT proposal asked, can such a city "regain a quality of life that is prosperous, equitable and healthy?" Within that framework the SDAT was charged with looking at vacant land, transportation, economic development, food security, green energy and other questions that represented either problems to be tackled or opportunities for future regenerations.

Given the vast size of the city of Detroit, and the number of potential issues that were to be addressed, the local sponsors proposed that the SDAT focus on a part of the city referred to as the SDAT study area: an L-shaped area bracketing downtown Detroit, including the southwestern part of the city, the Woodward Avenue corridor from north of downtown to New Center, and the Eastern Market area.

The AIA agreed to organize the SDAT visit and, after a preliminary visit by a small group in September, the SDAT team members arrived in Detroit on October 30, 2008. For three days, the team members, working closely with local officials, community leaders, technical experts, and citizens,

studied the community and its concerns. During those three days, the team came to understand the issues and used their expertise to frame a wide range of recommendations, which were presented to the community in a public meeting on November 1. While the SDAT looked most closely at the study area shown in Map 1, it became clear that the issues needed to be addressed at a city-wide level, a conclusion which was reflected in the team presentation, and in this report.

This report is a more detailed version of the findings and recommendations that were presented to the community on November 1, 2008. After a brief overview of the SDAT program and process, and a short discussion of the issues Detroit is facing, the report covers:

- Preserving urban vitality
- Economic development
- Land use and land reutilization
- Urban agriculture
- Green energy and economy
- Sustainable transportation

A closing section asks the question “Where do we go from here?” and offers some thoughts on how the community can best move forward to address the range of issues and recommendations covered in the report.

WHAT IS THE SDAT PROGRAM?

The SDAT program is an interdisciplinary community assistance program that focuses on principles of sustainability. Launched in 2005, the program represents an exciting new chapter in the AIA's history of supporting communities with volunteer design expertise.

The SDAT program is modeled on the AIA's R/UDAT (Regional and Urban Design Assistance Team) program. While the R/UDAT program provides communities with specific design solutions, the SDAT program provides broad assessments to help frame future policies or design solutions in the context of sustainability and helps communities plan the first steps of implementation. The SDAT program is based on an understanding of design as a process that:

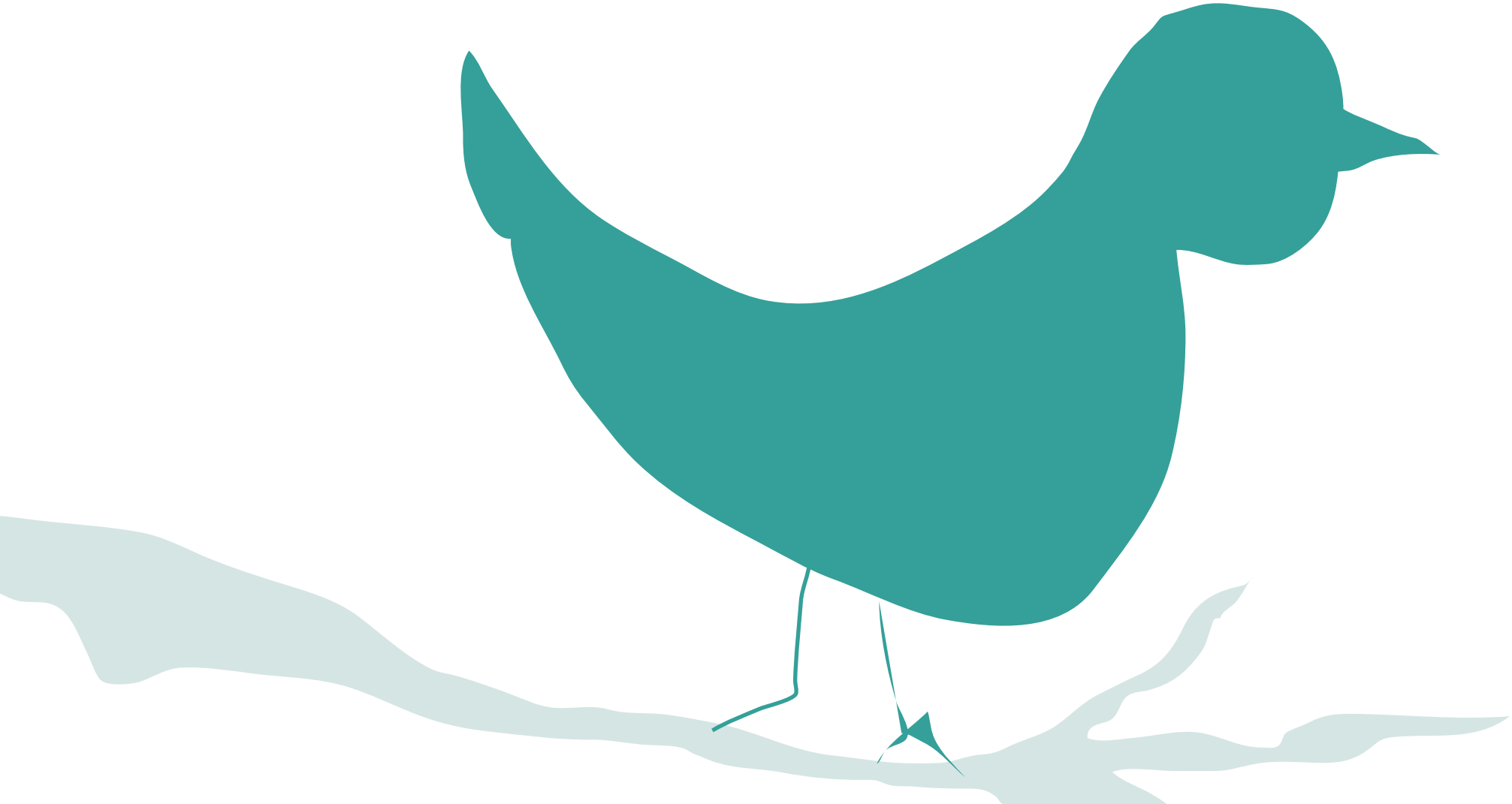
- Is integrative, holistic, and visual
- Is central to achieving a sustainable relationship between humans, the natural environment, and the place
- Gives three-dimensional form to a culture and a place
- Achieves balance between culture, environment, and economic systems.

The SDAT program is grounded in the AIA design assistance team values, which call for a multidisciplinary approach, objectivity of the participating team members, and broad public participation.

The key to SDAT success is diversity and participation; the process involves multiple disciplines and multiple stakeholders. The SDAT process includes not only the expert team but also government agencies and officials, private businesses, schools and students, community members, and other parties as appropriate.

On behalf of the Detroit SDAT team and the American Institute of Architects, it is hoped that this report will be a useful guide to the Detroit community as it charts its future for the coming years and for coming generations.

DETROIT TODAY: CRISIS AND OPPORTUNITY



DETROIT TODAY: CRISIS AND OPPORTUNITY

A BRIEF HISTORY

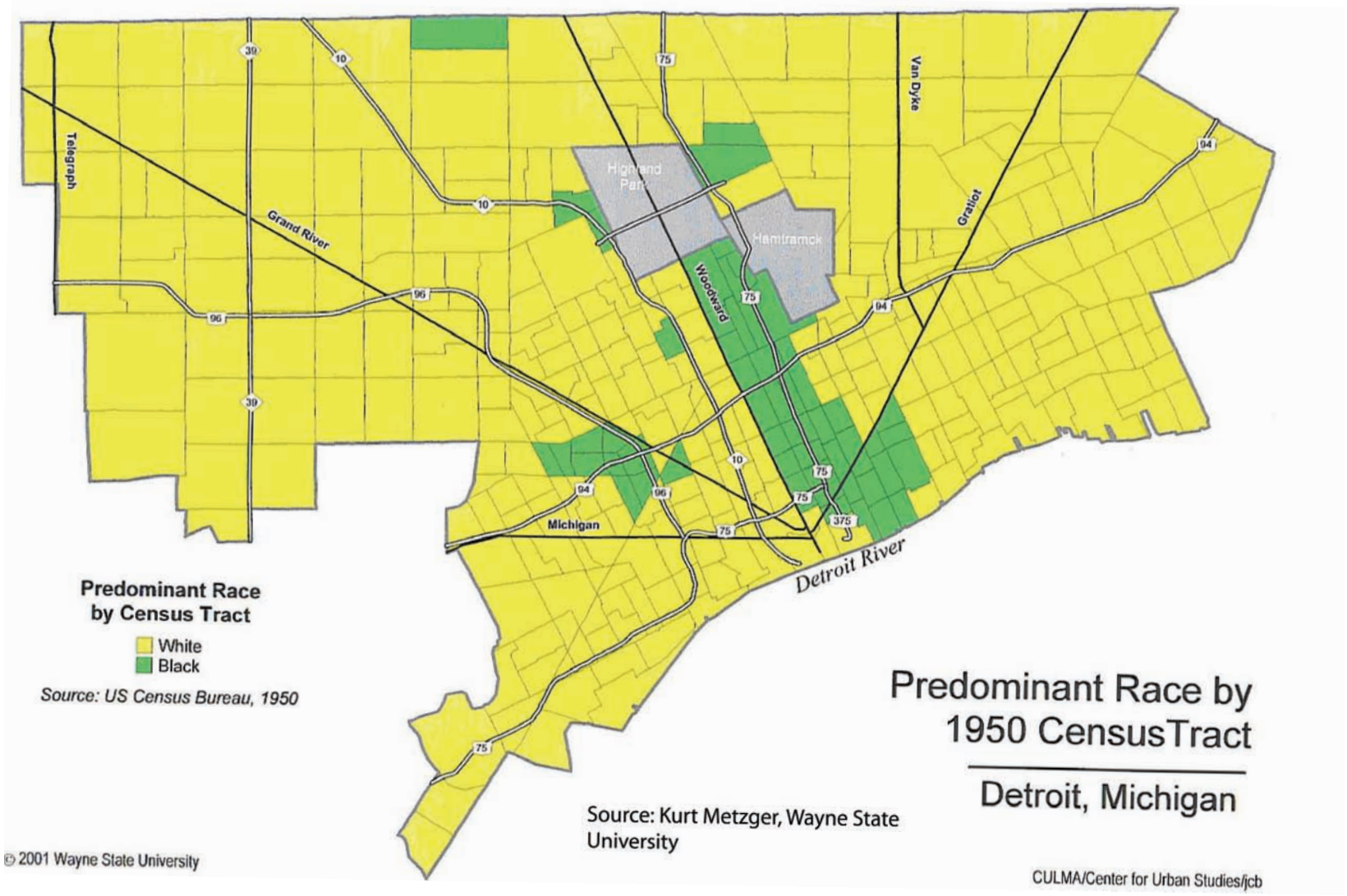
Detroit, Michigan is world-famous as both a major industrial city, and as a synonym for the American automobile industry. Just as "Detroit" has become the shorthand for the industry, so the city has come to be known as "Motor City", or thanks to Berry Gordy and his musicians, "Motown." Originally a French settlement, founded in 1701 by Antoine de la Mothe Cadillac, it passed to the United States in 1796. The city grew slowly but steadily during the 19th century, reaching a population of 285,000 by 1900, making Detroit the 13th largest city in the United States. Detroit's modern growth dates from 1899, when Henry Ford opened his first automobile plant in Highland Park. As plant after plant followed, the city's population skyrocketed, reaching 1,568,000 by 1930. It was now America's fourth largest city, exceeded only by New York, Chicago and Philadelphia. The city's population peaked in 1950, at 1,850,000.

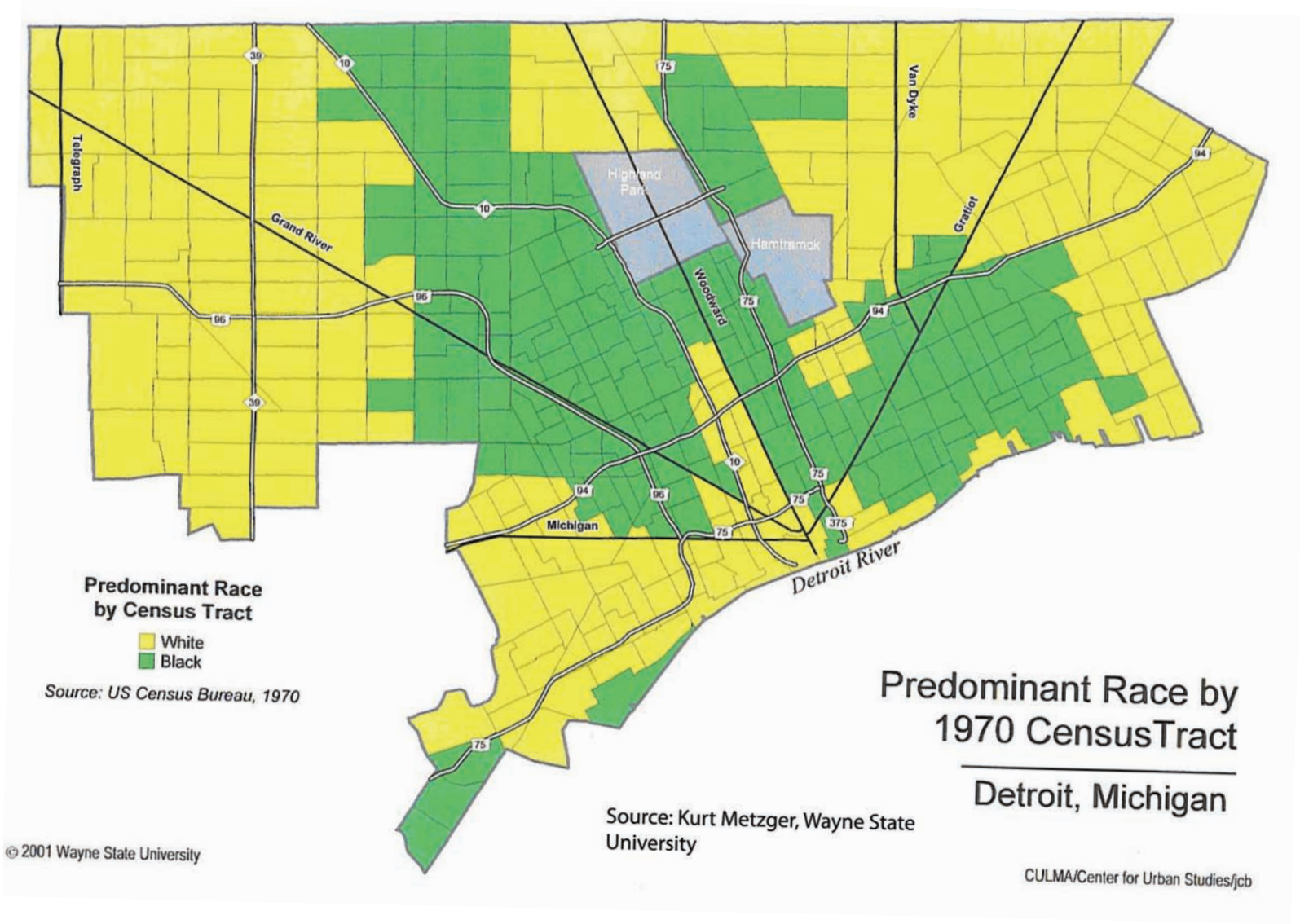
Along with the automobile industry, Detroit prospered. The city's neighborhoods spread outward from a downtown filled with Art Deco skyscrapers, filling in its 139 square mile land area, spreading outside of the city to an expanding suburban ring. The city's dynamic economy, reflected in areas like New Center, developed by General Motors in the 1920's, and neighborhoods such as Rosedale Park and Boston-Edison, along with powerful institutions like the Detroit Institute of Arts, made Detroit one of the United States' great cities.

Detroit's fortunes turned, however, after the end of World War II. By the 1950's, the movement of more affluent families to the suburbs had already begun, while the riots of 1967 turned that movement into full-fledged "white flight." From 1950 to 2000, Detroit's population plummeted, as factory after factory closed and its economic condition steadily worsened. As white-collar employment moved to the suburbs along with large parts of the city's middle class, office buildings, retail corridors in downtown and elsewhere were neglected and abandoned. The remaining population was poorer, and more highly dependent on public services that the city could no longer afford to provide.

The modern history of Detroit cannot be separated from the issue of race. From its earliest days as an industrial city, Detroit was also a highly segregated community. Although over 300,000 African Americans lived in Detroit in 1950, they were highly concentrated, largely living in an area then known as Black Bottom, immediately to the north of downtown. By 1970, the African American population had more than doubled to 660,000, and had moved into much of the city's central and eastern areas (Fig.1)

FIG. 1 DISTRIBUTION OF POPULATION BY RACE IN DETROIT 1950 AND 1970




Predominant Race
by Census Tract
White
Black
Source: US Census Bureau, 1970
Predominant Race by
1970 CensusTract
Detroit, Michigan
Source: Kurt Metzger, Wayne State
University
CULMA/Center for Urban Studies/jcb
© 2001 Wayne State University
Telegraph
Grand River
Van Dyke
Gratiot
Woodward
Michigan
Detroit River
Highland Park
Hamtramck
39
10
75
94
96
375

Today, over 80% of Detroit's population is African American, and the only part of the city that is not predominately African American is the largely Latino southwestern triangle. Ironically, Detroit's African-American population today is 666,000, almost exactly the same as it was in 1970.

DETROIT TODAY

Today, Detroit's estimated population is 808,000, substantially less than half of its 1950 population. Its employment base has also declined, going from 735,000 jobs in 1970 to only 345,000 today, a rate of decline even faster than its population decline. This has created a depopulated city in which over 40 square miles are vacant land, and where between 30,000 and 50,000 of the remaining buildings are sitting vacant. From a symbol of industrial might and economic dynamism, the city of Detroit has become a byword for economic decline and urban decay.

The city's difficulties have become more manifest in the last two years, as the collapse of the national housing bubble, followed by the larger economic crisis that has engulfed the nation and the world, have hit Detroit with particular intensity. While Detroit appeared to be experiencing a revival of sorts in the early 2000's, the collapse of the bubble revealed that it was largely illusory, largely driven by speculation and subprime lending (Fig.2).

Since 2006, the Detroit housing market has collapsed. In December 2008, according to one source, the median price of houses sold in the city was $7,500. As the automobile industry's difficulties grow, not even the most optimistic analyst expects the city and region to avoid massive job losses over the coming years. The city government is facing a $300 million operating deficit for the coming year.

At the same time, Detroit should be seen as nothing more than the sum of its problems. Detroit has significant and valuable assets on which it can build a brighter future:

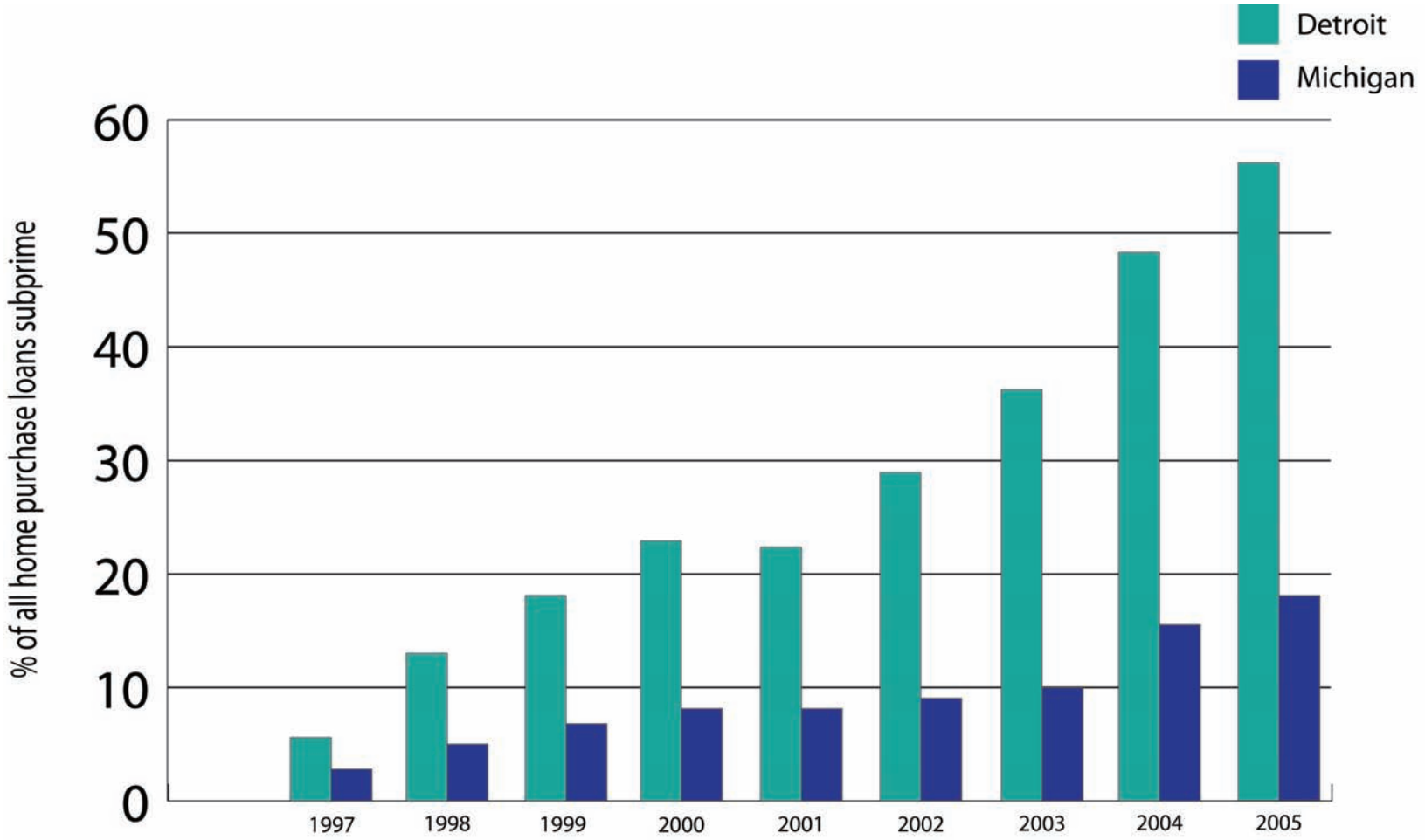
- The city's anchor institutions, including universities like Wayne State and Mercy, the Detroit Medical Center and other medical institutions, the Detroit Institute of Arts and other cultural institutions
- The city's physical assets, including still-vibrant neighborhoods, a rich heritage of architecture, its location along the Detroit River, and its proximity to Canada and to a large region rich in assets and resources
- A rich reservoir of creativity and innovation, which is reflected today in areas from alternative music to new energy-saving technology
- A strong network of community organizations and civic leadership

Will Detroit's future be defined more by its problems, or by its strengths?

THE CHALLENGE FOR DETROIT

The most fundamental fact about Detroit today is that it is a far smaller city in population than it was only a short while ago, and is continuing to shrink while the city's policies and practices have yet to recognize and address that reality. Rather than the city's population leveling off, it is dropping at

FIG. 2: GROWTH IN SUBPRIME LENDING IN DETROIT 1997-2005



an accelerating rate. The rate of population decline between 2000 and 2007 has been the fastest in Detroit's history, approached only by the decline between 1970 and 1980. Detroit's population is unlikely to stabilize for many years, and when it does, the city's population is likely to be no more than 500,000 to 600,000. A return to historic population levels in the next generation is all but inconceivable.

The question is not whether Detroit is and will be a far smaller city – in terms of population – than in the past. That is no longer debatable. The question is whether a smaller Detroit can become a stronger, healthier, more sustainable Detroit. Finding the path to a future Detroit that will be both smaller and stronger is the challenge facing the city, its leaders, and its citizens.

There are a number of approaches that can be followed which collectively offer the potential of creating such a smaller, stronger city:

- Take advantage of the city's assets, and build an economic future around them
- Preserve and enhance the city's healthy neighborhoods.
- Rebuild the city's economy around new industries and opportunities
- Build Detroit's human capital
- Reconfigure the use of the city's land to create a greener, more sustainable city.

In pursuing those approaches, the policies and strategies that emerge from them need to be organized around three central guiding principles:

- Plan and implement an economic development strategy capable of creating jobs for the people of the city
- Plan and implement a land reutilization strategy that truly reflects today's realities of population change and housing demand
- Make sustainability the driving theme underlying all of these strategies.

Although the recommendations in the following sections cover a wide variety of areas, they are consistently grounded in these three principles.

The term sustainability is central to our recommendations, and calls for some explanation. While this term is often used in a narrowly environmental sense, we think of it in broader terms, as the intersection of environmental sustainability, economic growth and opportunity, and social equity and community (Fig.3). A sustainable community is one in which those three elements are in balance – where values of stewardship of our land and natural resources are prized, where economic opportunities are created in ways that are environmentally responsible and socially just, and where viable, healthy communities are created that are shared by all people, of all economic levels and racial or ethnic backgrounds.

FIG. 3: WHAT DOES SUSTAINABILITY MEAN?

The balance of this report is devoted to six separate sections, each addressing a particular issue area. The first three of these sections deal with the broad issues of urban vitality, economic development and land use; they are followed by more specific discussions of three critical strategy areas – urban agriculture, building a green economy, and fostering a sustainable transportation network. These sections are followed by a closing section, in which we discuss the next steps for the city and its people.

A NEW PARADIGM FOR URBAN VITALITY

A NEW PARADIGM FOR URBAN VITALITY

Detroit has been growing smaller for some time. As it has grown smaller, it has seen a diminished employment base and increased poverty, which in turn has contributed to disinvestment and a loss of urban vitality. The decline of the auto industry and the current economic crisis have accelerated the pattern of abandonment and urban decay. As a city shrinks, more land is left than is needed to accommodate the people, while abandoned and boarded up homes and buildings lead to a decline in the quality of life for the city residents who remain behind. As the cycle of decline continues, it becomes harder for the city to sustain itself either economically and socially. The cost of providing adequate services with diminished revenues becomes an unsolvable challenge, while the remaining population may lack the economic means to create a viable community. All of these trends work against Detroit's ability to thrive as a vital urban community.

For all the problems caused by population loss, it also presents the city's residents with an opportunity to frame a new paradigm for the city's future, based on a new economic and physical reality that builds on its assets. Those assets are many and varied. Even some of the consequences of population loss such as the abundance of land and reusable structures can be assets in the development of a new paradigm. The central theme of the new paradigm is the reassertion of the city's urban vitality and its continued ability to function as an urban community with the diversity, variety and richness of experience that that implies.

Detroit has a strong and clearly identifiable urban core surrounded by a number of enclaves of well-maintained and relatively stable neighborhoods scattered throughout the city's land area. The city contains a deeply-rooted technological knowledge base derived from its automobile industry, as well as a rich history of music, art and architecture. The city's entrepreneurial spirit is reflected in its urban agriculture movement, while the strong institutional presence of several major universities and a major medical center provide for a unique opportunity of mutually beneficial and collaborative town-gown partnerships in community building. Community Development Corporations (CDC) have provided strong and effective leadership in many of the city's neighborhoods. Above all, the city has a cultural and ethnic diversity that needs to be fully celebrated. Throughout the SDAT study area there are visible signs of revitalization, renewed economic energy and urban vitality coming from the entrepreneurial spirit of a diverse population with strong civic and community leadership. It is clear that there is a commitment by the community to create a new paradigm for a sustainable city.

The SDAT team focused on creating a working framework for this new paradigm for a socially, economically and environmentally sustainable city. The residents, property owners, civic leaders and the business owners who are the community's stakeholders, and who ultimately must own any future plan, will have to come together to turn this framework into a reality. Developing strategies for any long-term sustainable future vision will need to incorporate several key elements:

- Develop a sustainable urban form
- Create a collaborative model for community building
- Build a new asset-based economy
- Build the city's human and intellectual capital
- Forge stronger regional connections

DEVELOP A SUSTAINABLE URBAN FORM

With a population of less than half its peak population, Detroit has far more land than it needs to accommodate its people. Much of the city is characterized by scattered clusters of houses or isolated buildings, surrounded by vacant land, a pattern that does not further a decent quality of life for the city's residents, and hampers the city's ability to provide an adequate level of services and infrastructure to a smaller population. In order to foster urban vitality, Detroit must begin to look at ways to reconfigure its land uses to create smaller, better functioning, more sustainable and interconnected livable communities.

Development patterns that encourage continued sprawl and the maintenance of scattered, sparsely populated areas will only aggravate the city's problems, further straining public resources. A smaller, compact development pattern emphasizing a high quality of planning and urban design will not only allow for more efficient and cost effective delivery of public services, but will also encourage public transportation by creating adequate densities to support transit, provide opportunities for mixed income communities by offering a variety of housing choices, and create long-term environmental benefit by reducing vehicle use and fostering increased transit and land use efficiencies.

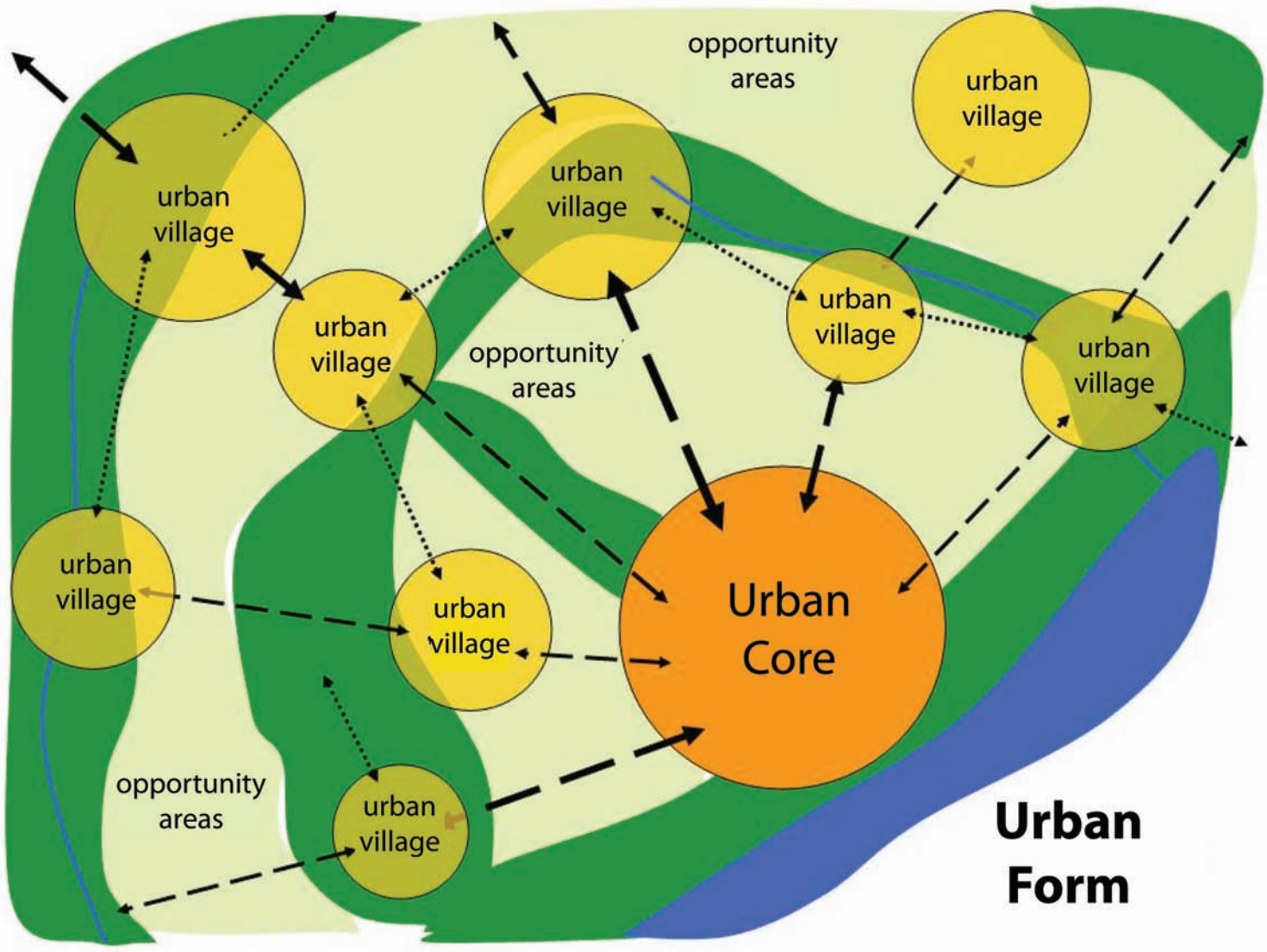
The compact development approach will permit much of the city's land area to be banked for economic opportunities including urban agriculture and other emerging industries, as well as for greening and other community and environmental benefits. Green belts can be created around compact neighborhoods, linking neighborhoods and the urban core with linear parks, recreational trails and other opportunities for leisure activities. These green belts will prevent urban sprawl, allowing the urban areas to be developed in a more efficient and sustainable urban form.

The recommended urban form consists of an urban core, which includes downtown Detroit and contiguous areas such as Mexicantown, Midtown and New Center, linked to a network of urban villages through public transit, greenways, blueways and bikeways, with future opportunity areas created through land banking distributed around the urban villages (Fig.4).

The urban core is a high-density, compact, walkable, mixed-use and mixed-income area, including neighborhoods that provide a diverse range of housing opportunities and choices. Particular emphasis is placed on the quality of the public realm by creating civic spaces that have a strong sense of place designed to bring people together and foster social interaction. The core is also a center of commerce and major institutions, concentrating a large part of the region's economic vitality.

While the term "urban village" may sound like a recent buzzword, the concept is not new. Traditional neighborhoods

FIG. 4: SCHEMATIC REPRESENTATION OF FUTURE URBAN FORM CONCEPT FOR DETROIT



around the world were based on a largely self-sustaining model, in which people lived, worked, shopped and found entertainment in a single defined area. While the traditional model cannot be recreated intact, the principle can be re-engineered to fit the modern American city.

An urban village is a community which, although existing at a lower density than the urban core, is developed at a walkable neighborhood scale. In addition, density is designed to increase social interaction and encourage a variety of transportation options, including walking and biking. The words "urban" and "village" are often seen as contradictory. They reflect our desire to live in a community which offers an intimate social network of residents and businesses, but which also has the vibrancy and vitality of an urban area, allowing for at least a modicum of anonymity. Applying the urban village model to Detroit can strengthen and encourage growth in the city's existing viable communities by limiting sprawl and redirecting public and private investment into those areas.

CREATE A COLLABORATIVE MODEL FOR COMMUNITY BUILDING

Creating urban vitality is not just about places, but about building community. Community building is about people; allowing young and old to voice and share their hopes, dreams and aspirations. A community-building process must be inclusive, creating a culture of openness and mutual respect through honest dialogue, getting everyone at the table to help make decisions, develop leadership and encourage civic engagement. The discourse needs to reflect the wide range of values and social identity that exist within the community.

City and regional leaders, CDCs, community activists, representatives from local universities, church leaders, business leaders, residents of all ages and all walks of life must be included and come together to make a lasting and workable collaboration to participate through a variety of structured, interactive and facilitated workshops, focus groups, town hall meetings and charrettes. Collaborative teams should be developed, with the capacity to articulate a vision and fulfill the technical, leadership and political needs of the community. "Champions" must be identified to lead the cause and keep it alive.

There is no one model that works everywhere. Every community must build their own model that is inclusive, engages stakeholders and, in the final analysis, furthers a responsible decision-making process.

BUILD A NEW ASSET-BASED ECONOMY

Jobs are a critical component of community building and urban vitality. While Detroit has lost much of its traditional economic base, it is in a strong position to create a new and sustainable economic foundation based on its assets and natural resources. As we will discuss in the following sections, the city's technological skills can be retooled to develop green energy industries, while large amounts of vacant land offer an opportunity to create economic opportunities around urban agriculture that is linked to the already flourishing Eastern Market area, where the ancillary services such as processing and distribution are already in place. This is discussed further in the section on urban agriculture.

By joining forces, the city's educational and medical institutions can create major business opportunities by creating an economy of scale for procurement and other services, while these institutions' collaborative efforts can position the city as a center for major scientific research and development. Detroit is also well-positioned to capture its musical history and its affinity for arts to become a major arts and cultural destination. These opportunities are discussed further in the following section on economic development and job creation.

BUILD THE CITY'S HUMAN AND INTELLECTUAL CAPITAL

Ultimately, an educated and well-trained workforce is needed to create a healthy and sustainable economy. Education and training are critical ingredients in building a community's creative class and improving the quality of a region's human and intellectual capital. In Detroit, however, this issue takes on an added dimension because of the large part of the city's population that have limited education, job skills, and labor force attachment. Without a concerted strategy to focus education and skill-building efforts on the city's lower-income, lower-skilled population, any future economic growth and revitalization efforts will pass them by, further expanding the already wide gap between the city's and the region's haves and have-nots.

FORGE STRONGER REGIONAL CONNECTIONS

Building a community not only requires collaborations between local stakeholders, but also requires a culture of cooperation that is regional as well as local. Public agencies are often constrained and even paralyzed by their inability to transcend their jurisdictional authority in addressing the community's needs. As resources become scarce, local agencies, rather than cooperating more, tend to draw back even further from regional collaborations. Therefore they are unable to appreciate that the demand for services can only be met if city, county and state agencies coordinate their efforts and pool their resources to reduce duplication, confusion and waste.

In the Detroit area, these issues take on particular resonance. Despite what some suburbanites may believe, Detroit and its region are inextricably interwoven with one another. Not only do thousands of people from across the region work or follow leisure pursuits in Detroit, but over half of Detroit's employed residents work outside of the city, providing the workforce for much of the region's economic base. However, for many reasons, including political rivalries, economic pressures and historic racial strains, regional cooperation in the Detroit area has lagged behind many other metropolitan areas, with negative consequences for the vitality of the entire region.

It is clear that as the new sustainable economies of the 21st century grow, and as the global economy begins to emerge from its current crisis, strong urban centers will be a critical element in each region's competitive position. The entire Southeast Michigan region has a major stake in building a strong, vital Detroit.

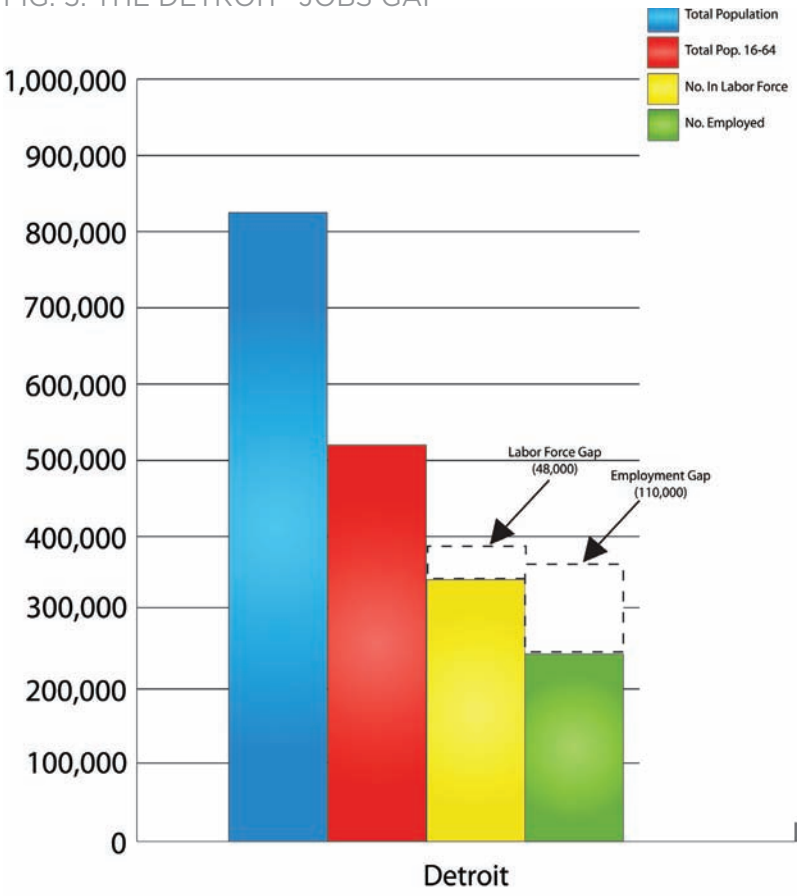
ECONOMIC DEVELOPMENT

ECONOMIC DEVELOPMENT

IT'S ABOUT JOBS

Detroit is jobs-poor. Not only has the city lost hundreds of thousands of jobs over the past decades, but far fewer of its residents hold jobs, or participate in the labor force, compared to the United States population as a whole. The jobs gap is massive – if Detroit's residents held jobs at the average national rate, the city would have 110,000 more employed residents, an increase of over 40% (Fig. 5).

FIG. 5: THE DETROIT "JOBS GAP"



The single most important economic development goal for Detroit should be to fill this "jobs gap" by increasing the number of jobs available to its residents. That means not only creating more jobs, but creating the sort of jobs that Detroit's residents, many of whom have limited formal education or specialized skills, can access. This goal forms not only the central theme of this section of the SDAT report, but a key element in our recommendations with respect to urban agriculture and the green economy.

A JOBS STRATEGY FOR DETROIT

A smaller Detroit would still need considerable job creation in order to provide employment opportunities for all of its residents. A Detroit with a population of 600,000 would need to create 75,000 new (net) jobs to achieve national labor force and employment rates. This is difficult but we believe it is achievable over the decade. Some of the opportunities for job growth will only emerge if the city addresses its land use realities, and makes major changes to the ways in which it thinks about how it uses its land resources. These changes will open opportunities for land-intensive activities like agriculture, as well as create higher population densities elsewhere that make new investments in retail and services feasible.

As shown in Figure 6, the job creation strategy is proposed to proceed in three phases.

Phase I can be implemented immediately. Job creation should focus on taking advantage of existing opportunities that utilize existing assets in Detroit. Phase II will rely on using existing assets to create new opportunities. In Phase III, Detroit will focus on capitalizing on transforming new assets into new growth opportunities. As shown in Fig. 7, these three phases have the potential to create 75,000 new jobs in the city over the course of the next decade.

Existing assets in Detroit include its entertainment cluster, large numbers of skilled manufacturing workers looking for new opportunities, and deep experience in global logistics and manufacturing. The entertainment cluster in Detroit is very strong, in large part because of the casinos. Over the next decade, the entertainment cluster is expected to increase employment by 27%, making it one of the fastest-growing clusters in the United States. In the short term, the

FIG. 6: A TEN-YEAR ECONOMIC DEVELOPMENT PLAN FOR DETROIT

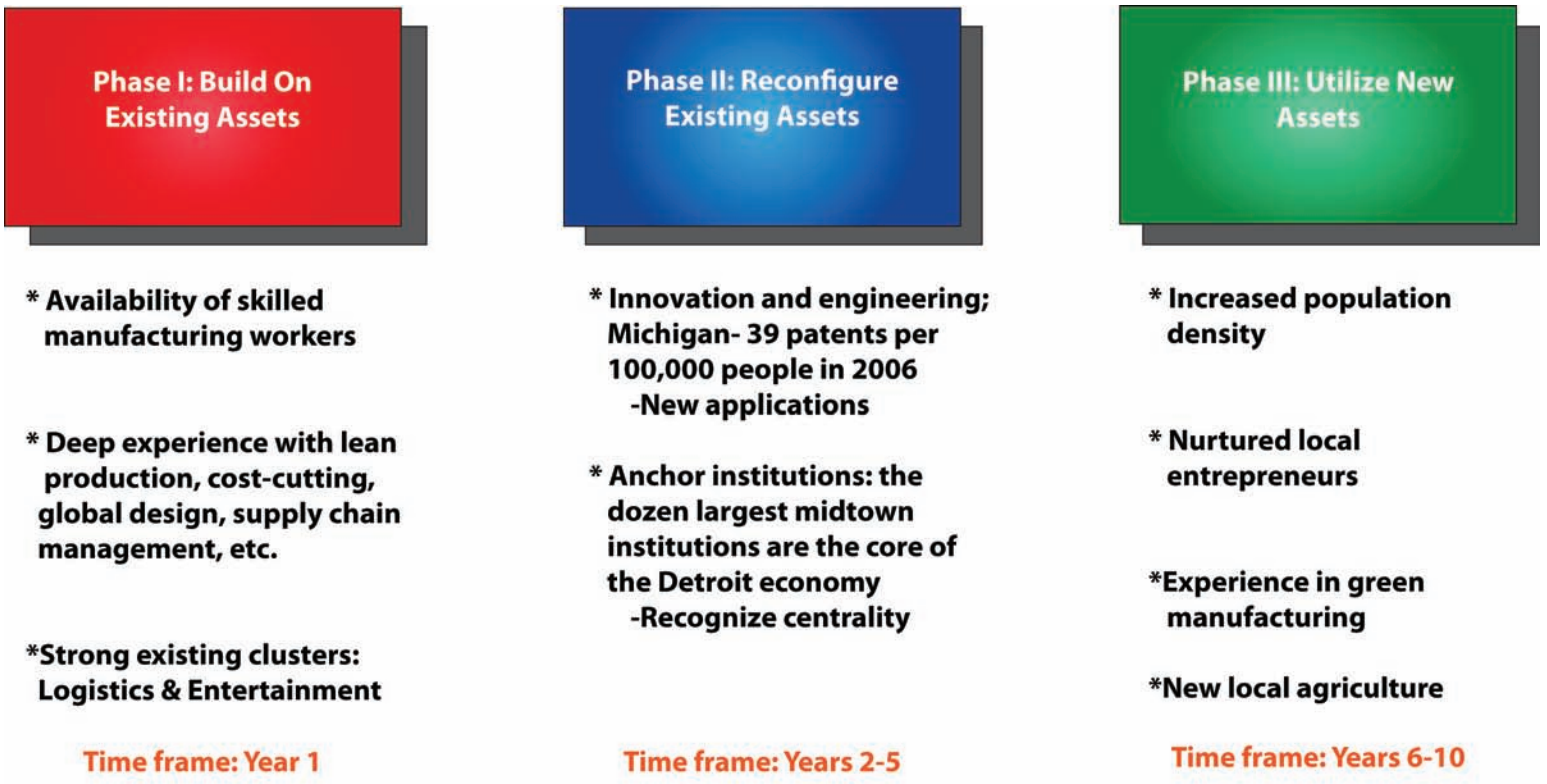
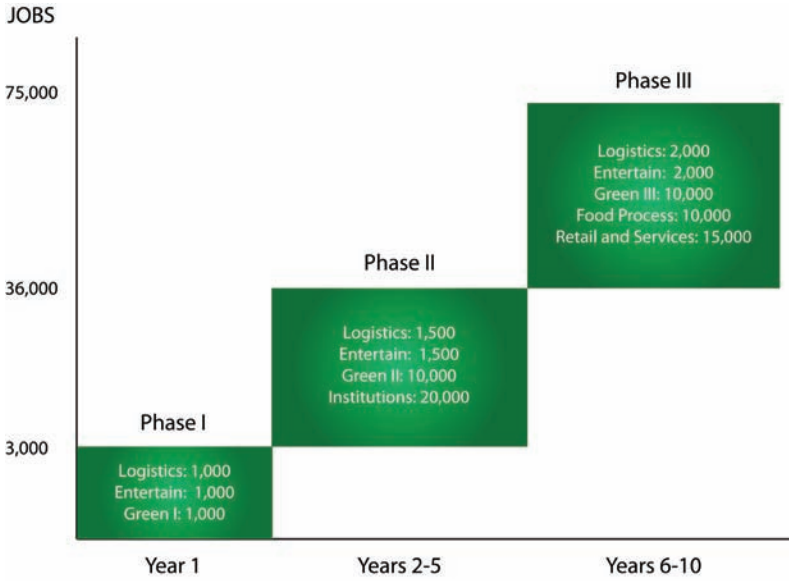


FIG. 7: A RECIPE FOR CREATING 75,000 NEW JOBS IN DETROIT OVER THE NEXT DECADE



city can and should develop a plan to increase employment around support activities to its three casinos.

Another valuable asset can be found in the manufacturing skills of the labor force. Between 2001 and 2007, Wayne County lost 100,000 jobs in manufacturing, leaving many skilled workers either unemployed or employed in non-manufacturing (and probably lower-wage) sectors. A potential fit for many workers whose skills are not being fully utilized could be green manufacturing. To position itself to be a leader in green manufacturing, Detroit needs to act soon. Opportunities in green industries, like emerging industries before them, will likely be dominated by "first-movers," those companies and regions that invest and produce earlier than their potential competitors. This subject is described in more detail in a later section of this report.

Detroit also has strengths in logistics and transportation. Many cities that are now suffering from declines in manufacturing activity went through earlier periods of global competition, cost-cutting, and relentless pressure on margins. In Detroit, these pressures began decades ago and forced firms all along the automotive value chain to innovate and cut costs constantly. As a result, Detroit firms that have survived are likely among the leanest in the country. The CEO of one Detroit logistics firm that serves the auto industry reported that he can show prospective clients from outside automotives how to cut costs by one-third just by adopting best practices from the auto industry. The city should consider convening a group of leading firms in logistics and transportation to spearhead efforts that make Detroit even more of a national player in this cluster by increasing cooperation and innovation among local firms.

In Phase II, the city will use existing assets to create new opportunities. This phase will rely on two of Detroit's strongest assets: the innovative capacity of firms in Detroit and its region; and the concentration of large medical, educational, and cultural institutions in midtown Detroit. The city's strengths in innovation and engineering are often over-looked because of the decline of the auto industry. This assessment ignores the contribution that labor-saving technology has played in employment loss in Detroit as well as

the radical technological breakthroughs led by Detroit firms, including the development of OnStar by GM and Ford's strong position in environmentally-friendly products and processes.

These strengths are found across the state: in 2006, Michigan produced 39 patents per 100,000 people, which ranked it 13th among U.S. states. To fully capitalize on the innovation and engineering strengths of the city and region, Detroit needs to create stronger ties with other centers of engineering excellence, especially those at the University of Michigan. Despite the proximity to Ann Arbor—and shared capabilities and interest in engineering, innovation, and manufacturing—there are too few formal ties between Detroit firms and the university or its students. Local observers suggest that this is due to the industrial structure in Detroit, which historically has been dominated by large firms that rarely utilized formal university-based internship or other programs. Although Detroit has universities,,such as Wayne State, with a strong regional presence, the city must foster stronger ties with Michigan's nationally-recognized science and engineering programs in order to maintain and grow their strengths in engineering and innovation. The city should consider developing programs to recruit recent science and technology grads interested in developing businesses, by offering assistance such as subsidized building/office space, health care, and even modest stipends.

Another critical asset is the presence of many large anchor institutions in the midtown area of Detroit. Midtown itself is home to twelve education, health, and cultural institutions, each of which has at least 300 employees. As a group, these institutions--Detroit Institute of Art, Detroit Public Library, Detroit Symphony Orchestra, The Children's Center, Detroit Medical Center, Hospice of Michigan, Karmanos Cancer Institute, Detroit Mercy Dental School, Veterans Administration Hospital, College for Creative Studies, Wayne State University, and Henry Ford Health System—are the major economic force in the study area. Collectively, these institutions employ about 50,000 people and spend over $5 billion dollars annually. Although some of these institutions have employees outside the study area—for example, Detroit Public Library has branches and employees throughout the city; and Henry Ford Health System includes hospitals across Southeast Michigan – we estimate that 70 to 80% of the collective employment and spending of these institutions may take place within the SDAT study area.

The economic and social power of these institutions cannot be over-estimated. The 50,000 employees are well more than what GM employs across the entire Detroit metropolitan region, and more than the sum of Microsoft's Seattle employment plus Google's U.S. employment. (Imagine if it were announced that Google was moving all

of its U.S. operations to one neighborhood in Detroit.) The total population associated with the households of these employees is on the order of 125,000 persons, which is more people that live in Flint or Lansing, which had a roughly 115,000 population in each city in 2007.

Three steps are required to successfully leverage these institutions to re-build Detroit: awareness, acceptance, and coordinated action.

1. RECOGNITION BY THE ANCHOR INSTITUTIONS THAT THEIR HEALTH DEPENDS ON A HEALTHY LOCAL ECONOMY:

Anchors need to recognize that both their biggest threat and biggest opportunity lies in the economic trajectory of their neighborhood and city. This awareness drove the University of Pennsylvania, USC, and other universities to increase their local spending by multiples in short periods of time, and is the impetus behind John Hopkins' leadership in transforming East Baltimore. This awareness could be encouraged by inviting leaders from anchor institutions that have contributed to local revitalization efforts, to discuss the impetus/incentives as well as the positive impact that local revitalization has had on their own activities and growth.

2. RECOGNITION OF THE VITAL REDEVELOPMENT ROLE THE ANCHORS CAN PLAY AND ACCEPTANCE OF THIS RESPONSIBILITY:

The contribution of anchor institutions to local economies is often under-estimated, even by anchors themselves. Detroit's anchor institutions need to recognize their own ability to improve the local economy and, more importantly, the economic contribution that the anchors could play in creating a new Detroit. While the city could commission a study outlining the impact of the anchors, it would probably be sufficient to present key representatives from the anchors with the basic data on the employment and potential spending impact of the group of identified anchors.

3. COORDINATED ACTION:

Anchors should develop and agree to a joint plan for using their procurement spending to drive the growth and development of businesses in Detroit.

The critical component of this plan must be a strategy for linking increased local procurement to local business development. The challenge and opportunity of an anchor-lead revitalization of midtown Detroit is that a significant increase in the proportion of goods and services procured locally would require that existing study area businesses expand and new businesses be created. Ideally, the anchors would pool resources to form a (shared) single business development group that coordinates identification of local firms and entrepreneurs, provides business development expertise and outreach to local businesses, and monitors quality, cost, and timeliness of purchased goods and services.

In other words, to maximize their impact on the redevelopment of the neighborhood, the anchors must link their procurement power with technical assistance and business incubation-- three things that are usually thought of as separate and distinct. The procurement offices at Wayne State and Henry Ford would be natural fits to lead such an effort. Their tremendous success in outreach to Women and Minority Business Enterprise Firms

FOCUS ON ANCHOR INSTITUTIONS

Fortunately, the potential for anchor institutions to revitalize urban neighborhoods has received considerable attention over the past decade, and sets of best practices have been identified. For anchor institutions looking to increase the scope and impact of their procurement practices on neighborhood growth and stability, ICIC and CEOs for Cities recommend the following practices for leaders of the anchor institutions

- Emphasize the strategic importance and commitment to the program
- Invest in understanding the local business base and its match with college or university needs
- Focus on relationship and capacity building
- Leverage other college and university activities
- Make purchasing small-business friendly

(W/MBE) means they are capable of using their clout to serve important economic and social goals for the city and region. In general, a coordinated approach would allow the institutions as a group to leverage existing expertise and capabilities that already reside within the institutions.

Success in using anchors to create local demand and drive business development can be augmented in two ways. First, the original group of anchors can be expanded to incorporate similar institutions that are not usually counted among as anchors, including the Detroit Public Schools, U.S. Postal Service, and the State of Michigan, all of which have their primary administrative buildings in midtown Detroit and collectively employ almost 28,000 in the city. Second, successful cooperative practices can be applied to maximize, as well, the potential contributions of anchor institutions as employers, innovators, cultural leaders and ambassadors for midtown Detroit.

In Phase III, Detroit will focus on transforming new assets into new growth opportunities. As shown in Figures 6 and 7, this part of the job creation plan is scheduled to begin in year six, which provides the city with five years to develop new economic assets. New assets will include:

- **Increased population density by developing the urban core and urban villages and moving much of the city's land into green and agricultural space.**
  In terms of consumer retail and services markets, Detroit currently has the worst of both worlds: urban challenges and suburban population densities. This discourages national retailers from investing in the city and makes it more difficult for indigenous consumer-based businesses to operate profitably. Detroit's consumer business sector is currently greatly under-served. Changes in land use and residential patterns to increase density spur investments to meet local demand, which will enable Detroit to add 15,000 retail and service sector jobs. The anchor institutions could also play a role here by providing incentives for their employees to live in Detroit and help generate a critical mass that will draw retailers.
- **Experience in green manufacturing, which will allow Detroit to continually grow the number of green jobs in its economy.**
  Wayne County currently accounts for about 0.7% of U.S. manufacturing. Even if it were only able to secure this

proportion of the green sector, its share of the potential five million new green jobs would be 35,000. Based on its economic and physical assets, however, Detroit should target a much greater share of green markets.

- **A commercially-oriented urban agriculture initiatives that will lead to significant growth in local produce and farm products.**
  This will create jobs in agriculture, as well as local food processing and distribution, enhanced by creating a Detroit food culture and local brand identity. This is described in more detail in a later section of the SDAT report.
- **A local entrepreneurial class that will create small- and medium-sized businesses across a wide spectrum of industries.**
  The large-firm economy and culture that served Detroit so well for so long has left in its wake an under-developed local entrepreneurial culture. The city should support efforts to grow a local class of entrepreneurs who can lead Detroit's next renaissance. Efforts could include development of a high school curriculum focused on entrepreneurship or even creation of a charter high school for entrepreneurship, as well as active support and technical assistance to emerging entrepreneurs.

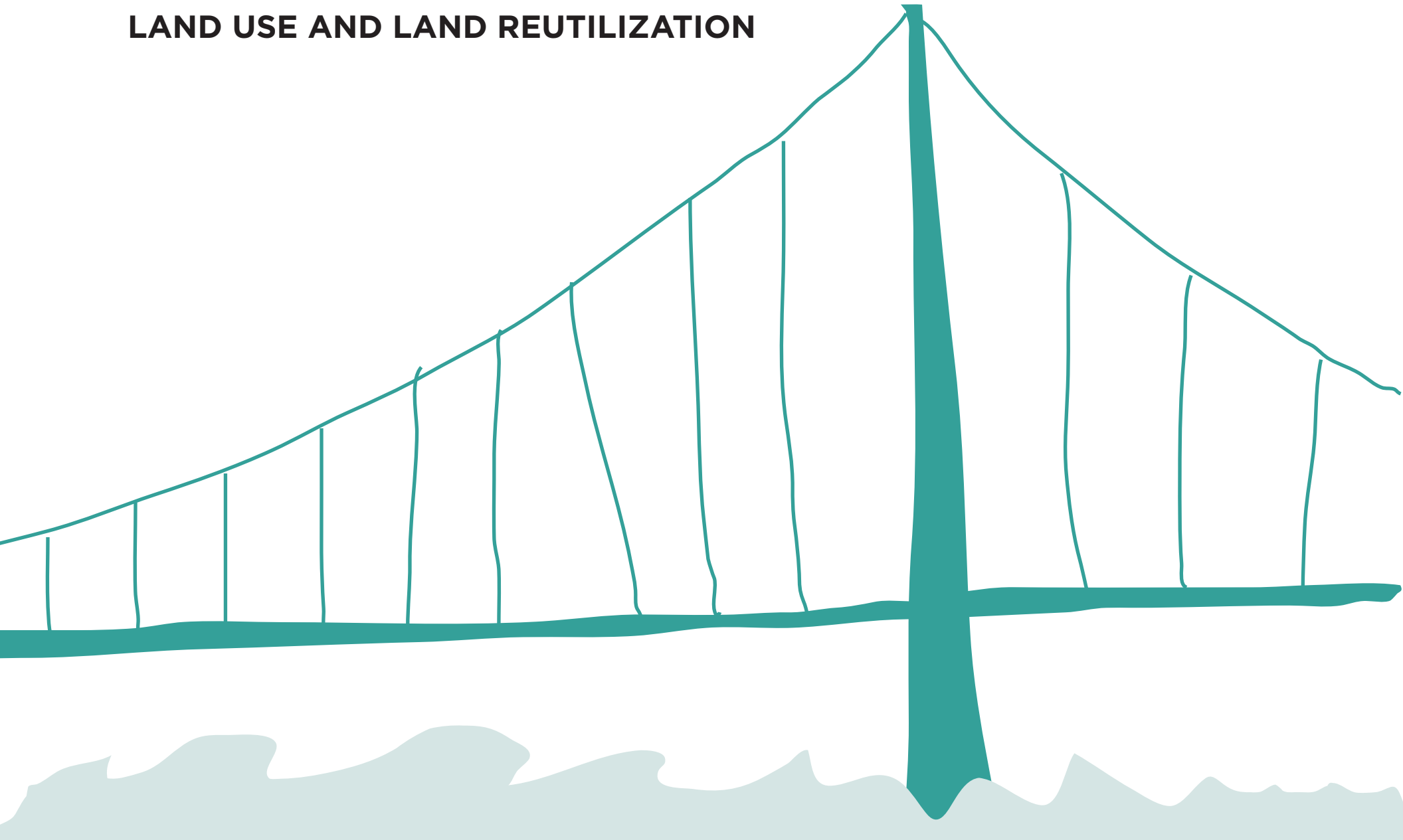
PRINCIPLES FOR SUCCESSFUL JOB CREATION IN DETROIT

We believe that Detroit can create 75,000 new jobs over the next decade. If Detroit can retain the jobs they already have, adding this number of jobs would dramatically reduce Detroit's current unemployment issues, and significantly increase the disposable income available to the city's residents, spurring additional growth in retail and services as well as additional value in the housing market. To succeed, however, Detroit's residents and public and private leadership will need to agree to agree on a few basic principles.

The first principle is to start with density. Detroit should aim for achieving higher density in areas most appropriate for residential development and economic activity, and lower density elsewhere. Detroit's residential and economic activities can be accommodated in a much smaller space. This would help eliminate the city's sprawl and pockets of blight. Just as important, it would create new assets that can be leveraged into economic opportunities, including higher population densities and valuable green space.

The second principle is to be flexible but decisive. Flexibility is critical for adjusting changing background conditions, acting quickly to capitalize on new opportunities, and responding appropriately to the vast uncertainties that currently characterize the U.S. economy. However, it is even more important that flexibility be embedded in a larger context of decisiveness. Economic development of complex urban areas is not characterized by perfect plans. In fact, it would not be possible to recognize the perfect plan even if it existed. The temptation in difficult situations is to currently re-evaluate strategies and options. This can be destructive in urban development, were initiatives can take months or years to bear fruit, and where success is usually the outcome of a process rather than a strategy. Detroit 's economic future will be better served by sticking with a good plan, rather than jumping from great plan to great plan.

LAND USE AND LAND REUTILIZATION

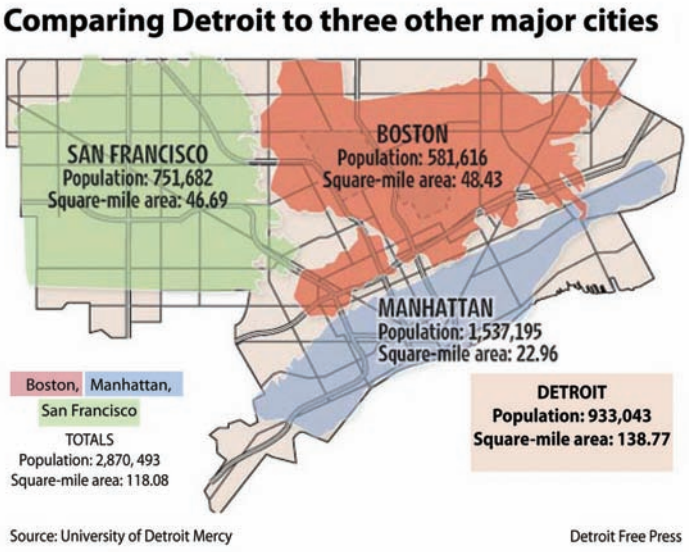


LAND USE AND LAND REUTILIZATION

EXISTING LAND USE PATTERNS

The current land use configuration in Detroit provides vital information to understanding the city from a physical, cultural, and economic standpoint. The land use pattern reflects the lack of diversity in housing types, a holdover from Henry Ford's 'Five Dollar Work Day,' which allowed many workers to own their own home and live a life of relative abundance that was uncommon in many urban areas at the time. While other American cities had higher-density multi-family housing and a mix of uses and densities, the preponderance of single-family residential neighborhoods in Detroit led to a spread land-use pattern covering the city's 139 square miles (Fig. 8).

FIG. 8: SPREAD LAND USE IN DETROIT



This auto-dominated single family pattern lead to the distribution of services such as police, fire, and other essential infrastructure across a low density environment. Neighborhoods were served through wide roadways, with large areas of parking and single land use – not mixed use or mixed income - configurations. This singular urban structure worked for a time. The significant reduction of population in ensuing years, however, has further diluted densities, spreading less people over large land areas, with widely-spread infrastructure systems which are costly to maintain. The city's infrastructure was adequate to serve a larger population, but as population declined both the social and physical infrastructure of Detroit have deteriorated.

This deterioration is also seen in the underutilized parks and open spaces throughout the community. The park system has been degraded. Neighborhood and pocket parks, particularly in low-density areas, are underutilized. Larger open spaces are difficult to manage, and underutilized due to lack of connectivity and amenities. There are still successful areas of parkland and open space serving neighborhoods and regional demands, which can become models for maintenance and use for proposed new open space areas.

The major land use identity in the city is not its parks and open spaces, but the vast amounts of vacant land or partially vacant lands. By a conservative estimate, there are over 40 square miles of vacant land within the city limits. This valuable resource can become a driver for a vision rare in modern cities – that of infusing and re-inhabiting the open spaces to provide a mix of growth areas, concentrated

density, and usable open spaces. In our study, we identified that a city of 600,000 to 650,000 people (the highest likely level at which Detroit's population would stabilize) would need to occupy between 50 and 60 square miles, leaving over 80 square miles (51,200 acres) of land awaiting reuse.

While this area could, in theory, be rebuilt in the same fashion as historical development patterns, there are compelling reasons to avoid repeating the same pattern. Above all, since the population will not grow back to historic levels, there is no demand for rebuilding houses across the amount of land that is available. Second, it is unlikely that the best future pattern for development in Detroit should be predominately single-family residential neighborhoods. Thus, existing viable neighborhoods in the city should be reconfigured to be centers of population, building on their existing density and strong community identity.

This is particularly true of the strong core in the SDAT study area. The downtown is still physically intact and has attracted considerable new housing during the past decade. Mixed-use areas adjacent to downtown, such as Midtown, New Center, Corktown, and Mexicantown contain vital clusters of non-industrial employment, cultural activity, and residential zones diverse with respect to both housing type and economic mix.

Other land use issues include the pockets of brownfields and other pollution hot spots, the remains of former industrial development throughout the City. These often have high levels of contamination, possibly associated with a high cancer incidence locally. Potential opportunities exist for remediation of these brownfields along with redevelopment, new industrial uses, and urban open space development.

Another potential issue stems from the fact that Detroit still has a combined sanitary and storm sewer system, and the problems associated with Combined Sewer Overflows (CSOs). While the system works well under most normal circumstances the combination of development and increased impervious areas from rooftops and roadways often over-tax these systems. When large rain events happen, raw sewage runs directly into waterways.

The historic residential and industrial and land use development has created a mosaic of developed areas, vacant lands, and remnant brownfields that can be a strong base for future revitalization. While these existing patterns are a challenge, they are also an opportunity. By seeing them in that light, we can begin to frame strategies that build on current assets and use new methods to create a new, more vital land use pattern. By building on the existing vibrant neighborhoods and downtown core areas, and looking at a range of uses of large areas of vacant lands, we can envision a new and smarter city that is appropriately sized and configured for Detroit's future.

IMAGINING A SMARTER CITY

As mentioned in the previous section, Detroit's stabilized population size will need approximately 50 square miles of land area, leaving a surplus opportunity area of over 80 square miles. These areas can be repurposed for a variety

of uses, which can be intelligently planned and create a worldwide model for the re-configuration of shrinking cities. Taking the existing land use patterns and looking at them through a lens of opportunity allows for a smart city that balances economic opportunity, the environment, and social equity.

A powerful tool that may be available to lead this process is the new land bank that is
proposed to come on line in Detroit in the next few months. The land bank can serve to assemble the city's vacant land inventory, to target those areas where it will be most appropriate and efficient for development, and hold other areas for other uses thereby treating the city's land as a public trust. Under the laws of Michigan, a land bank authority can not only foster better utilization of the city's land, it can do so in ways that are fiscally beneficial to the city government as well. Having such an entity in place is critical to the realization of the city's vision for the future.

Here we will address three elements that need to come together to realize a smarter, leaner and greener city practicing effective land use and land reutilization:

- Increasing density
- Land reconfiguration
- Connectivity

Each works within as well as complements the other factors included in this report, such as preservation of urban vitality, economic development, urban agriculture, transportation, and green energy.

INCREASING DENSITY

It may seem strange to call for higher densities in a city that has lost so much of its population, but density can be employed as a powerful and focused tool for making the urban land use pattern coherent and complementary to other urban systems. As previously mentioned, our discussions led to a schematic representation of a future Detroit (see Fig. 4), a model of a potential urban form resembling a spoke and wheel pattern extending from a strong downtown core. This generalized framework has the potential to create a strong basis for future decision-making, while also being flexible to the particulars of place and community identity.

The major benefit of this pattern is the ability to focus services into an urban core and a
network of urban villages linked by transit. This supports existing vital neighborhoods, providing a framework to increase density in areas that already have services and a viable urban form through re-imagining development patterns – shifting the pattern from single-family development to a wider range of options for existing and future residents. By providing a mix of housing types and price ranges, and accommodating a mix of incomes and social groups, new land use patterns can contribute to a stronger community.

Smart code ideas should be integrated into existing codes, by using green building rating systems (such as LEED) along with giving owners and developers financial incentives to create green development. This can become a framework for architecture, community development, sustainable stormwater development, and transportation that works

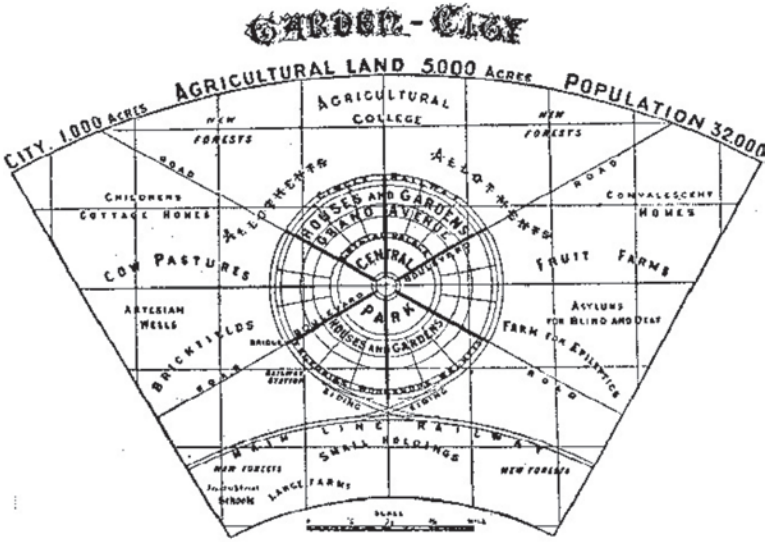
together to establish a positive development pattern, while increasing community health and easing demands on existing infrastructure. The positive benefits of these green building systems in terms of marketability, increased profitability, and residual community benefits can be gleaned from hundreds of case studies throughout the country, and applied to green building strategies in Detroit.

Increasing and focusing density into the urban core and urban villages offers many positive land use benefits. Sensitive infill of strong, compatible building patterns in viable neighborhoods can lead to secondary benefits for public services, including parks, transportation, and other infrastructure. Increasing density can make it possible to develop and maintain active community parks, programming them to become vital anchors for neighborhoods.

The consolidation of infrastructure investment in areas of development should also address rebuilding with green infrastructure strategies that lessen impact on existing systems. Green infrastructure involves utilizing the natural environment in land use planning. Instead of continuing to maintain and install traditional grey infrastructure elements, multi-functional alternatives for infrastructure investment should be investigated.

For instance, the traditional method of stormwater management involves the installation of site drainage systems, connected to a system of pipes and other components to allow water to flow towards eventual outfalls. The hierarchy of these systems means that as stormwater accumulates,

FIG. 9: EBENEZER HOWARD'S GARDEN CITY MODEL



the capacity of systems must increase exponentially – which leads to an exponential increase in cost as well. By infusing infrastructure with natural systems, and tying these principles to development, more decentralized and adaptable systems can be created, starting with managing the stormwater impact of a particular development on the site itself. A range of potential strategies, such as green roofs, stormwater planters, swales, and ponds, can reduce the need for new infrastructure expansion, while also reducing initial construction costs and providing community benefits such as air purification, urban habitat, and visual amenities. Similar green options exist for other infrastructure systems, including green building, transportation (complete streets), and green neighborhood development.

This urban pattern of nodes, corridors and villages, woven together with productive open space and tied together with mass transit, is not a new idea. While not specifically derived from the Garden City Model, it is similar in spirit to Ebenezer Howard's 1898 ideal city model (Fig. 9).. While utopian in nature, his model shares many similar themes with our proposed land use pattern, by fostering planned, self-contained communities surrounded by greenbelts, containing carefully balanced areas of residences, industry, and agriculture.

LAND RECONFIGURATION

The second part of becoming a smarter city is to acknowledge the reality of population loss and begin to look for positive ways of reconfiguring Detroit. This should start with discouraging the current pattern of scattered development, stemming the tide of low-density building and limiting sprawl throughout under-populated areas of low demand. Recognizing depopulation allows us to identify places to concentrate development, provide contiguous areas of green space, and focus services and infrastructure as required. This is not a simple solution, but a necessary and powerful opportunity to focus development where it should be.

The land bank model allows a mechanism for repurposing existing areas for a wide range of uses, including natural areas, urban agriculture, green spaces and urban reserves. These natural areas can provide land uses buffers, separating residential villages from industrial lands and transportation corridors, while keeping them accessible. The team identified four key community strategies of land reconfiguration:

1. Clean contaminated sites with bioremediation techniques: Using a variety of established techniques to heal lands that have been damaged through industrial processes allows us to begin to prepare soils for future uses. Using technological methods (bio-remediation), plants (phyto-remediation), and even fungi (myco-remediation), the City could implement a large-scale, long-term model remediation program that can reclaim land and provide jobs. This is also a step preliminary to use of land for urban agriculture, preparing lands for productive uses by removing contamination such as oil, toxins, and heavy metals that are detrimental to growing food and fiber.

2. Use urban forests to improve air quality and stormwater management: Existing tracts of vacant land provide some ecosystem benefits, but these could be vastly expanded through systematic green infrastructure planting to provide specific benefits to both individual sites and the community as a whole. Expanding the urban forest canopy improves air quality by removing particulates, increasing transpiration, and reducing runoff due to greater stormwater interception. The detrimental aspects of climate change can be reduced by cooling urban heat islands and large-scale carbon sequestration in soils and trees. Finally, the inclusion of nature in the city can create feelings of well-being, security and community pride, reducing stress and helping to build community.

3. Use open space for green infrastructure: Rather than use open space only for parkland, habitat, and agriculture, public and private lands can be used to provide the city with a green infrastructure. These can both reduce costs and provide a variety of community benefits. As previously discussed, the public benefits of green infrastructure vary but can include neighborhood stormwater facilities, green streets, and ecosystem services such as pollution reduction and reduction of blight. Public ownership of open spaces can be an opportunity for using vacant or underdeveloped areas to reduce the cost of private development and allow for affordable development and green development incentives. A combination of innovative public-private partnerships is possible regarding green infrastructure investment as well.

4. Create opportunities for urban agriculture: Detroit has a major opportunity to grow and process food locally at a commercial scale that can provide a major potential green industry for the community. This idea builds on the variety of programs that are currently working on a smaller scale, as well as the larger food-industry focused around the Eastern Market. Large parcels of land are potentially available, not merely distributed small parcels and distributed vacant lots. This is discussed in greater detail in the urban agriculture section of this report.

CONNECTIVITY

The final element of the land use picture is closely linked to the section on transportation, showing again how no individual focus area can be treated in isolation. Land use drives the potential success or failure of transportation options by providing the urban forms and development densities that accommodate certain types of multi-modal transportation types. Detroit, the Motor City, reflects a legacy of historical development based on auto-dominated single-family neighborhoods, which made efficient mass-transit and other transportation alternatives less than viable, and contributed to the cycle of disinvestment that the city has experienced and reduced options. Without discounting this history, future planning can allow for smart connections between a wider diversity of transit and movement systems, linking the core, individual urban villages and opportunity areas as defined in the land use model.

The urban villages will provide opportunities for mobility hubs in the cores, where light rail, streetcar, bus, bikeway, pedestrian, and automobile networks can come together. Multi-functional transportation networks can include the use of vegetated greenways and blueways, knitting together neighborhoods, and connecting those neighborhoods to the community's natural amenities and resources, such as urban streams, woodlands and views. Planning can encourage pedestrian and other forms of transportation, such as biking, by reducing barriers to movement and creating wayfinding systems that reflect the individual character and heritage of particular neighborhoods.

Some other specific connectivity strategies include:

1. **Use the riverfront and increase water access.** The greatest natural resource in the city of Detroit is the Detroit River, which spans the length of the city, providing a visual amenity and connecting many neighborhoods and industrial areas. Belle Isle Park is an amazing resource and amenity. The Riverwalk development has started to provide waterfront access and connectivity, and should be continued for the length of the riverfront. Natural amenities can be utilized to connect the riverfront to the core and the urban villages. By creating a network of connected green fingers (including former hidden streams) that are in turn connected to the core and villages, land use and transit systems will reinforce connections to the city's natural fabric. If waterways are not currently visible, they can be daylighted (opened up) or made meaningful through art, ecological restoration, and abstractions of natural systems.

2. **Identify and eliminate social and physical barriers between villages and neighborhoods.** Potential barriers exist to limit the connectivity of community spaces, which need to be addressed, beginning with the physical connections between neighborhoods and districts. Walkability needs to be improved and wayfinding must be provided for non-motorized connections, particularly where there are highways or other barriers that make getting around without a car difficult. The recent development of the DeQuindre Cut, connecting the riverfront to the Eastern Market, with a future loop planned around through the Inner City Greenway, is an excellent example.

Connectivity is social as well as physical. Inclusivity and integration should be encouraged by holding events to draw people into the communities and urban villages that exist, or will be developed, around the city. By tapping Detroit's rich cultural and ethnic heritage, these community identities can take on many forms, based around food identity, arts, music or ethnic heritage.. These facets can then be used to build community identity, link communities and increase urban vitality throughout the city.

3. **Connect to larger areas through eco-tourism and cultural tourism.** The goal of connectivity should not be thought of as merely one of fostering local connections, but should be expanded to the Southeast Michigan region, the rest of the country, and the world. Major urban areas have a long history of using their unique cultural and natural resources to foster tourism as a means for economic development. The 'flattening' of the global community allows the city of Detroit to exploit the identity as a locus of music, culture, automotive innovation, and industrial production to promote the area as a destination beyond the region. The development of the new green economy will provide additional opportunities for Detroit to become an eco-tourism destination as well.

URBAN AGRICULTURE

URBAN AGRICULTURE

THE FUTURE OF DETROIT'S VACANT LAND

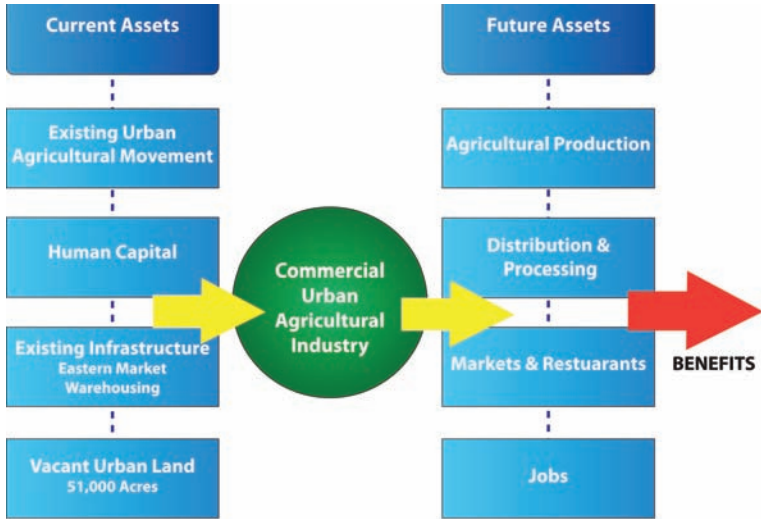
As we have already noted, the central feature of Detroit's 139 square mile land mass is the sheer amount of vacant land conservatively estimated at over 40 square miles. This is not virgin land, but land that has been created over the past fifty years. In 1950, Detroit contained 522,000 housing units. By 2007, Detroit contained 369,000 housing units, of which 1 out of 4 was empty, and less than 238,000 had been built before 1950. Between 1950 and 2007 a total of 284,000 housing units were lost through fires, collapse, and demolition. In some cases these were demolished for reuse, but more often housing units were lost as a result of the building's deterioration and abandonment. During the same years, the same fate was being meted out to thousands of industrial, commercial and institutional buildings.

Neither conventional redevelopment nor affordable housing represents a feasible or appropriate response to the city's vacant land inventory. With population still shrinking, there is little or no market demand for homes or commercial space outside of a few relatively strong market areas like downtown or Midtown. In a city which has 92,000 vacant units and where houses sell for less than used cars, building new homes or apartments simply adds to the number of boarded, vacant houses elsewhere. As the city plans for its future, it needs to recognize these realities and focus on alternative uses and strategies for its vast, and still growing, vacant land inventory.

New ways of reusing this vacant land mass lie at the heart of building a more sustainable, greener future for Detroit. There are a variety of green uses that need to be considered, including greenways and natural corridors, new parks and expansion of existing parkland, buffers, woodlands, and the like. Many of these uses are constrained by the difficulty of raising money for improvements, and even more, for ongoing maintenance. While in some cases land can be added to existing parks, or non-profit organizations may agree to take responsibility for park maintenance, this must be recognized as a severe limiting factor.

One use for vacant land that does not represent a drain on public resources and is, indeed, a potential vehicle for economic development, is urban agriculture. As will be

FIG. 10: POTENTIAL BENEFITS OF URBAN AGRICULTURE IN DETROIT



described below, SDAT team members believe that urban agriculture has the potential to become an important part of the economic and environmental landscape of Detroit in the years to come, with significant benefits to both private individuals and the public.

THE BENEFITS OF URBAN AGRICULTURE

Urban agriculture can be defined as the process of cultivating, processing and distributing food at a commercial scale within an urban area. As such, it is distinguished from community gardening, where the focus is on individuals growing food for themselves and their neighbors, rather than for commercial purposes. By commercial, we mean food that is distributed in whole or large part through the money economy, and that can provide economic benefits to those who cultivate, process or distribute it.

By converting vacant land to urban agriculture, the city and its residents reap a number of potential benefits:

- Jobs for community residents are created in the cultivation, processing and distribution of food
- Small business opportunities are created in the cultivation, processing and distribution of food
- Detroit's carbon footprint is reduced by increasing consumption of locally produced food
- Existing food processors and distributors in Detroit gain additional business opportunities.
- Vacant land is reused for productive purposes.
- Neighborhoods are stabilized and community cohesion enhanced through the productive reuse of formerly vacant land
- With increased neighborhood resident presence and activity, social and health hazards are reduced, including crime and illegal dumping.
- Detroit benefits by taking a pioneering role in an emerging industry

Detroit is particularly well suited to become a pioneer in urban agriculture at a commercial scale. The city already has hundreds of community gardens, and a growing number of small commercial agricultural operations. The operators of these farms and gardens have formed organized networks to support and promote their activities.

The Eastern Market gives Detroit a food-related infrastructure well beyond that which exists in most cities. The Eastern Market area not only contains the market itself, which continues to draw over 45,000 shoppers on the typical weekend, but a cluster of some 150 food vendors, processors, distributors, restaurants and ancillary businesses. The market itself is now capably run by the non-profit Eastern Market Corporation, which has its Eastern Market 360º plan.well under way. This plan

will dramatically upgrade and expand the market facilities and create a 2.5 acre nearby market garden, The Market represents a critical partner already in place for Detroit's future urban agriculture industry.

The benefits of urban agriculture can best be realized by an initiative designed to lead to large-scale agricultural production in Detroit that is capable of utilizing a significant share of the city's vacant land over the next five to ten years. With over 10,000 acres of land conservatively available for urban agriculture, which represents less than half of the total vacant land in the city today, this could support hundreds of farms and generate thousands of jobs while dramatically improving the health of Detroit's residents.

PHASE ONE: LAYING THE GROUNDWORK

While supporting individual urban agriculture efforts, the city and its partners need to begin by building the infrastructure for a large-scale initiative. Phase I represents a series of preparatory steps that can be initiated in the first year and carried out during the first two years of the urban agriculture initiative:

- Increase support for existing community gardens and urban agriculture in the city, including focused support for increased productivity and expansion of Detroit's existing commercially- or community-oriented urban farms
- Design and implement community-based programs to improve food literacy and increase food access among Detroit residents
- Initiate elementary school garden programs in all Detroit public schools, and encourage similar programs in private, parochial and charter schools. The city should provide land adjacent to school properties for this purpose.
- Initiate planning for a Food System Technical Training Center that will operate at the high school, community college and adult levels, as discussed further below.
- Adopt amendments to the city zoning ordinance and other ordinances to encourage urban agriculture. The amendments should ensure that there are no obstacles placed in the way of efficient and responsible farming practices, while creating 'tiered' standards for what farming activities are appropriate depending on the density of the surrounding area.
- Create an inventory of land potentially suitable for urban agriculture, including both land currently in public ownership as well as land likely to become available over the coming years.
- In partnership with existing urban farmers, the Eastern Market, university-based partners and others, develop a model for economically-viable production, processing and distribution of the products of Detroit's urban agriculture system.

PHASE II: BUILDING A COMMERCIALLY-VIABLE URBAN AGRICULTURE SYSTEM

Once the groundwork has been laid, the city should plan during years two and three of the initiative to ramp up their efforts with the goal of building a commercially-viable agricultural sector in Detroit, including:

- Establishing an efficient, user-friendly process to move vacant land into farming, either by sale or long-term lease
- Developing a branding and promotional campaign for locally-grown agricultural products
- In partnership with university extension programs and others, establish a support system for community-based farming activities
- Establish the Food System Technical Training Center, a facility (or facilities) designed to provide vocational and technical training for high school age and college age youth in urban sustainable food production, food distribution, food processing and culinary skills, which would award both high school diplomas and Associate degrees. It would also provide non-credit courses for adults. The Center should be designed to train some 500 youth per year, providing a trained labor force for the city's urban agriculture industry, as well as supporting ancillary distribution, processing and restaurant activities.

While we are not suggesting any specific targets with respect to number of acres or number of jobs created, we believe that within five years Detroit would be able to build an urban agriculture system that would substantially exceed, in both respects, any other system in place in the United States.

The nature of the urban agricultural activities could vary widely. Some examples might include:

- Intensive agriculture – vegetables and fruits – on parcels of 1 to 10 acres
- 'Movable' agriculture on sites that might be reserved for future development, utilizing relocatable greenhouses
- Generating bio-diesel fuel by growing sunflowers on vacant lots. A centralized processing facility could be established to convert the seeds into bio-fuel for city vehicles.
- Using abandoned warehouses for small-scale intensive production of specialized crops, including mushrooms, micro-greens or fish farming
- Developing large-scale composting facilities to supply soil and fertility to urban agriculture efforts.
- Developing hydroponic farms utilizing waste steam from the Mistersky power plant.

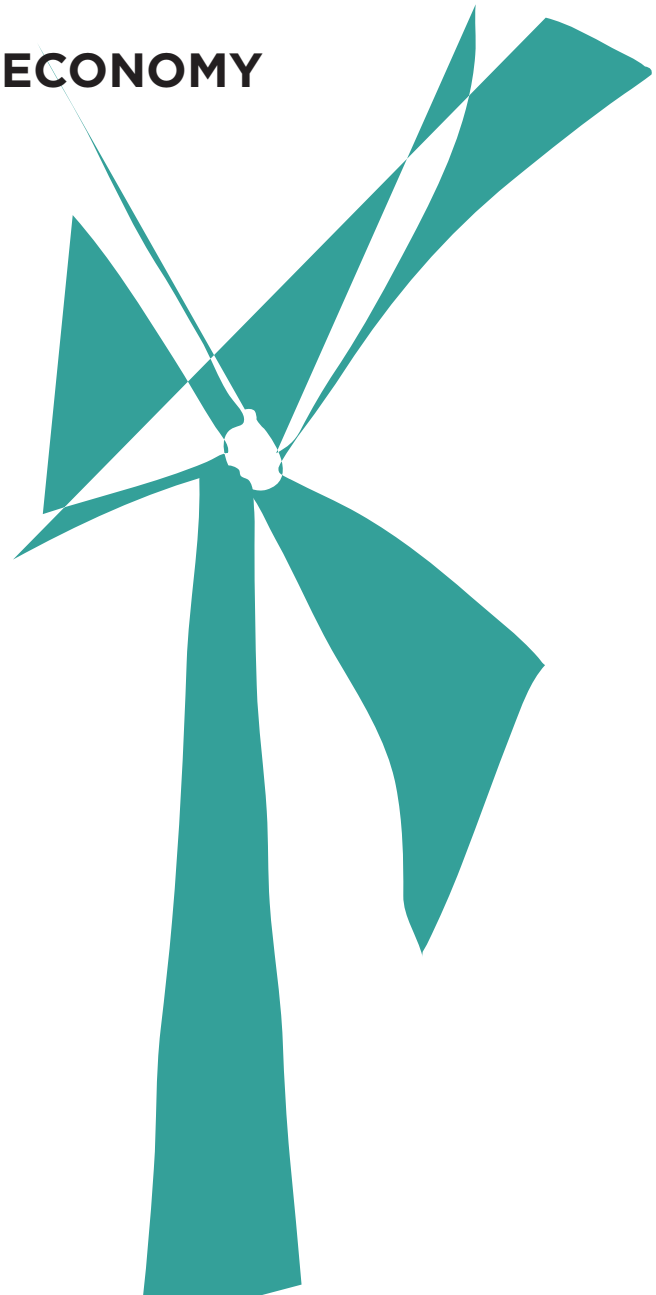
Because of the existence of a diverse food processing and distribution industry already in place, agricultural production

could be linked to the specific needs of firms in that industry. Similarly, crops such as micro-greens or heirloom vegetables could be grown for the city and region's restaurants.

We do not want to suggest that development of large-scale urban agriculture in Detroit will not be without difficulties. Perhaps the greatest practical obstacle is ensuring that soil and subsurface conditions are suitable for growing food crops. While the basic soil types in Detroit are well-suited for agriculture, one hundred years of urbanization, coupled with the effects of automobile exhausts, industrial activity, dumping, and demolition have severely compromised those soils. Many sites will need remediation. In some cases, remediation to levels suitable for food production will be feasible and cost-effective, and in others it may not. For that reason, the initiative must include alternatives to conventional agriculture, including raised beds, greenhouses and hydroponic farming, as well as cultivation of non-food crops such as sunflowers for bio-fuel.

In addition to the technical obstacles, there may be a further obstacle in the form of people's attitudes. We are calling for urban agriculture as a long-term approach to economic development and land utilization in Detroit, not as a short-term or interim program of using sites until more appropriate developments are feasible. Unless that premise is accepted, and all relevant stakeholders are willing to invest in urban agriculture as a long-term, even permanent, use of a large part of Detroit's land area, the initiative will never take place.

GREEN ENERGY AND A GREEN ECONOMY



GREEN ENERGY AND A GREEN ECONOMY

BACKGROUND

Environmental and energy concerns are bringing about fundamental changes in the American economy. Although last year's spike in oil prices has abated, few doubt that there will be significant long-term increases in the cost of fossil fuels, while their use is likely to be further reduced by policies designed to address their environmental impacts. With the arrival of the Obama administration, concerns about climate change and global warming have finally become part of the national agenda.

In response to these concerns, the creation of renewable energy sources has become a high public policy priority. Similarly, one of the major future job growth sectors is likely to be green or "green collar" jobs – a catchall title that can include everything from retrofitting older houses for greater energy efficiency, to building wind turbines or other renewal energy technology, or remediating brownfields sites for productive reuse. A focus on a green economy, however, can offer benefits beyond job creation. it can offer Detroit a more stable energy supply with greater energy security, and less pollution.

For all of the Motor City's historical identification with gas-guzzling American automobiles, Detroit is well-positioned to take advantage of changes in energy use and the economy. Thanks to the automotive industry, there may not be another area in the United States that has a broader and richer pool of individuals with skills in energy and related technologies, as well as a deeper pool of manufacturing capabilities adaptable to green energy technologies. As will be discussed below, Detroit's location offers natural advantages as well.

The great value of green jobs and renewable energy initiatives is that they can create opportunities not only for sophisticated engineers and savvy entrepreneurs, but also for large numbers of people who have limited skills or formal education; opportunities that are desperately needed in Detroit. As initiatives are explored and pursued in this area, it is critical that they consistently focus on that goal: creating opportunities for Detroit's lower income residents, people who today have little stake in the economy or the workforce.

CHECK YOUR BIRKENSTOCKS AT THE DOOR!

The association of green jobs with hardy outdoorsmen and women or granola-munching hippies is a thing of the past. Green jobs are diverse, and include a wide range of jobs involving skilled labor in manufacturing, construction and installation, as well as jobs for engineering and other technical personnel (Fig. 11)

One good example is that of job opportunities related to retrofitting older homes and buildings for greater energy efficiency. Detroit today has nearly 240,000 homes built before 1950, as well as thousands of commercial and institutional buildings. These buildings generate hundreds of millions of dollars in unnecessary energy costs for their owners and tenants. This cost savings is enough to support a substantially larger retrofitting industry than currently exists in Detroit through payback from energy savings, even without the Federal funds that will be available through the economic stimulus package.

A primary goal should be to make Detroit a center of renewable energy technology innovation and manufacturing, taking advantage of the outstanding skill sets and facilities that exist

FIG. 11: GREEN STRATEGIES REPRESENTATIVE JOBS

Building Retrofitting
Electricians, Heating/Air Conditioning Installers, Carpenters, Construction Equipment Operators, Roofers, Insulation Workers, Carpenter Helpers, Industrial Truck Drivers, Construction Managers, Building Inspectors

Mass Transit
Civil Engineers, Rail Track Layers, Electricians, Welders, Metal Fabricators, Engine Assemblers, Production Helpers, Bus Drivers, First-Line Transportation Supervisors, Dispatchers

Energy-Efficient Automobiles
Computer Software Engineers, Electrical Engineers, Engineering Technicians, Welders, Transportation Equipment Painters, Metal Fabricators, Computer-Controlled Machine Operators, Engine Assemblers, Production Helpers, Operations Managers

Wind Power
Environmental Engineers, Iron and Steel Workers, Millwrights, Sheet Metal Workers, Machinists, Electrical Equipment Assemblers, Construction Equipment Operators, Industrial Truck Drivers, Industrial Production Managers, First-Line Production Supervisors

Solar Power
Electrical Engineers, Electricians, Industrial Machinery Mechanics, Welders, Metal Fabricators, Electrical Equipment Assemblers, Construction Equipment Operators, Installation Helpers, Laborers, Construction Managers

Cellulosic Biofuels
Chemical Engineers, Chemists, Chemical Equipment Operators, Chemical Technicians, Mixing and Blending Machine Operators, Agricultural Workers, Industrial Truck Drivers, Farm Product Purchasers, Agricultural and Forestry

in the area. Manufacturing and installing wind turbines, solar arrays and other renewable energy technologies will be a major growth sector in the economy in the coming years. Michigan already offers a variety of attractive incentives for such firms, which Detroit can use to improve its competitive position.

ENERGY SECURITY

A focus on energy efficiency and renewable energy can offer Detroit an unprecedented level of energy security; a stable, reliable and clean energy supply at affordable prices. An energy security initiative for Detroit can be divided into three phases:

- Phase I: focus on energy conservation and retrofitting
- Phase II: increased utilization of wind energy and geothermal heat pumps
- Phase III: application of smart grid technology

The opportunities for energy conservation and retrofitting within existing technologies are great, from individual home retrofits to creating combined heat and power systems in major institutions, particularly medical centers. Wind energy is a particularly attractive technology for Detroit. The electrical generation potential from offshore wind energy in the lakes surrounding the state of Michigan substantially exceeds the state's total electricity demand, with both Lake St. Clair and Lake Ontario located in close proximity to Detroit. A "smart grid" is a system of digitally controlling and coordinating energy sources and energy

uses within an area – a neighborhood, city, region or nation. By using robust two-way communications, advanced sensors, and distributed computing technology, a smart grid can maximize the efficiency, reliability and safety of power delivery and use within the system. In the United States, smart grid technology is being piloted in Austin, Texas and Boulder, Colorado.

While creation of a citywide smart grid in Detroit may be a long-term goal, it is a realistic one. Moreover, as steps are taken to increase energy efficiency in the existing built infrastructure and create more energy from renewable sources, they can be pursued in ways that will lay the groundwork for the ultimate realization of the smart grid, and achievement of Net Zero Energy use in Detroit.

ENHANCED ENVIRONMENTAL QUALITY

Cars and utilities account for more than 65% of Detroit's total carbon footprint. By significantly reducing both overall energy use, and that share of total energy use that comes from fossil fuels, Detroit will be able to experience significant improvements in environmental quality, decreased air pollution, and reductions in poisonous heavy metals Increased environmental quality is critically important for many different reasons. Most fundamentally, it is a matter of community health which is particularly important in an inner-city community where levels of respiratory diseases (such as asthma), and elevated lead levels have a significant impact on the physical and economic well-being of the community. It also affects the community's quality of life, and in turn, its competitiveness in the future economy.

SPECIFIC APPLICATIONS AND MODEL PROJECTS

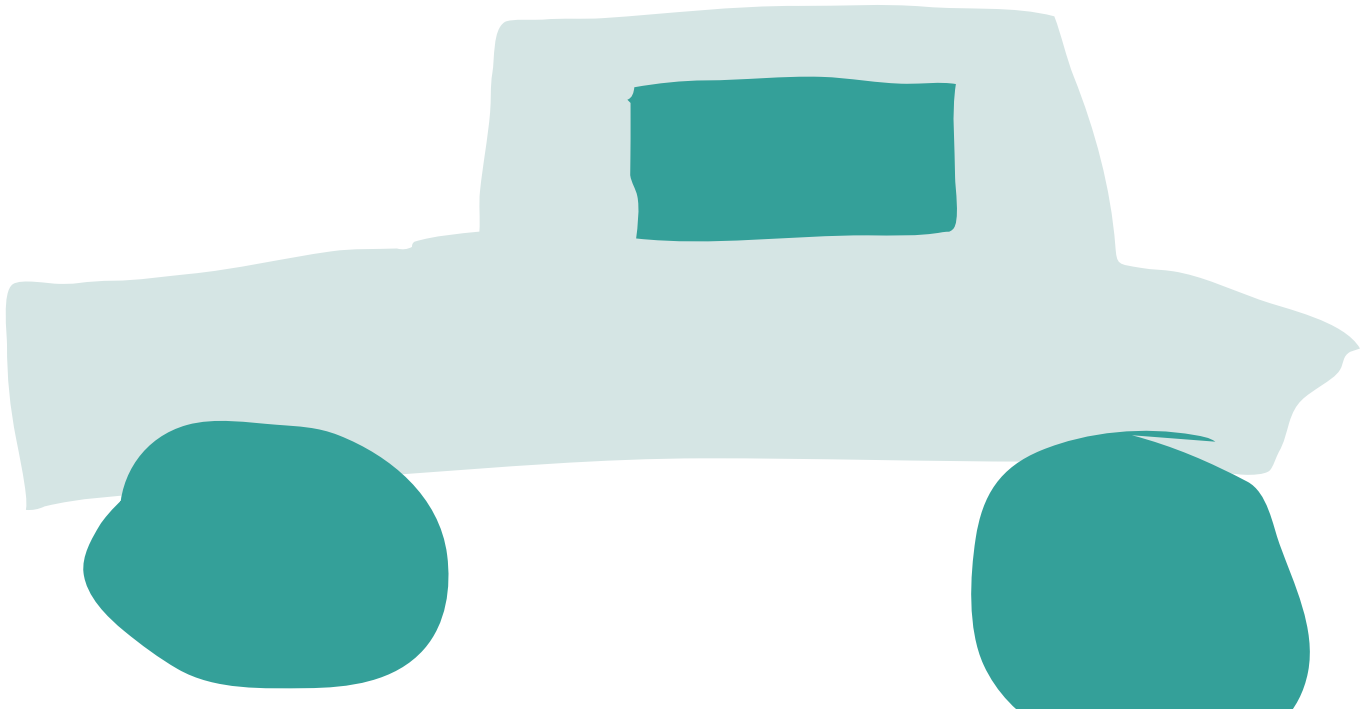
There are many specific steps that can be taken immediately in Detroit to begin building the city's green energy and economy. We have already mentioned the scope of potential retrofitting activity, and the opportunities for energy conservation in the city's major facilities and institutions. Other model projects might include:

- Design of a model eco-village, a residential or mixed-use community, around Net Zero Energy principles
- Pilot plug-in hybrid electric vehicle programs linked to garages with solar rooftops
- Offshore wind energy farms

Detroit can gain significant benefits by a systematic focus on the green economy and renewable energy. It is important, however, to end with a note of caution in two respects:

- Everybody must be at the table. In contrast to some initiatives, which can be pursued if a critical mass of institutions and stakeholders – but not all of the players in the community – decide to do so, a significant green initiative is not likely to happen unless everybody with a stake in the outcome is committed to making it a success. This includes the city, county and state, the city's major institutions and employers, local energy providers, and the environmental community.
- Time is of the essence. Particularly when it comes to industries that are not location-determined, such as manufacture of wind turbines or the development of other renewable energy technologies, Detroit is not the only city looking for opportunities in these areas. Whatever competitive advantages Detroit may have in this area, they are not so great that the city can afford to wait and see the industries flock to its doors. Detroit must move quickly and effectively to become part of this movement. If it does not, it is likely to be left behind.

SUSTAINABLE TRANSPORTATION



SUSTAINABLE TRANSPORTATION

BACKGROUND

It should be no surprise that the city that gave birth to the American "car culture" is defined by a transportation infrastructure dominated by the automobile. More than 77% of commuters in the Detroit SDAT study area drive to work alone, while barely 12% carpool. Perhaps more telling is that the mass transit share of commuters is only 6% in the study area. While these numbers are better than most sprawling suburban communities in the United States, representing fewer single occupant vehicles, higher carpooling, and slightly higher transit use, they are unusual for the central city of a major metropolitan urban area.

Detroit's major traffic congestion issues, for the most part, are focused on its highways and arterial connections outside of its inner city. This is due in part to the significant shrinkage of jobs, housing and population in the city and the study area over the past three decades, and the fact that more than 30% of those living in Detroit's inner city do not have access to a car during the day. The region's most significant congestion occurs along I-94 between Addison and M-19, considered the main connection between Detroit and Port Huron/ Sarnia and the international border crossing between the USA and Canada. Also of note, the Woodward and Woodward Express bus routes, the state's busiest transit routes with nearly 14,000 daily riders in the core of the SDAT area, have been cited as the state's "top transit headache" due to congestion and overcrowding.

Detroit's existing transportation infrastructure presents significant challenges for planners looking to develop a sustainable transportation network. A central challenge is how to effectively shift away from cars serving single family homes with abundant parking to more sustainable modes of transportation reflecting a higher degree of land use connectivity, as discussed in the preceding section. This will require improving the attractiveness and accessibility of public transit as well developing and expanding non-motorized transportation modes, linking them all together in a seamless network.

A number of important projects are underway in Detroit that begin to address these transportation challenges. One of the most publicized efforts is the potential addition of a new fixed-guideway light rail transit system being planned along Woodward Avenue. A second key initiative is the city's recent adoption of a comprehensive Non-Motorized Urban Transportation Master Plan, a blueprint for creating bicycle and pedestrian corridors and greenways throughout the city. And in November of 2008, noted traffic engineering and traffic calming expert Ian Lockwood conducted a series of five innovative workshops to introduce walkability, traffic calming and shared space concepts and techniques to "raise awareness of urban design in the communities and provide some strategic urban design direction" to improve the human scale of Detroit's neighborhood streetscapes.

Perhaps the most promising sea change is beginning to occur at one of the Big Three automakers. Ford Motor Company has begun an innovative program through its office for Sustainability, Environment and Safety Engineering. It is

telling that Ford's executive management now talks about redefining its image, from simply an automobile manufacturer toward becoming a "transportation provider" with a core business as "mobility provider."

Ford's sustainability staff has been working with the University of Michigan SMART program to help develop solutions such as new mobility hub networks in congested metropolitan areas, focusing on development of mobility hubs at a "door to door" level. Most exciting is the Ford/ SMART New Mobility Industry development effort aimed at making Detroit "the center of transportation innovation once again through multi-modal sustainable transportation" In their words, "The New Mobility industry goes beyond the traditional transport sector to embrace manufacturing, clean energy and utilities, I.T., real estate, logistics, tourism, the financial sector, and new small business services."

Elements of a sustainable transportation network for Detroit Given this background, the key components that SDAT team members identified for the success of a sustainable transportation network for Detroit are the following:

- A revitalized public transit system that focuses on better integration of Detroit's transit network within its neighborhoods, as well as the suburban and regional transit system
- Improved connectivity – door to door, between neighborhoods, between the city and suburbs, and regionally – through creation of new mobility hub networks, linking land use and transportation within the urban villages, as well as along key development nodes where a range of public and private transportation modes, services, and amenities connect
- Implementation of a comprehensive walkability plan that builds on current initiatives and expands it to all of Detroit's neighborhoods and to the city's waterfront
- Linking transportation and land use - consideration of the movement of goods as well as people within and connecting to Detroit's burgeoning urban villages
- Use of sustainable transit vehicles that operate within the urban villages providing accessible, convenient, non-polluting circulation
- More visible sustainability leadership from the transit providers, planners and especially the local industry giants like Ford Motor Company

IMPROVING TRANSIT

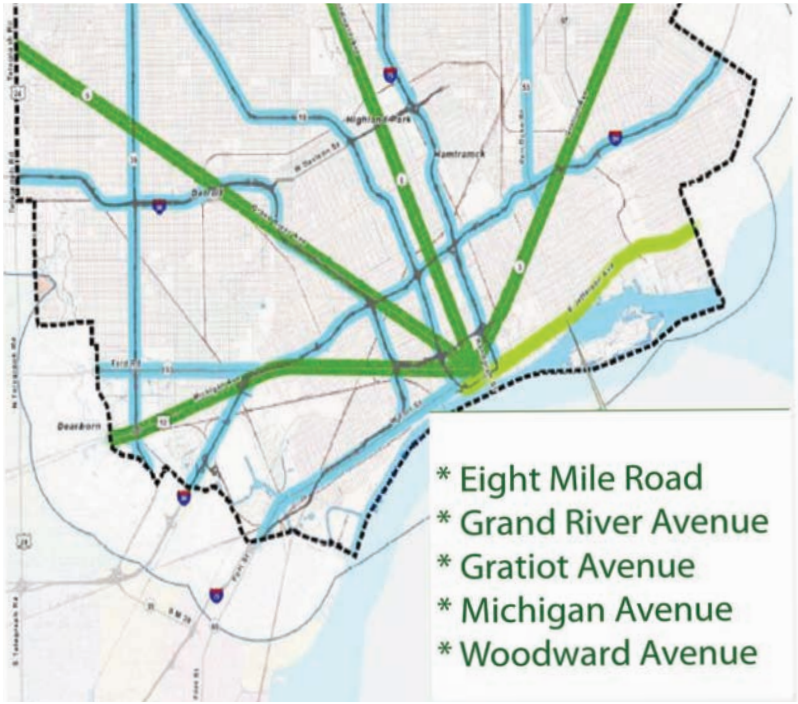
Despite the city's extensive bus transit system and the existence of a downtown people mover, the bus transit network in Detroit is underutilized. While recent ridership counts showed increases due to rising gas prices (before the recent economic collapse), the share of commuters using transit in the city is relatively low. One issue SDAT team members observed is that on-time performance of neighborhood-level bus service is perceived to be lower than on trunk routes like the 53 Woodward route. Leaders from neighborhoods within the SDAT study area complained of significant bus waiting times for buses as a deterrent to transit usage.

Another contributing factor is that the suburban bus transit system (SMART) and the Detroit Department of

Transportation (DDOT) bus service operate as separate systems. A comprehensive area transit map showing both systems as an integrated network would improve this significantly. Information displayed at bus stops is also often confusing, as evidenced by the observation of bus stop signage along Woodward Avenue. DDOT is in the process of creating new signage that should improve this.

DDOT recently published its draft Five Year Plan which begins to address modernizing the system, adding light rail and HOV lanes, providing better marketing and public involvement, and introducing a Transit Oriented Development (TOD) initiative (Fig.12). The plan also supports the transit priority corridors identified in the Detroit Transit Options for Growth Study (DTOG).

FIG. 12: TRANSIT PRIORITY CORRIDORS IN DDOT FIVE YEAR PLAN



The DTOG study identifies the Woodward Avenue corridor as the preferred alignment for a new 9.3-mile light rail transit system (LRT). The plan received further support from Southeast Michigan Council of Governments (SEMCOG) when its general assembly in the Summer of 2008 approved the project for inclusion in the long-range 2030 Regional Transportation Plan, a necessary step to be eligible for federal New Starts transit funding. A new light rail system could serve as a catalyst for increased transit ridership with a projected 22,000 daily ridership, as well as for new economic development along the corridor.

This same corridor once had a thriving urban streetcar system that was eventually terminated and replaced by today's motorized buses. The proposed light rail system will connect with feeder bus route service to the city's burgeoning urban villages, as well as to bike/pedestrian modes through mobility hubs. The system will also connect to the new commuter rail service connecting to Ann Arbor. The SDAT team members identified this project, along with the new commuter rail initiative connecting Detroit and Ann Arbor, as one of two key short-term initiatives in Detroit's effort to develop a more sustainable transportation system, particularly when effectively linked with other transportation modes.

MOBILITY HUBS

The concept of new mobility hub networks has been developed and refined through the University of Michigan's SMART program (Sustainable Mobility & Accessibility Research & Transformation) and has been embraced by Ford Motor Company's Office of Sustainability, Environment and Safety Engineering and by Ford leadership. Detroit's SDAT participants identified implementation of mobility hubs as a key component in the development of a sustainable transportation system.

The development and implementation of mobility hubs is the current work of the University of Michigan's SMART program. SMART has just begun to explore the opportunity for developing hub networks in the Detroit region. The concept builds on the reality that a person's journey to work, shopping, recreation or other destinations in an urban environment typically involves an extensive series of transportation modes, from walking and biking, to multiple transit modes (van, bus, LRT, streetcar, subway, people mover, ferry etc.), or possibly car sharing (like ZipCar), car pooling, taxi, or even rickshaw, as examples.

The mobility hub approach provides physical and informational linkages for any journey, by offering physical transfer points at ubiquitous hubs (which are by nature pedestrian friendly), as well as signage, wayfinding, and IT supports for door to door traveler information. "At your fingertips" wayfinding techniques can be delivered through cell phones or PDAs as well as simple public information kiosks, designed to fit into the neighborhood or surrounding environment. This approach can optimize a person's travel experience while, at the same time, preserve the environment by emphasizing the most sustainable transportation options throughout the trip. Mobility hubs can be described as follows:

"The beauty of the Hub network is that you can transfer seamlessly from one mode of transportation to the other, informed of schedules and options all the way (either by public kiosks or through your cell phone, or even through better signage in areas which are not fully technologically served). The approach favors use of the best mode for the purpose, gaining access to car share at one hub, and dropping it off at another to pick up a waiting bus or train or bike."

- Susan Zielinski and David Berdish

REDEFINING DETROIT'S STREETSCAPES

A number of neighborhoods that are part of the SDAT study area have already begun implementing plans to improve the walkability of their streetscapes, and implementing traffic calming measures to improve the urban experience for pedestrians. Examples of such neighborhoods include the Midtown Loop and New Center projects.

Five urban design workshops were also conducted by traffic calming expert Ian Lockwood in November of 2008; the resulting report and publication are expected in early

2009. These workshops along with other efforts in various neighborhoods reflect a worldwide movement to create shared urban space that integrates automobiles and people into the context of the particular urban location, such as parks and civic space. One example often cited is the city of West Palm Beach, Florida, which has undergone major transformation through the implementation of a comprehensive traffic calming and urban design program.

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LINKING TRANSPORTATION AND LAND USE

As the new paradigm of urban villages emerges in Detroit along with the foundations of a new economy, it will be essential for transportation planning and land use to occur in an integrated approach. The transportation innovations discussed earlier will be driven by this approach. As stated in the section on land use, creation of greenways and blueways and access to the city's waterways is essential. One additional element to consider as the new economy emerges in Detroit is the sustainable transportation of goods from neighborhood to neighborhood, urban farm to urban farm, farm to markets, and to processing and distribution facilities locally and regionally. Sustainable transportation for goods movement needs to include planned coordination of goods delivery, demand management, and sustainable modes for goods transport.

SUSTAINABLE TRANSPORTATION LEADERSHIP

The ability of Detroit to create a new sustainable transportation system will depend on many factors, not the least of which is continued leadership coming from community organizations and planners that have already demonstrated this through their innovative initiatives. Leadership must also come from the transportation service providers, such as DDOT and the Suburban Mobility Authority (also called SMART), as well as city and county government and regional agencies such as SEMCOG. The most important leadership, perhaps, for sustainability is that which comes from the private sector. Just as companies like Ford once demonstrated leadership as innovators in developing the automobile industry, so too can their leadership today help develop the transportation system that the city deserves. Ford has taken bold steps in this direction, and needs to continue working with other sectors and industries for sustainable transportation to become reality here.

WHERE TO GO FROM HERE?

Detroit is at a critical point in its history. Its problems and difficulties are real and intense, and as the global economic crisis deepens and the automotive industry goes through a wrenching transformation, they can easily seem overwhelming. At the same time, as we have tried to show in the preceding pages, the city's opportunities are substantial, and achievable. If those opportunities are to be seized, and the city's economic decline arrested, however, radically different thinking will be needed from that which has brought Detroit to its present condition.

FIRST, as we have stated more than once in the preceding pages, Detroit must recognize its reality as a far smaller city than it once was, in population if not land area, ,and reconsider its land use, its economy, and its transportation network around that reality. It will not be easy to break with the image of the past Detroit, or to implement the strategies that follow from recognizing today's reality, but both must take place if the city is to be able to forge a new identity, and a new economic and urban vitality.

SECOND, Detroit must adopt bold, visionary but realistic strategies. The urban agriculture initiative laid out in Section 6 of the SDAT report is achievable, and can have a significant impact on the city's economic and social vitality, but only if it is pursued in a bold, sustained long-term fashion. Bold does not mean reckless; difficulties and obstacles cannot be ignored or minimized, but need to be overcome. Without bold, sustained efforts, no economic initiative will ever reach the scale needed to become transformative of local conditions.

THIRD, all of Detroit's key players in both the public and private sector must work together. In that respect, city government has a critical role to play. Ultimately, city government is the glue that can hold a city together. If the city government does not perform that function, no one else can step in to its place. This is another reality that Detroit must confront, and decide whether it can re-invent a city government that can not only deliver needed public services, but that can offer both vision and leadership to the community, bringing all of the public and private stakeholders in the community together to build a new Detroit.

City government may be the glue, but other institutions and organizations are also critical to the city's future success. As we describe in Section 4, if the city's anchor institutions came together to wield their economic clout to maximize job and business opportunities within the city, their impact could be dramatic. At another level, building greater co-operation and engagement among the many governmental and private entities across Southeast Michigan needs to be another priority.

FOURTH, Detroit must plan. This may seem strange, because Detroit already has many plans, many of which have never been implemented. What Detroit needs, though, are not "pretty picture" plans, but specific, practical action plans to achieve particular goals, whether it is the urban agriculture initiative, the green jobs initiative, the anchor institutions initiative, or the larger strategy of reconfiguring the city's land uses around the reality of a far smaller population.

These plans cannot be hatched by a handful of people behind closed doors. A process is needed by which the entire community both comes to understand the new reality, and participates in the process of framing the strategies that reflect that reality. Only in that way will those strategies have the public support that will be needed to make the tough decisions that must be made.

FIFTH, it is time Detroit looked forward, not backward. There is no point in looking back to a Detroit whose population approached 2 million, or in which the automobile industry provided all-but lifetime employment for thousands at good wages, because those days are not coming back. Equally, it serves little purpose to remain rooted in the conflicts and resentments of the past. However real those conflicts, the over-arching need in Detroit today is to bring people together to solve problems and move forward.

One hundred years ago, Detroit was a center of visionary innovation and entrepreneurship. That spirit needs to be rekindled to build a new Detroit around a new vision – one of sustainability, economic opportunity and social equity for all of its people.

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