

# DETROIT AGRICULTURE SECTOR



# Foreword

We welcome you to the Dutch trade mission to Detroit to be held on the 31st of May, 2015. We have developed an inspiring program around the themes “Food Security & Healthy Cities” where urban agriculture and greenhouse technology play a central role.

We have modeled this program around the Detroit Urban Regen project by Except Integrated Sustainability with a mission to develop a new bio-based economic value chain within the city of Detroit.

Detroit Urban Regen relies on the strengths of Detroit; such as the hard-working, production and processing oriented culture, the availability of skilled and unskilled labour, and low cost of land. The economic value chain uses these resources and strength to set a new foundation for the economic and social development, creating not only jobs but also developing new opportunities for working, living and housing. And importantly, community services for the well-being of workers and the city as a whole.

With the Detroit Urban Regen project, Except and its partners, aim to create this new value chain around bio-based production, processing, retail and recycling. Except and its partners aim to exploit the strength of the Dutch to bring stakeholders together and develop the basic principles of this value chain where our American partners, entrepreneurs and the local community realize their own desires and ideas within the framework to rekindle the Detroit dream.

Looking forward to see you on the 31st of May.

Aernout Aki Ackerman

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# Acknowledgements

The Dutch Embassy in Washington commissioned Except Integrated Sustainability to organize the trade mission event and this background report was prepared as part of this assignment.

This document would not have been possible without the support from Detroit Future City, Detroit Food and Fitness Collaborative, Michigan State University, the Center for Regional Food Systems and the hard work from the Except team.

Kind permission was granted to use the Economic Analysis of Detroit Food Systems commissioned by the Detroit Food and Fitness Collaborative with funding from the WK Kellogg Foundation, and the Detroit Future City 2012 Strategic Framework Plan.

Furthermore, personal contributions were made from DeWayne Wells, Richard Spirog, Tom Perkins, Gieljan Beijen, and Aernout Ackerman.

# Summary

Detroit is a city known for many things - automotive innovation, music that has moved generations, a rich agricultural history, and vibrant food culture. Detroit was also the first city in the U.S. to offer urban farming programs to help the homeless and assist city residents facing economic hardship.

A recent survey of Detroit residents revealed that nearly one-third of the respondents would leave the city within five years, citing safety as the top reason.

Detroit has a large, centralized infrastructure system that was designed to support a population greater than 2 million. Today's system is oversized for the population and is now largely antiquated and needs replacing.

There are nearly 15,000 vacant and abandoned parcels scattered throughout the city which resulted in 1,400 networked gardens and urban farming operations. Reactivation of less than 300 acres of vacant land could supply 31% of seasonal vegetables and 17% fruit of local consumption.

Agriculture has a lot of potential in Detroit and can contribute to employment, food security and social and economic development. The agricultural production sector is poised for explosive growth with revenues set to rise from \$3.8M to \$260M with only 30% localisation.

The local climate represents year-round productivity challenges to scaleable agriculture operations. Dutch suppliers can fulfill technological and knowledge needs including greenhouses, water management and temperature management. Increases in production efficiency and scale could provide profound contributions to the local economy.

By 2030, Detroit nearly doubles the number of jobs available for each person living in the city. Detroit can be a vibrant city of 700,000 people or less if deliberate actions are taken to increase family wealth and the earning power of people who are now in poverty.

This research consists of an analysis of the current opportunities for the Dutch agriculture industry in Detroit and its prospects for further development and expansion. The trade mission has been initiated by the Dutch Ministry of Foreign Affairs.





## Brief History of Detroit

In 1900 Detroit had a population of only 285,000. Within 30 years the population grew to almost 2 million as a result of the 'Big Three' automotive companies opening new production line manufacturing facilities. The industry drew in a million new residents to the city.

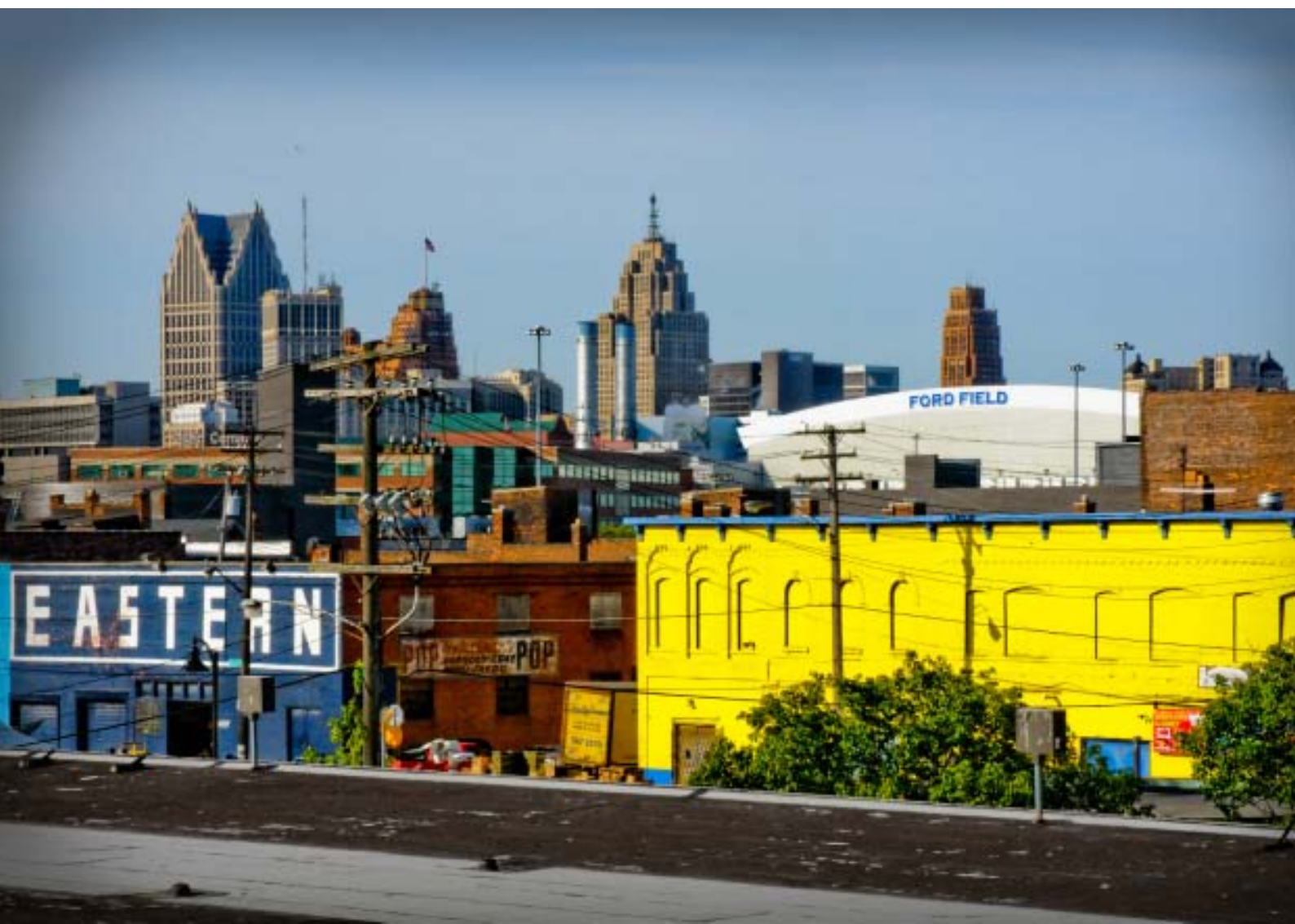
"Detroit" quickly became a metonym for the American automobile industry.

In the 1950s and 1960s, freeway construction as part of urban renewal cut through the most densely populated black neighborhoods. About one-third of displaced families eventually moved to public housing. At the same time automation began to replace manual workers in large numbers.

In the 1990's, oil prices shot up with the arrival of OPEC. The 'Big Three' (General Motors, Ford, Chrysler) started to struggle financially. In 2009, Chrysler and GM filed for Bankruptcy. Followed two years later by the City of Detroit. Between 2000 and 2010, the city's population decreased by 25%.

The Governor of Michigan, Rick Snyder, declared a financial emergency for the city in March 2013 with creditors owing over \$18.5 billion. On December 10, 2014, Detroit successfully exited bankruptcy.

# GENERAL DETROIT INFORMATION





# Introduction

Detroit is in the top 20 largest American cities. Home to 714,000 residents who are resilient and already working to change the course of the city's prospects. A city of global economic assets, including intermodal border crossings and industrial infrastructure that cannot be replicated anywhere else in the region.

Known globally for a brand of innovation in "making things" and growing in reputation for small-scale models of ingenuity, home to a civic network of committed, proactive community-based and philanthropic organizations. A land-rich environment that can accommodate growth and innovation without displacement. Poised to re-position itself as Michigan's leading urban center once again, if there is a coordinated regional urban agenda that enables more mutually beneficial relationships with the region, state, and nation.

A recent survey of Detroit residents revealed that nearly one-third of the respondents would leave the city within five years, citing safety as the top reason. Two years ago, attempts to take on wholesale reform of the educational systems failed. Almost one-third of Detroit children suffer from asthma, a rate three times the national average. Two-thirds of the total population suffers from obesity. Poverty increased 40% over the last decade, now affecting 36% of households.

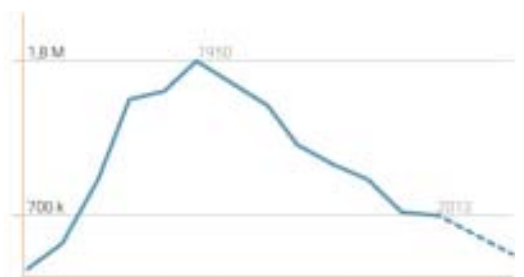




## Demography

Just over 700,000 people live in a city originally designed for 2 million. Detroit's population has been in decline for decades and this trend is expected to continue. The Southeast Michigan Council of Government's (SEMCOG) forecasts for the city predict that the population will fall from the 2010 Census figure of 714,000 to 610,000 by 2030—a long way from the city's peak population of over 1.8 million in the early 1950s, but still keeping Detroit in the top 20 largest cities in the U.S. The composition of the city's population is also undergoing gradual changes. Today, the city has 6% more single-female headed households, 7% fewer children, and a senior population that is expected to grow from 11% to 17% over the next 20 years. On average, Detroit families make only \$28,000 per year compared to families in the region making \$52,000 annually, and one-third of Detroit families make less than that.

These factors, together with the demographics of the current population, suggest that the total number of people in the city may not be as important as the diversity of its residents and the robustness of its job base. Detroit can be a vibrant city of 700,000 people or less if deliberate actions are taken to increase family wealth and the earning power of people who are now in poverty, retain young people in the city, attract recent graduates as new workers, welcome foreign-born families, and ensure the city's oldest residents can choose and afford to age in their homes.



Population of Detroit

- 700 000 current population
- Population decreasing
- Peak population in early 1950's of 1.8 M
- \$28k average family income
- High racial segregation over 85%



# Economy

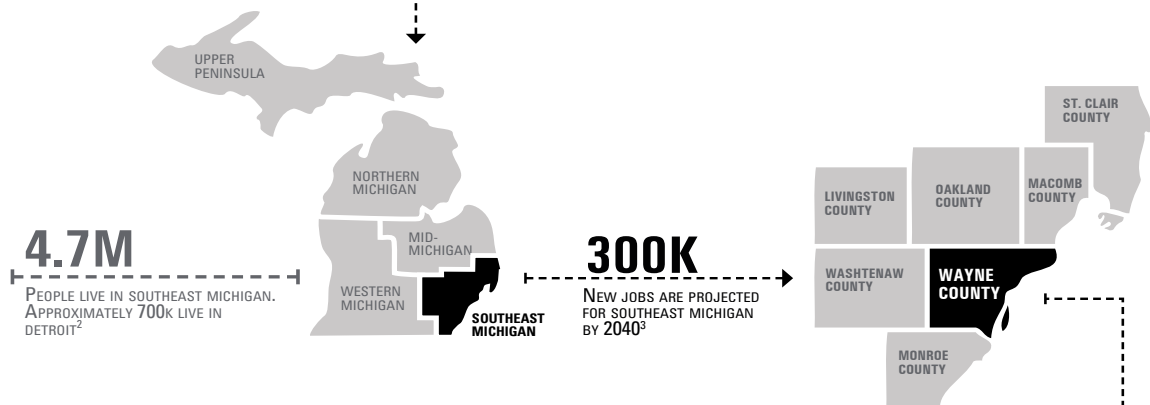
Detroit is Michigan's largest urban center, and is home to the largest concentration of workers, health, education, cultural, and entertainment institutions; the busiest international border crossing in North America for international trade; host to 19 million annual tourists and visitors; a city of beautiful historic neighborhoods and commercial areas, including 245 sites or districts on the National Register of Historic Places and 8 National Historic Landmarks; and the second largest theater district in the country, second only to New York City. These assets make up the city's physical and economic capital.

Detroit gdp is estimated at \$203 billion. The metropolitan economy began economic recovery in 2010. SEMCOG's baseline forecasts for Detroit over the next 20 years project a meager annual growth of 0.1%. Multi-sector development has helped grow the city's employment base after years of decline. Continued growth in these clusters will go a long way toward signaling that Detroit is no longer a "one-company" automobile town.

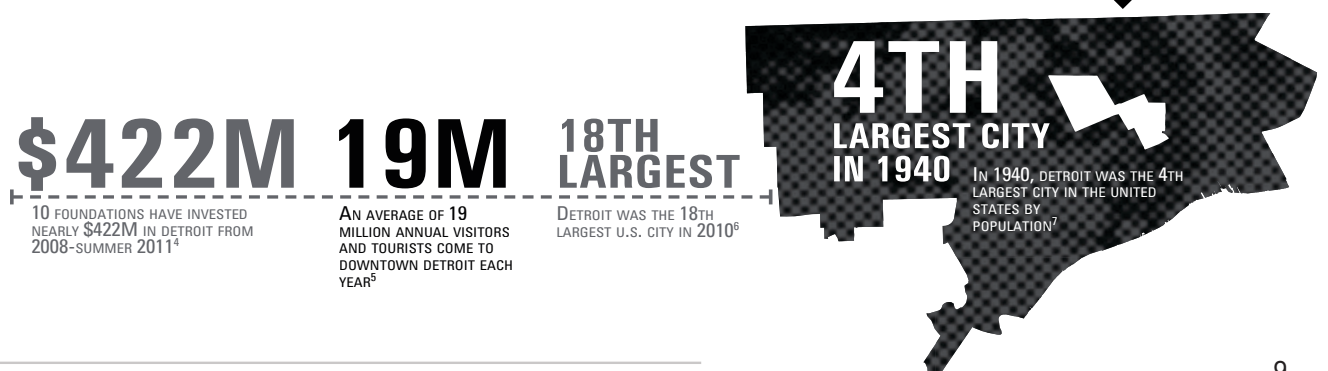
INTERNATIONAL



REGIONAL



CITY





**“By 2030, the city will nearly double the number of jobs available for each person living in the city.”**

## Employment

There is only 1 private sector job for every 4 Detroit residents. The fall in Detroit's population has been accompanied by a loss of jobs both in Detroit and the region in the last decade. There are approximately 275,000 jobs in Detroit today, with 70% at private sector employers and the remaining found in self-employment and local, state or federal government employment.

Much discussion and debate has focused on the availability of jobs and the readiness of Detroit's workforce to take those potential jobs. That discussion should be framed not as an “either/or” but as a “both/and.” Too few jobs, high unemployment, poverty rates, the challenges of K-12 educational reform, and reduced workforce development funding all have an impact, not only on household incomes, but on the taxes and fees the city takes in to run and maintain essential services. Addressing this “chicken and egg” problem requires a strategy that addresses job creation in Detroit and the reform of K-12 and adult education as equally urgent priorities.



## Size and Regions

Detroit has a total area of 370 km<sup>2</sup>. The Detroit Urban Area covers parts of the counties of Macomb, Oakland, and Wayne. The Metropolitan Statistical Area (MSA) also includes the counties of Lapeer, Livingston and St. Clair.

The city slopes gently from the northwest to southeast on a till plain composed largely of glacial and lake clay.

## Political Situation

The government of Detroit, Michigan, is run by a mayor, the nine-member Detroit City Council, and clerk elected on a nonpartisan ballot. Detroit has a "strong mayoral" system, with the mayor approving departmental appointments. The council approves budgets, but the mayor is not obligated to adhere to any earmarking.

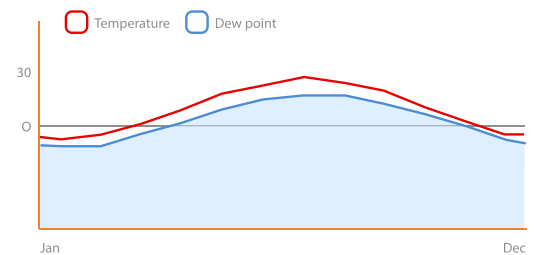
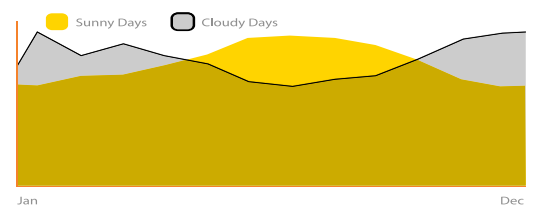




## Climate

Detroit and the rest of southeastern Michigan have a humid continental climate which is influenced by the Great Lakes; the city and close-in suburbs are part of USDA Hardiness zone 6b, with farther-out northern and western suburbs generally falling in zone 6a. Winters are cold, with moderate snowfall and temperatures not rising above freezing on an average 44 days annually, while dropping to or below  $-18^{\circ}\text{C}$  on an average 4.4 days a year; summers are warm to hot with temperatures exceeding  $32^{\circ}\text{C}$  on 12 days.

Precipitation is moderate and somewhat evenly distributed throughout the year, although the warmer months such as May and June average more, averaging 850 mm annually.



# Land use

The rescaling of Detroit has presented challenges and great opportunities. Areas of high-density plot vacancy have been earmarked for green rezoning. Large pockets of 'Ecological Innovation' land will become available, clearing a path for profitable and large-scale urban farming initiatives.

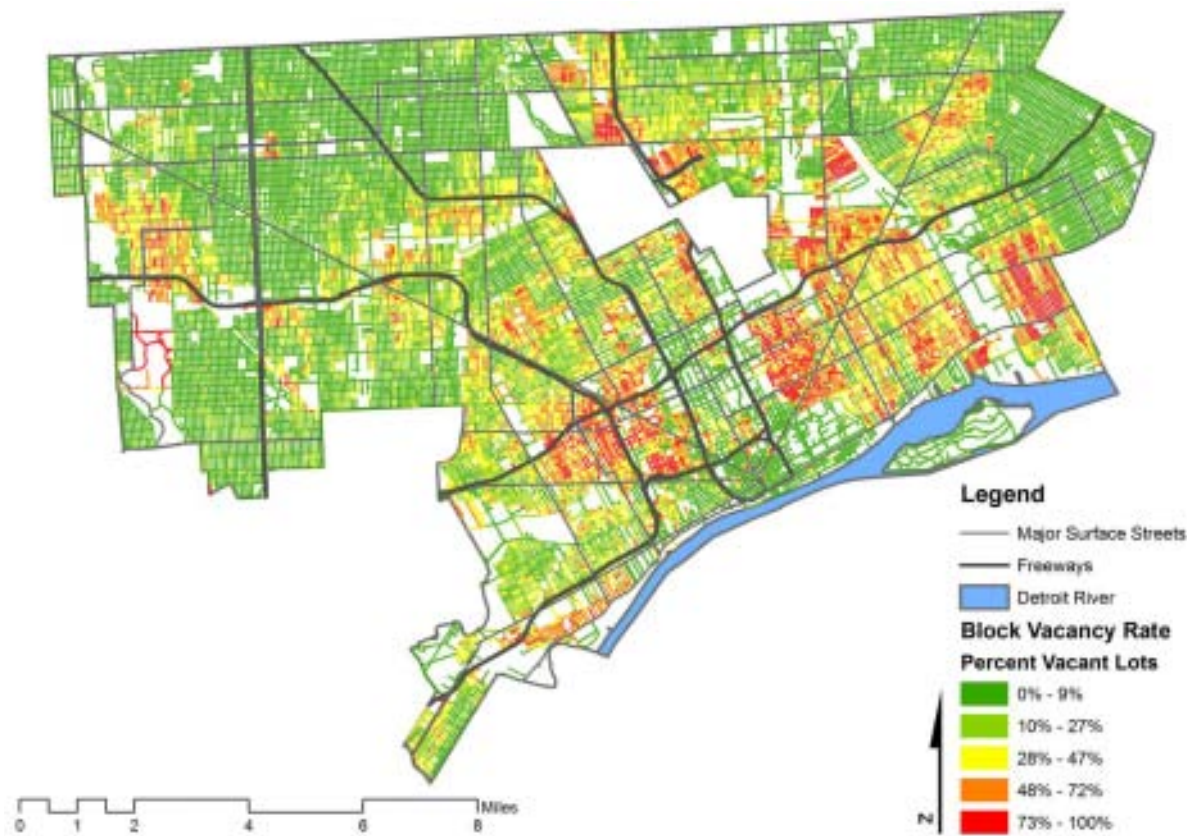
With an estimated 20 square miles of vacant land, Detroit's abandoned lots are roughly the size of Manhattan. This characterization of Detroit is supported by the housing statistics of rising foreclosure rates, falling home and property values, and an excess of vacant land and homes for which there is not enough demand to fill before property deterioration sets in. Many homeowners in particular have been unable to balance their checkbooks as they see housing and transportation expenses account for over 50% of their monthly income, while the value of their investments continues to decrease.

With nearly 150,000 vacant and abandoned parcels scattered throughout the city, every area of the city is vulnerable to some level of

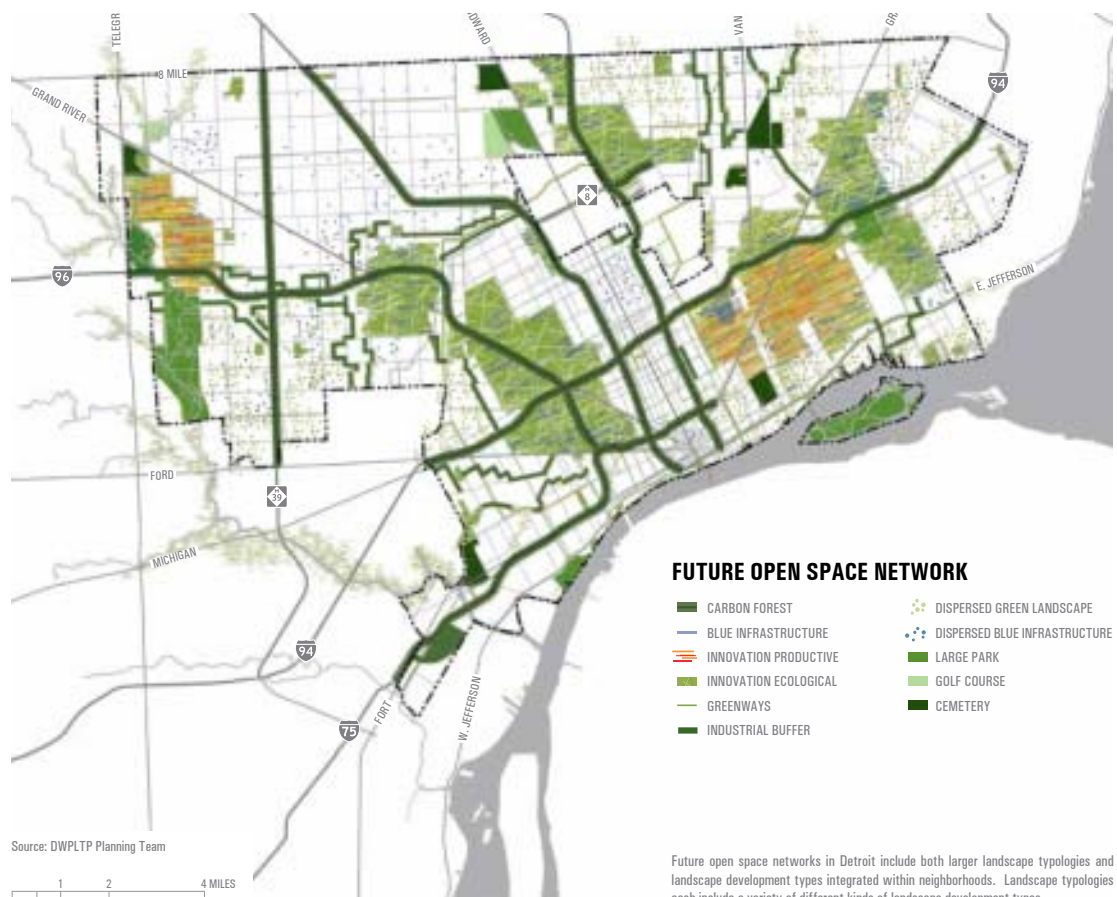
disinvestment. Despite a common perception, the majority of residents in the city live in areas that have only low or moderate levels of vacancy—less than 30%. This is not ideal, however, when more stable neighborhood options exist elsewhere in the region. This also leaves nearly 100,000 residents in areas of the city that are sparsely populated and unlikely to return to their previous traditional residential neighborhood character.

Detroit must transform its image of vacancy into an image informed by the new possibilities for 21st century land uses. This means creating new opportunities for vacant land to become assets that contribute tax dollars, produce jobs, or become a public amenity. It does not mean that the people who might remain in higher-vacancy areas should not receive essential city services. Becoming a more affordable city for families and government means that land uses, regulations, and investments must be strategically coordinated to create more efficiency and sustainability now and over the long term.





Vacant lots as a percentage of all parcels, By Block, 2009



Future open space networks in Detroit include both larger landscape typologies and landscape development types integrated within neighborhoods. Landscape typologies each include a variety of different kinds of landscape development types.



# Food Industry

In the Greater Detroit Region, food production accounts for only 2.6% of all food related economic activity. Local food production amounts to 4% of total demand while the local food system has one of the lowest normalized revenues in the U.S.

Detroit Food System produces \$3.68B in annual revenues, and directly employs a little over 36,000 people earning close to \$1B in wages and salaries per year.

Food Manufacturing and Processing is the largest food industry category by revenue, accounting for over a third of all food system revenues at approximately \$1.25B.

Detroit has an active, but disparate food system that denies access to healthy, fresh, and sustainably grown food to many of the city's residents. There is an overabundance of marginal food outlets charging high prices for low quality food.

Detroit is a model for innovative community-based agriculture practices, with over 1,400 networked gardens and farms. In 2013, Detroit City Council passed the city's first urban agriculture zoning ordinance, establishing the legality of a wide array of agricultural land uses within the city limits.





## Technology, Infrastructure and Logistics

The largest airport in the area is Detroit Metropolitan Wayne County Airport (DTW) in Romulus, an international airport that serves as a commercial hub for Delta Air Lines and Spirit Airlines.

Detroit can benefit from geographic proximity to Canada. 25% of all US-Canadian trade crosses the Ambassador Bridge each year, \$1.7 Billion in goods per day.

The water works have a designed capacity for over 2 million people. Water is available however distribution infrastructure is antiquated and needs replacing.

The Port of Detroit consists of multiple marine terminals handling general, liquid, and bulk cargo as well as passengers. The single most valuable commodity is steel, and the largest commodity handled by tonnage is ore. Total annual tonnage is 13,738,737.

In 2013, \$210-million financing arrangement was approved for overhauling the city's antiquated lighting system. On December 13, 2013, the Public Lighting Authority (PLA) financed the purchase of up to 50,000 LED street lights.

Detroit has large, centralized infrastructure systems that were designed to support a population of at least 2 million, with large areas of heavy industry. As a result, today's Detroit has systems that are oversized for the current population and are no longer aligned with where people and businesses now reside or will likely be in the future. The current systems of water, energy, roads, and telecommunications are not sufficiently oriented to a new economy that focuses on less resource-intensive manufacturing and new service sectors.

The systems are also aging. Many have reached the end of their effective design lives, and many more will do so during the next twenty years. Typically, this means that they are less reliable and use more energy and water than necessary to serve people, while contributing to both local and global pollution. Lower demand in many areas means low usage levels (sometimes as low as 30-40% of designed capacity), which results in inefficient operations and more system breakdowns. Crucially, it also means significantly reduced revenues from user charges and taxes. In spite of this situation, agencies are required to maintain uniform high service levels across the city and reinvest in maintaining the network as a whole.



# DETROIT AGRICULTURE SECTOR





# Market

Aldi and Wholefoods operate significant local facilities. However, a 2009 University of Michigan report estimated that neighborhoods within the city-limits have sufficient income to sustain from \$210 M to \$377 M in additional grocery retail spending and support up to 1,000,000 square feet (92,900 m<sup>2</sup>) of additional retail grocery space. Metro Foodland is the final black-owned supermarket in Detroit, a majority black city.

An estimated 96% of food consumed in Detroit is imported, representing significant localization opportunities.

In 2012, Michigan exported nearly \$3.2 billion of agricultural products to Canada, Mexico, Japan, South Korea, China, and more.





## Scale of Agriculture

Agriculture in Greater Detroit is generally synonymous with small to mid sized urban operations. Larger agricultural operations are found in Michigan state.

There are about 10 million acres of farmland in Michigan and the state is home to 52,194 farms.

The food and agriculture industry contributes \$101.2 billion annually to the state's economy. Total employment resulting from this sector is 923,000 which accounts for about 22 percent of the state's employment.

Michigan farms and the commodities they produce account for \$13 billion of the overall total.

Field crops have the greatest economic impact at \$5.72 billion, followed by livestock including dairy with an economic impact of \$4.73 billion. The total economic impact of nursery and landscape production is \$1.20 billion.

The economic impact of the fruit and vegetable production is \$758 million and \$673 million respectively.







# Level of Technology

Urban farming operations are almost exclusively uncovered and unprotected. Very little sophistication in temperature management is currently utilized. Tunnels are sometimes seen in Urban Farming operations. Labor is typically fully manual and lighting is rarely utilised.

# Production and Productivity

Michigan produces over 300 commodities on a commercial basis including tart cherries, blueberries, dry beans, floriculture products, and cucumbers for pickles.

Soybean and soybean meal were Michigan's largest export commodity in 2012, valued at \$802 million.

Since lighting technology and greenhouses are rare in urban farming,

# Profitability

Electricity prices in Detroit are marginally higher than the U.S. National average. Labour, due to the auto industry withdrawal, is highly available and affordable. Water is in abundance however, water supply - due to legacy infrastructure - is restricted and potentially unreliable. Hence, guaranteed water supply can be costly.



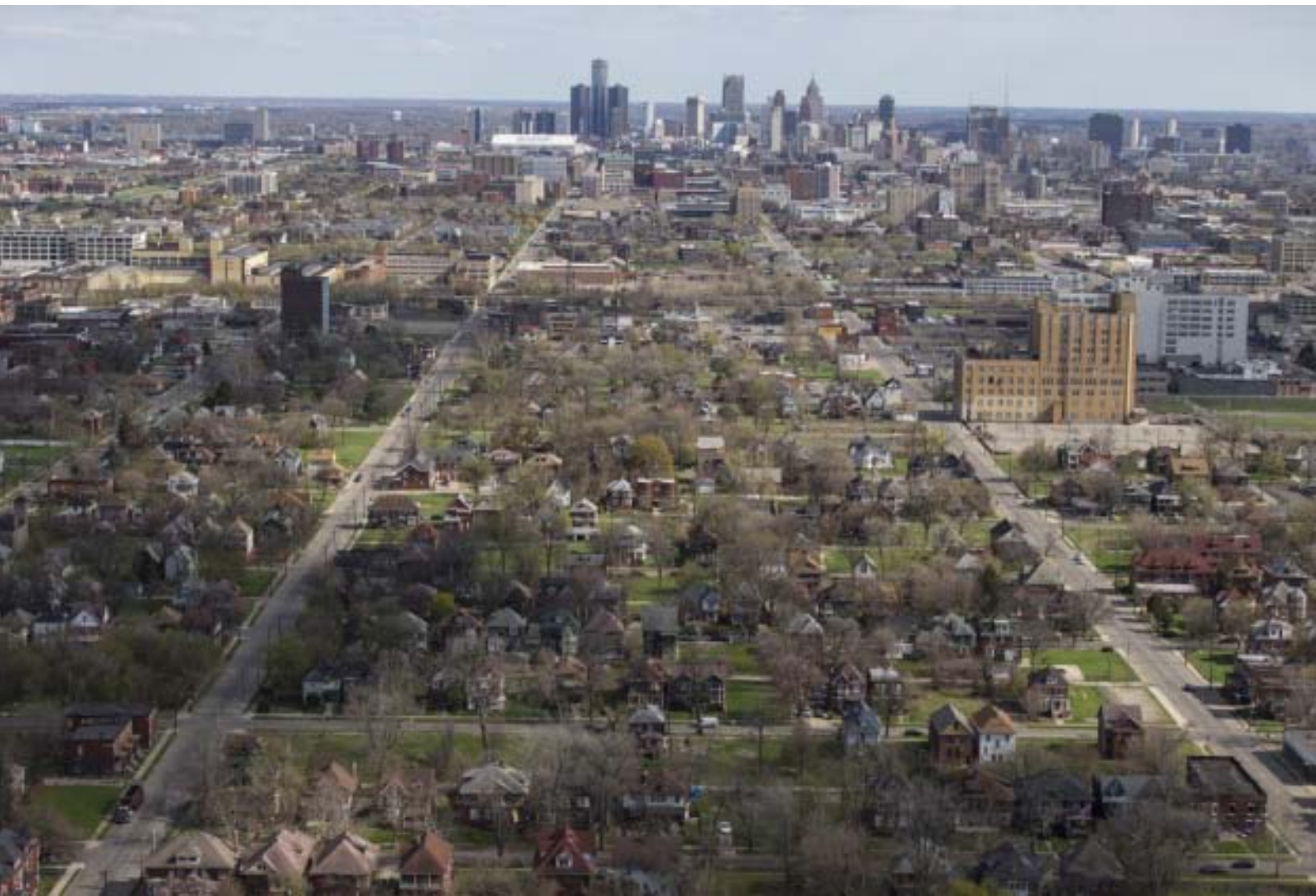
# Government and Agriculture Policies

Generally, urban agriculture and food localisation support is growing rapidly. Significant stimulation in policy and investment from private sector and community lead initiatives is driving innovation.

Still, public land remains difficult to re-zone and purchase and ordinances do not incentivize ownership.

Local workforce stimulation policies and stricter policies for migrant workers is negatively impacting the workforce on farms.

Policy improvements in urban agriculture on the local level and SNAP incentives at the federal level, offer a glimpse of what a coordinated effort in policy advocacy can accomplish.







## Challenges

There was \$178.2M in grocery leakage in city of Detroit in 2013. Only 4% of food consumed in the city is locally produced.

Price for local produce is still a major issue for buyers due to limited supply volume. Commercial scale urban agricultural capacity is restricted by a shortage of prepared and willing workers, and like most of the U.S. is dependent upon migrant labor. Wages are low and career ladders are perceived as low or non-existent. There is a need to increase awareness of existing ag training programs.

Aggregation of land is also costly and city land acquisition is not consistent or transparent. Some land is not suitable for agriculture. There also lacks efficient storage and distribution infrastructure. Support organizations for producers need further funding and policy support in order to increase industry capacity.

There are also issues with urban farming, which are often glossed over in conversations about its capacity as a tool for social change. One is the sense of white saviour complex which can hang heavy over some installations, where outsiders enter a community as 'teachers.' They may not consider the context in which they are operating, and do not necessarily work with the members of the communities they're 'helping.' This can create divides and tensions, rather than the desired spirit of cooperation and interdependence.



## Opportunities

Stakeholders throughout Detroit's food system are addressing localization challenges, investing in the growth and resiliency of the system.

The agricultural production sector of the Detroit City is poised for explosive growth. With current revenues of \$3.8M set to rise to \$260M with only 30% localization.

The Green Grocer Project, an initiative of DEGC, has provided financing and technical assistance to over 30 Detroit grocery stores since 2010, leveraging over \$40M in investment. The D2D program, in partnership with DEGC and the New Economy Initiative, connects large institutional, corporate, and public sector entities to local firms, products, and services. In 2013, D2D's 15 largest companies and institutions collectively spent over \$550M with Detroit companies, many in the food sector.

With the right approach it is possible to reconnect low and unskilled workers to the land, and change the image of agriculture so it is again palatable to a Detroit workforce. The core of such an approach could focus

on Detroiters reclaiming agriculture as part of a black identity, and promoting the wealth building potential of agriculture and land ownership to empower the community.

Organizations such as Detroit Black Community Food Security Network and Earthworks Urban Farm offer agricultural skills training as a workforce development tool for local residents to create community wealth through food sovereignty.

Existing programs could be expanded to meet the large workforce and skill building needs of the agricultural sector while providing training models that emphasize and address racism and social equity in the food system.

The Michigan Department of Agriculture and Rural Development's International Marketing Program is intended to assist Michigan food and agriculture businesses in developing trade opportunities to effectively export their products and achieve economic growth.