



Adversity to Advantage: New Vacant Land Uses in Flint

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Urban and Regional Planning Program, University of Michigan

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Executive Summary

In the last 40 years, industry, jobs, and people have left Flint, creating a city with thousands of vacant residential lots with a low likelihood of redevelopment. This project examines how potential new uses might be implemented to use Flint's increasingly abundant vacant land, focusing on uses only in current residential areas of the city. The plan addresses potential uses for vacant land in a "focus area," west of the Buick City industrial stretch in central Flint, which has the highest residential land vacancy rate in the city. Two smaller pockets of high vacancy east of the Flint River and Buick City are also included in this focus area. The uses covered in this plan are: urban agriculture (farming, biofuel crops, tree nurseries), waste management (deconstruction and composting), natural features enhancements (greenways and trails, expanding green waterfront amenities, and stormwater management), and small parks and community gardens.

Stewardship patterns and future vacancy

This plan relied on fieldwork to account for 1) existing stewardship, or the signs that residents are maintaining or beautifying vacant lots, and 2) estimates of future vacancy, by counting the number of dilapidated homes per block that will soon be demolished to create a new vacant lot. These counts revealed that:

- The best encouragement for stewardship is the existence of other stewarded lots.
- Future vacancy will reach over 40% per block in many parts of the focus area.

Matching potential uses to Flint's vacant residential land supply

An examination of the location criteria for potential uses revealed that the uses fall into two broad categories:

- Uses that need large sites (contiguous lots totaling at least one-half acre) and are suitable for highly vacant areas (over 50 percent of lots vacant per block).
- Uses that need small sites (contiguous lots adding up to less than one-half acre) and are suitable for moderately vacant areas (less than 50 percent of lots vacant per block).

This plan examined available vacant land by combining contiguous vacant lots into "sites" and applying use-specific criteria to identify and map optimal locations for each type of use. In addition to the location criteria, implementation criteria were also identified. The implementation criteria and the number of sites identified for each use are as follows:

Urban farms

- Number of potential sites: 94
- Implementation criteria: Financial viability; strong neighborhood relationships.

Biofuel crops

- Number of potential sites: 281
- Implementation Criteria: Expertise in biofuel crops; demand for product; existence of processing facilities.

Tree nurseries

- Number of potential sites: 56
- Implementation Criteria: Specialized knowledge about growing trees and shrubs.

Deconstruction

- Number of potential sites: 38
- Implementation Criteria: Availability of vacant structures to deconstruct; market for salvaged materials.

Composting

- Number of potential sites: 35
- Implementation Criteria: Supply of organic materials; demand for compost.

Natural features

- Number of potential sites: 100
- Implementation Criteria: Interest in expanding existing trails.

Community gardens and pocket parks

- Number of potential sites: 48
- Implementation Criteria: Resident interest.

Key points

The plan details the broad criteria for implementation of each use, identifies opportunities, discusses potential challenges, and proposes solutions for Flint that have proved successful in other cities. Specific points include:

- Significant urban agriculture already exists in Flint.
- Urban agriculture generally needs social programming or non-profit support to help launch and sustain activities.
- Urban farms benefit most from clustering sites.
- Potential biofuel crop sites face financial feasibility challenges, as this is a mostly untested urban land use with only early-stage pilot projects to consider for comparison.
- Deconstruction and composting are not currently supported by the city government.

- Deconstruction facilities will rely most on private interest and involvement, while the city government can undertake composting by adapting Flint's current yard waste collection programs.
- Opportunities to enhance natural features are plentiful along the Flint River, Flint Park Lake and Thread Lake, due to high rates of vacancy in these areas. Additionally, vacant land along proposed greenway routes can expand recreational assets in sections of Flint.
- Pocket parks and community gardens are not appropriate in areas of high vacancy where resident upkeep is likely to be a challenge. Despite the focus area's high vacancy rates, some blocks are nearly intact and residents can support parks or gardens to help stabilize physical conditions and home values in neighborhoods.

Recommendations for assembling sites

The Land Bank can promote new vacant land uses through the following approaches:

- *Determine target areas:* The Land Bank might capitalize on existing neighborhood strengths by focusing new uses and revitalization efforts in *targeted areas*.
- *Narrow the use focus:* Promote uses efficiently and in a manner that reduces the challenge of holding thousands of vacant properties by *narrowing the number of uses the Land Bank encourages* (example: put resources towards launching an urban farm cluster on sites in north-central Flint, rather than implementing multiple uses).
- *Strategically acquire lots:* Obtain lots proactively, through in-kind trades, property swaps, relocation assistance, or the promotion of stricter code enforcement policies in the city. Further, critically examine requests for side lot transfers – several potential sites were too small because of past transfers of side lots.
- *Rank potential properties for acquisition:* Assemble the necessary amount of land to promote uses through a *ranking system* that shows strategic parcels. This plan maps Land Bank holdings with three contiguous lots and shows the location of recent foreclosure properties and city-owned land that are contiguous with these Land Bank properties. Acquiring foreclosure properties and city-owned land adjacent to existing Land Bank holdings increases the viability of new uses, by reaching a half-acre size necessary for many of the uses discussed in this plan.

CHAPTER 1: The Need for a Plan

The city of Flint's continuing loss of residents and jobs means that demand for land has declined considerably and redevelopment of vacant land in residential areas is rare. This plan addresses the question of how best to reuse and maintain residential vacant land in order to improve the quality of life for those who live and work in Flint, increase stewardship of land in the most vacant areas of the city, and maximize the social, economic, and environmental worth of property.

As of April 2009, the Genesee County Land Bank Authority owned over 2,600 vacant lots in Flint.¹ Starting in 2004, the Land Bank has sold hundreds of vacant lots to adjacent owners, maintained hundreds more with the help of community-based organizations, and transferred numerous lots to the care of individuals, churches, and neighborhood-based groups. However, thousands of vacant residential lots remain in the care of the Land Bank, making basic maintenance difficult and transferring the land to new users an immense challenge.

As disinvestment and property abandonment increase vacancy in Flint, the Land Bank becomes the owner of more vacant property with an opportunity to help individuals and businesses use empty lots in new ways. Many people approach the Land Bank with ideas and requests for reuse of vacant parcels. Without a framework for making decisions about what land to offer for new uses, the Land Bank may be missing opportunities to help transform vacant sections of the city. The purpose of this plan is to examine potential land uses in order to provide the Land Bank with a decision-making framework.

Guiding Principles

- *Respect residents' revealed preferences about use of vacant land:* This plan aims to preserve rather than disrupt the informal patterns of land stewardship already going on in Flint.
- *Incorporate predicted future patterns of vacancy and development:* This plan takes into account projected increases in land vacancy that affect uses for any given site and encourages temporary uses in areas where development might occur, allowing land to be used without dissuading traditional development in the future.
- *Treat vacant land as an asset with the potential of transforming the city:* This plan takes a glass-half-full approach to Flint's vacant land by framing it as an asset rather than a detriment.

¹ Doug Weiland, *Genesee County Land Bank Factsheet*, (Flint: Genesee County Land Bank Authority, 2009).

- *Support uses for vacant land that may add to household income or reduce cost of living, leading to a higher quality of life for Flint residents.*

Plan Structure

The plan provides background on current vacant property characteristics, exploring several potential uses by explaining the location requirements for each and mapping potential sites in a selected “focus area” within the city. Many potential uses require large areas of vacant land, so this plan focuses on the areas that contain the highest concentration of Land Bank property and vacant residential land. The plan concludes by providing the Genesee County Land Bank with policy and procedure recommendations.

Chapter 2 shows the patterns of vacant land in Flint, including density of vacancy and the association of vacancy with race and income. Field surveys in the focus area revealed vacant land stewardship in the form of cared-for lots and future vacancy potential through counts of dilapidated homes. Proposals for redevelopment may constrain re-use of vacant land in some parts of the focus area.

The Genesee County Land Bank provided a list of proposed uses for vacant land. Chapters 3 through 6 review these uses in detail, providing a description of each use and location needs and criteria required for successful implementation. These uses include urban agriculture, waste management, natural features enhancements, and small site uses for community gardens and parks. The final chapter presents recommendations for alterations to Land Bank policies and procedures in order to strategically assemble the vacant land that new uses may require.

CHAPTER 2: Flint's Vacant Land - Patterns and Projections

Flint's population has significantly fallen over the past half century. In 1960, the city's population was at an all-time high of approximately 197,000.¹ As of 2007, the population was 114,500,² a drop of over 40%. Along with the population drop, the demand for housing has also fallen leaving a surplus of devalued housing. Over time, many of these structures have been abandoned, foreclosed upon, fallen into disrepair, and even demolished. As a result of these and other factors, the city of Flint now contains approximately 12,000 vacant lots – this means that 20%, or one in five residential parcels is vacant.³ This vacancy is not distributed evenly across the city, nor does vacancy affect all residents equally.

Vacancy in Flint:

- is concentrated in specific areas of the city, as shown in Figure 2.2
- involves areas of the city that have predominantly African American residents, as seen in Figure 2.3
- is more likely to affect low-income residents, as seen in Figure 2.4

As specified in Chapter 1, the goal of this plan is to provide a framework that will assist the Genesee County Land Bank Authority in making decisions about the use of some of the 2,600⁴ vacant residential lots it currently holds. Many of the potential uses for vacant land require multiple, contiguous vacant lots, which are most likely found in areas of the city with high numbers of vacant lots. Therefore, this plan focuses on those most vacant areas of the city, which also correspond to the areas with the greatest density of Land Bank owned property. However, this plan does not address commercial and industrial land. Figure 2.6 shows this plan's "focus area," the subject of field studies and recommendations for future uses. All vacant lots, owned by the Land Bank, private individuals, or the city, are included in the analysis of present and future vacancy as well as in the site recommendations for each use.

Chapter 1 also states that four principles guide this plan. The first guiding principle is that plan recommendations not disrupt resident's "revealed preferences" for use of vacant land. Preferences for use of vacant land are "revealed" by signs

¹ Census of Population, "1960 Number of Inhabitants-Volume I Part A Characteristics of the Population," Census of Population at U.S. Census Bureau, <http://www2.census.gov/prod2/decennial/documents/10107945v1pAch06.pdf>, Accessed 5, May 2009.

² American Community Survey, "2005 ACS Data and 2007 ACS Data," The American Community Survey at U.S. Census Bureau, <http://www.census.gov/acs/www/>, Accessed 1 April 2009.

³ Christina Kelly, personal communication (Interview by University of Michigan Land Study Team), (Flint: Genesee County Land Bank Authority, 2009).

⁴ *Ibid.*

of care or stewardship by area residents or community groups. Signs of stewardship may be as simple as maintenance such as mowing, removing garbage or cleaning up building debris, or may be more permanent, like planting vegetable gardens, or creating parks and playgrounds. This plan seeks to reinforce existing stewardship of vacant lots by including this as a factor in determining recommended sites for potential uses. Figure 2.8 shows the percentage of stewarded vacant lots in the focus area. This map shows that stewardship tends to cluster, suggesting that stewardship fosters further stewardship.

The second guiding principle is that use recommendations look to the future – by either encouraging temporary uses where development plans are currently proposed, or by recommending future uses that use projected increases in vacant land. Figure 2.13 identifies the existing planned developments, showing that there are substantial development plans clustered in the downtown area. Figure 2.10 shows the percentage of dilapidated structures per block (as determined by field study), and Figure 2.12 shows a map of future vacancy in Flint – incorporating both current vacancy, and dilapidated structures likely to be demolished. These maps are explained in greater detail below.

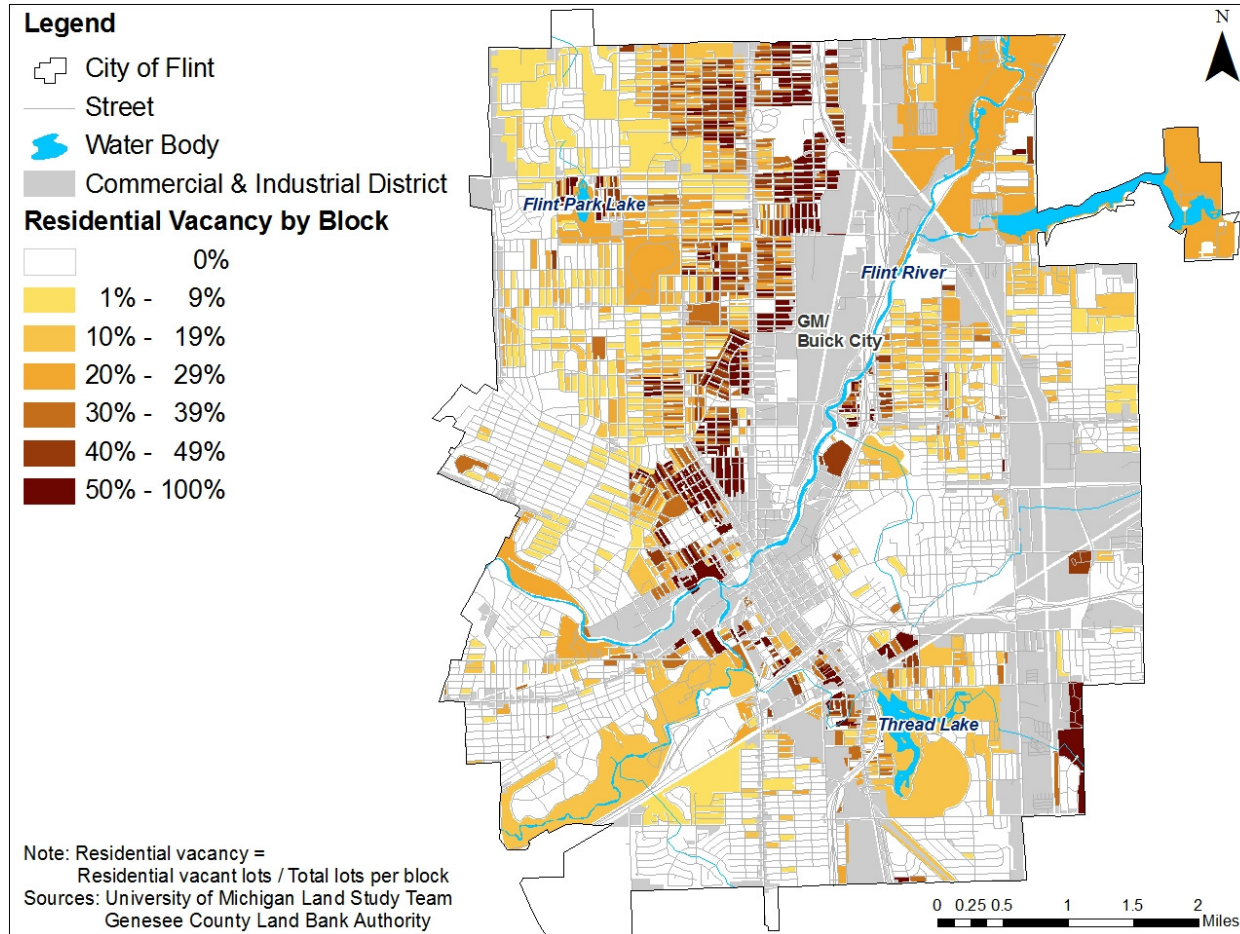
The city removes several dilapidated homes each week, leaving behind empty lots. As the Land Bank amasses more and more of these lots, new opportunities emerge to re-imagine the city with a variety of uses that can transform vacancy from a sign of adversity to a source for new amenities. The third and fourth guiding principles of this plan are incorporated into the body of this plan that both treats vacant land as an asset and strives to improve the quality of life for Flint residents by providing income-generating opportunities within city boundaries.



Photo Credit: Nate Geisler

Figure 2.1 Vacant land in Flint

Vacant Land Distribution



Although decreasing population and increasing vacancy affect the whole city, vacant lots are not distributed evenly across Flint. Figure 2.2 shows that the highest concentration of residential vacancy lies along the western edge of Buick City and the General Motors industrial area. Many of the blocks in this area are missing 50% of their original structures, and some blocks are almost completely bare of houses as is shown on the previous page in Figure 2.1.

Figure 2.2 Percent residential lot vacancy (by block)

Residents' Characteristics in Relation to Vacant Land Distribution

The two largest racial groups in Flint are African Americans (54%) and whites (40%),⁵ with other racial groups making up the remaining population. Figure 2.3 below demonstrates the clustering of these groups in different regions of the city, layered over percent residential lot vacancy. Concentrated vacancy in Flint disproportionately affects predominantly African American neighborhoods. However, smaller areas of concentrated vacancy exist in white neighborhoods to the east of the Flint River and southeast of downtown. No residential area in the city is fully immune to the tax foreclosure and abandonment of neighborhoods.

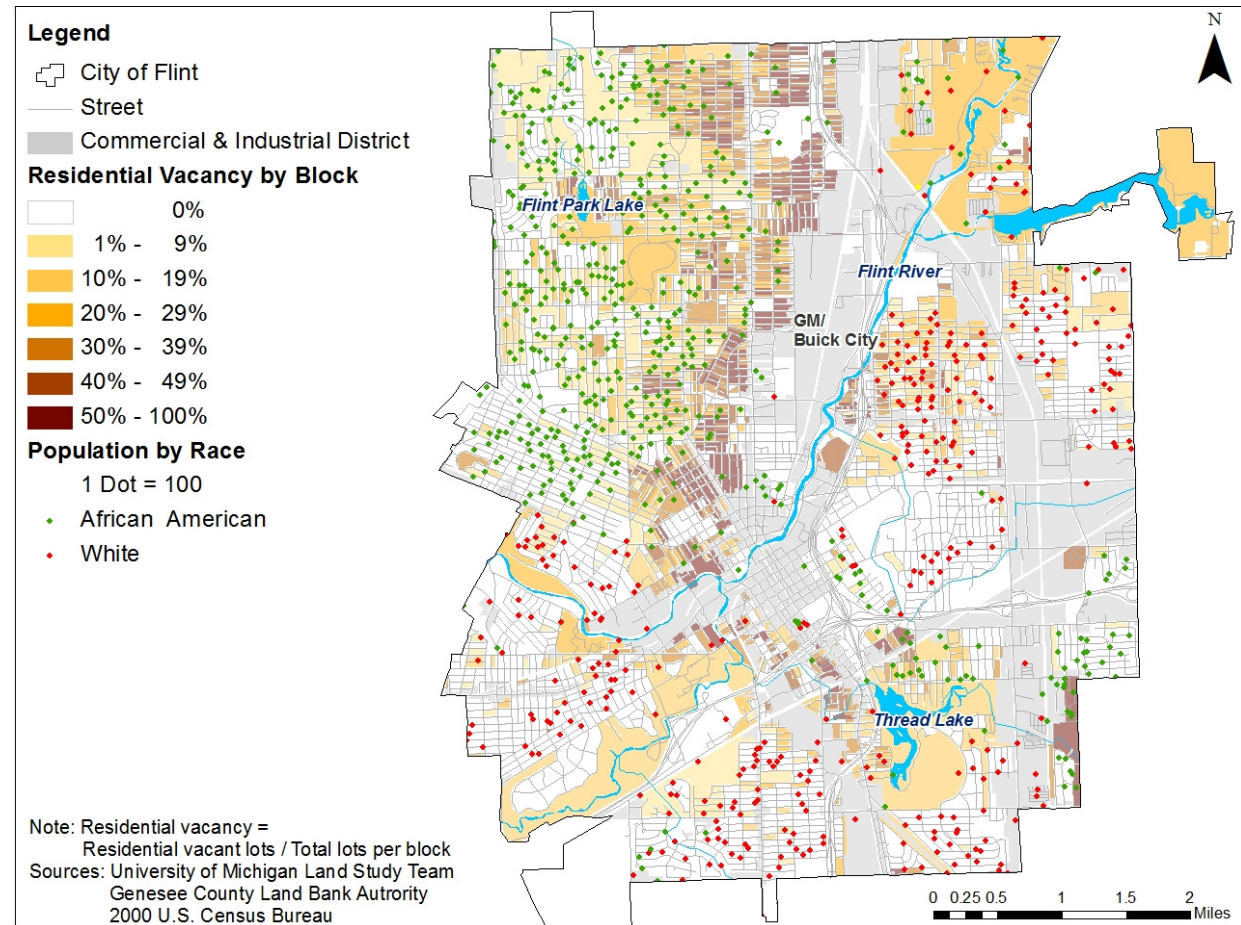
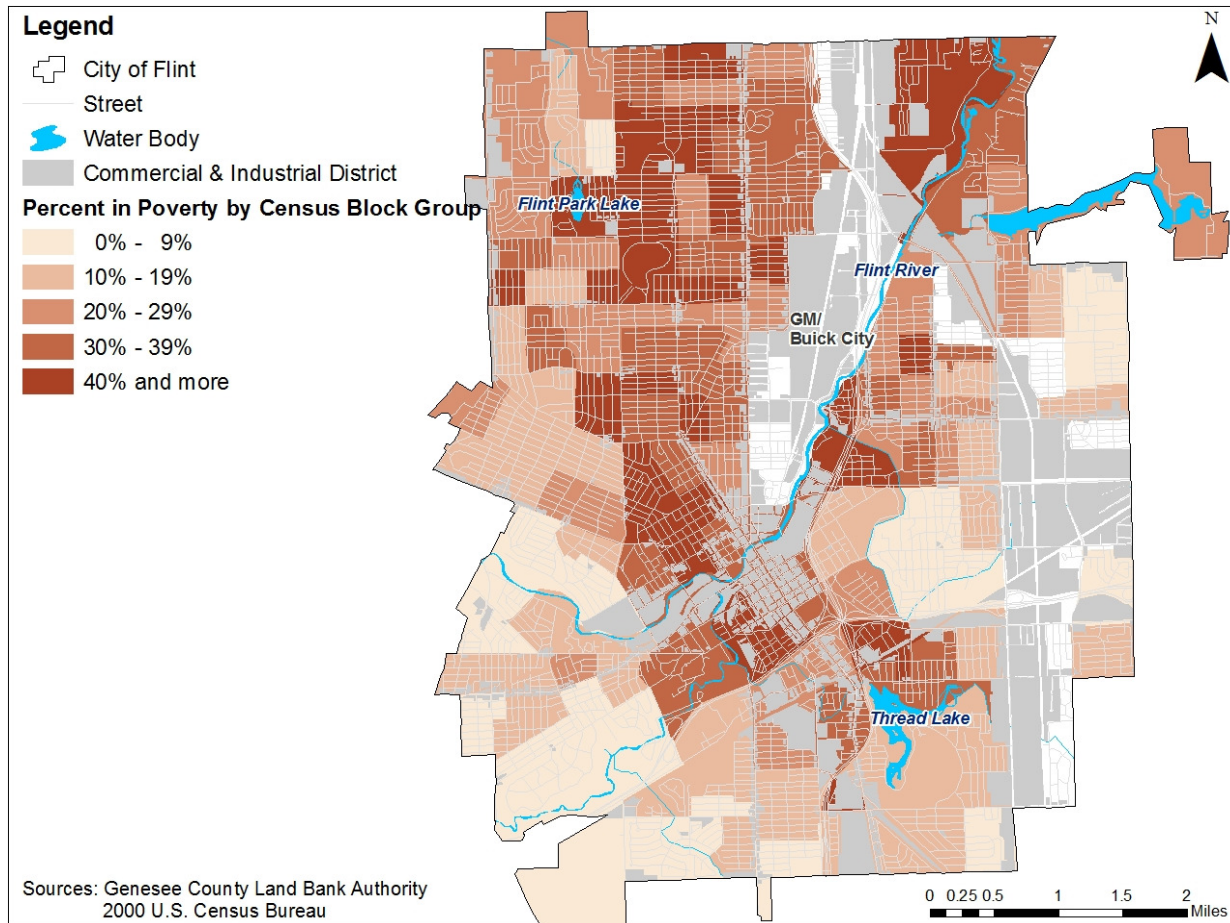


Figure 2.3 Race of population and percent residential lot vacancy

⁵ American Community Survey, "2005 ACS Data and 2007 ACS Data," The American Community Survey at U.S. Census Bureau, <http://www.census.gov/acs/www/>, Accessed 1 April 2009.



As of the 2005-2007 American Community Survey, approximately 26% of Flint's population lived in poverty.⁶ Flint's highest poverty areas are often (but not always) located in highly vacant areas. Figure 2.4 shows the concentration of impoverished Flint residents by census block group. Much of the concentrated poverty is located along a corridor running north-south through the city, as well as near Thread Lake in the southeast. This distribution closely matches vacancy patterns demonstrated by Figure 2.2; the most vacant areas of Flint are frequently the poorest.

Figure 2.4 Percent of residents living at or below the poverty line (by census block group⁷)

⁶ American Community Survey, "2005 ACS Data and 2007 ACS Data," The American Community Survey at U.S. Census Bureau, <http://www.census.gov/acs/www/>, Accessed 1 April 2009.

⁷ Census block groups are determined by the U.S. Bureau of the Census and are used to present characteristics of population and housing.

Plan Focus Area

Figures 2.5 and 2.6 show this plan's focus area – areas with a high density of residential vacant lots, and high rates of Land Bank property. As specified in the previous chapter, the goal of this plan is to create a framework that assists the Land Bank in making decisions about potential uses for vacant land. Therefore, this plan focuses on the most vacant areas of Flint, not the entire city.

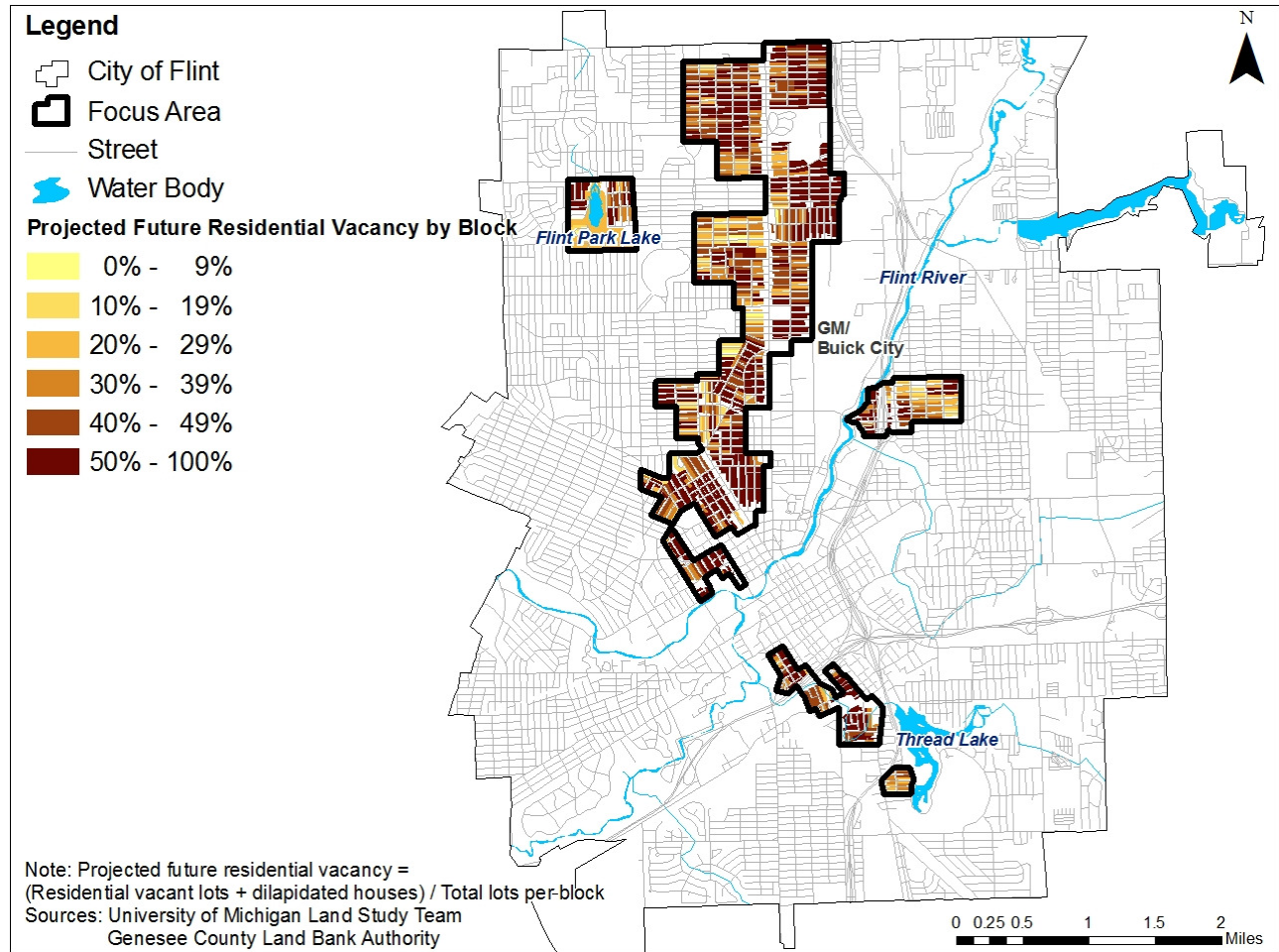


Figure 2.5 Residential lot vacancy within focus area

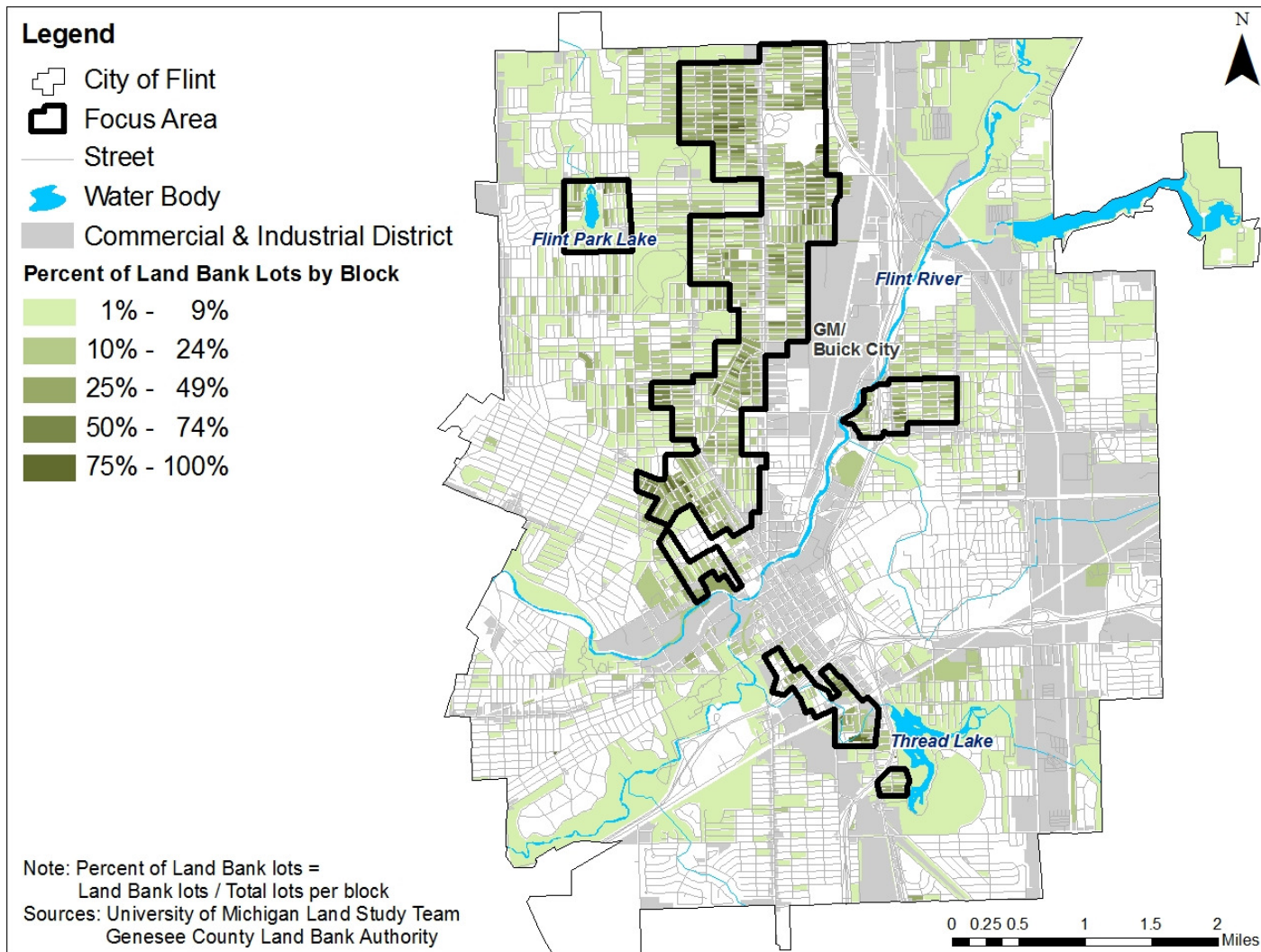


Figure 2.6 Density of Land Bank properties

The next part of this chapter reviews the results of field investigations in the focus area, which revealed current lot stewardship patterns and projected future residential lot vacancy in this area.

Stewardship of Vacant Lots and Projected Residential Vacancy

As identified in the chapter introduction, one of the principles of this plan is to support existing stewardship of vacant lots such as those shown in Figure 2.7. In this plan, stewardship is defined as caretaking of vacant lots by residents or community groups; such caretakers are frequently not the owners. Figure 2.8 shows the results of a street-by-street survey of the percentage of stewarded lots on each block within the focus area. Stewardship activities are clustered but do not correlate with density of vacant lots or poverty and race, implying that the best encouragement for lot stewardship may be the existence of other stewarded lots.



Figure 2.7 Stewarded lots in Flint

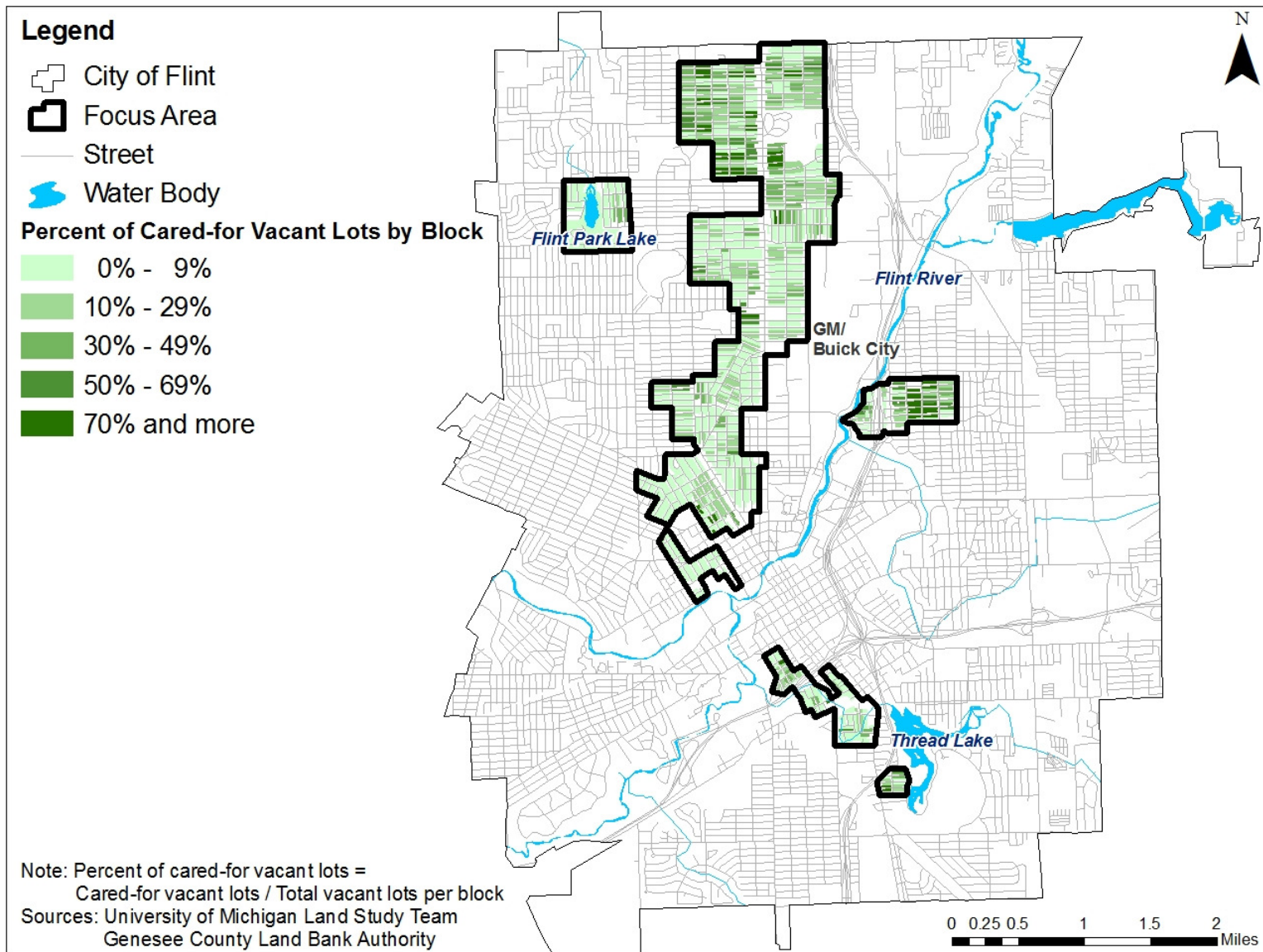


Figure 2.8 Rate of cared-for vacant lots within Flint focus area

Another trend that influences the recommendations in this plan is predicted future lot vacancy. One way to predict future residential lot vacancy is to determine levels of dilapidation in residential structures – houses that are past the point of repair and likely to be demolished like those shown in Figure 2.9 below. Figure 2.10 shows the rates of dilapidated housing in the focus area. This information can be used to estimate the likely increase in vacant land in the near future.



Photo Credit: Melissa Munsell

Figure 2.9 Dilapidated housing in Flint

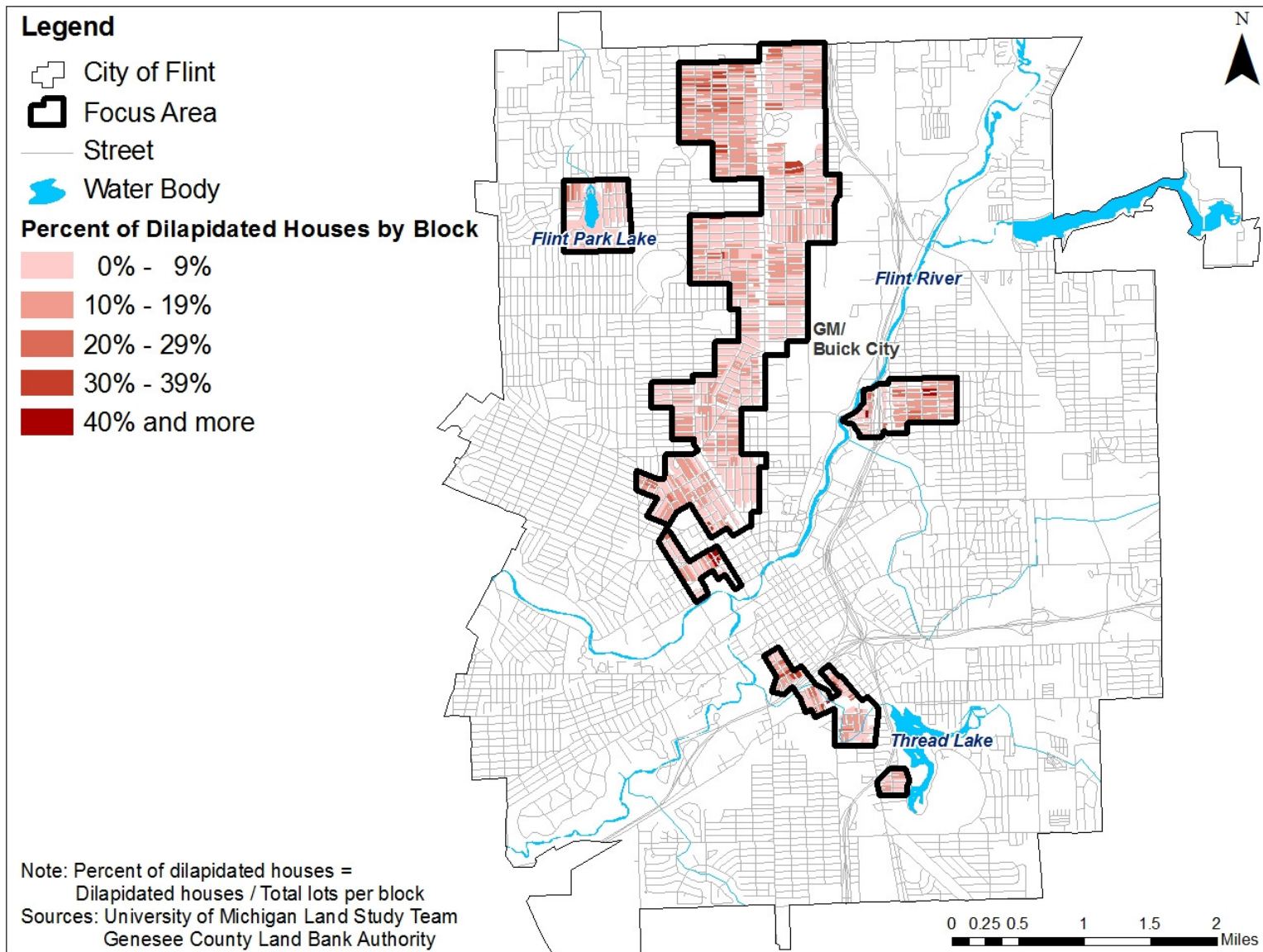


Figure 2.10 Dilapidated structures within the Flint focus area

Realized Vacancy Rate

Figure 2.12 shows predicted future lot vacancy; vacancy will increase significantly within the focus area. The site recommendations in this plan use both future vacancy projections and current stewardship levels to determine a “realized vacancy rate” as explained below in Figure 2.11.

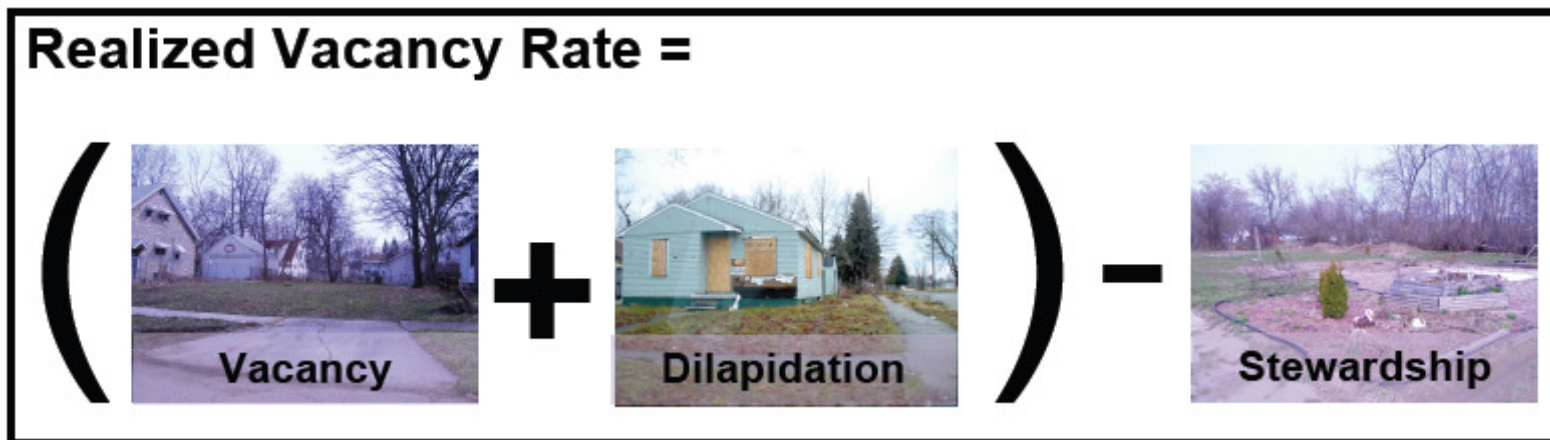


Figure 2.11 Realized vacancy rate

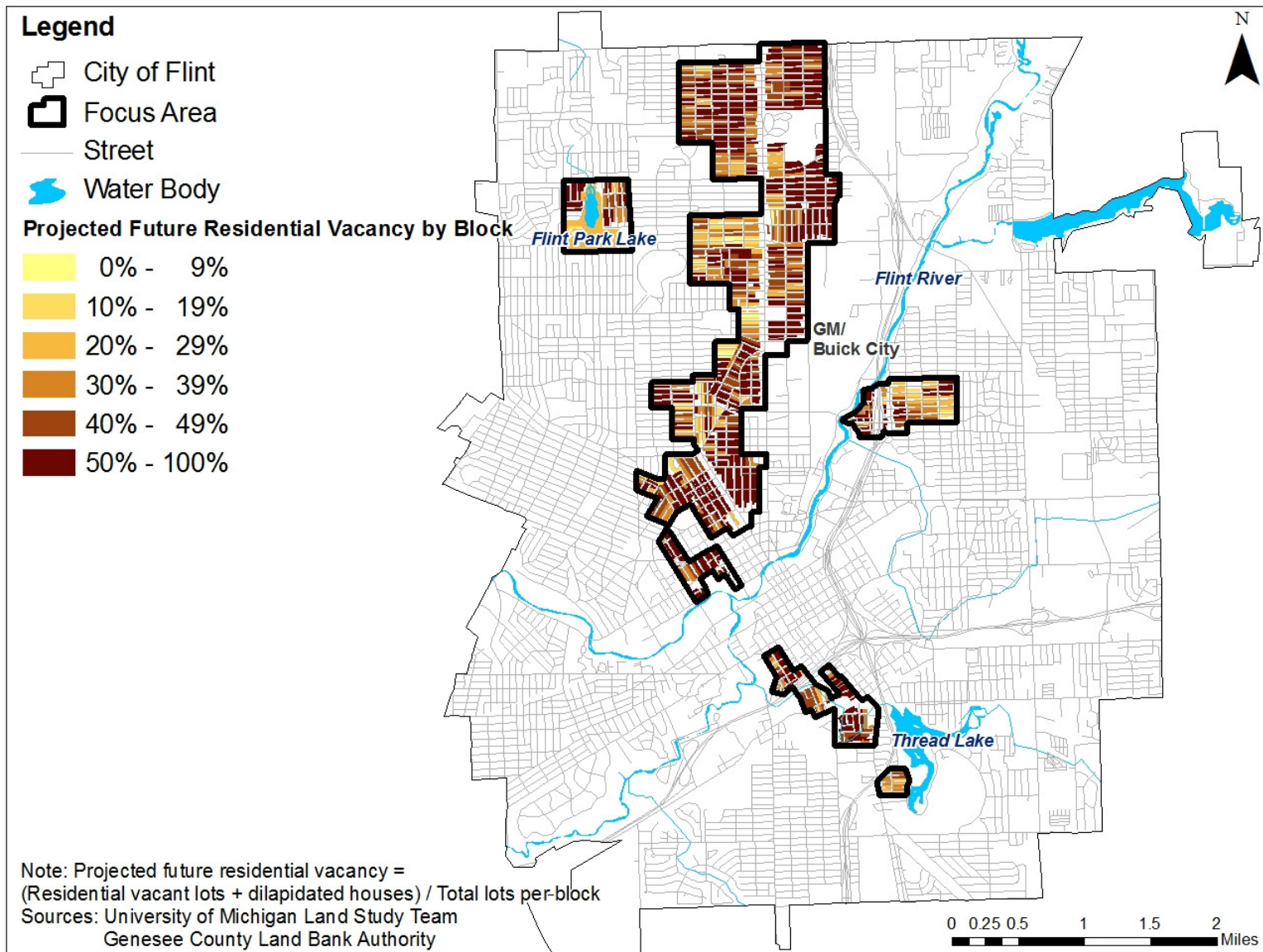


Figure 2.12 Projected future percent residential lot vacancy (by block)

Future Potential Redevelopment

Another principle that guides this plan is that recommended uses take into account forecasted future trends, including proposed redevelopment projects and potential increases in vacant land. Figure 2.13 shows redevelopment plans in the city of Flint; most cluster around downtown. The redevelopment plans are in various stages of completion, and most of them are not yet implemented. Nevertheless, this plan incorporates the boundaries of proposed redevelopments into site recommendations for potential uses.

The following chapters describe the geographic requirements for various alternative uses of vacant residential land. Potential sites are then identified by using these criteria along with the realized vacancy rate.

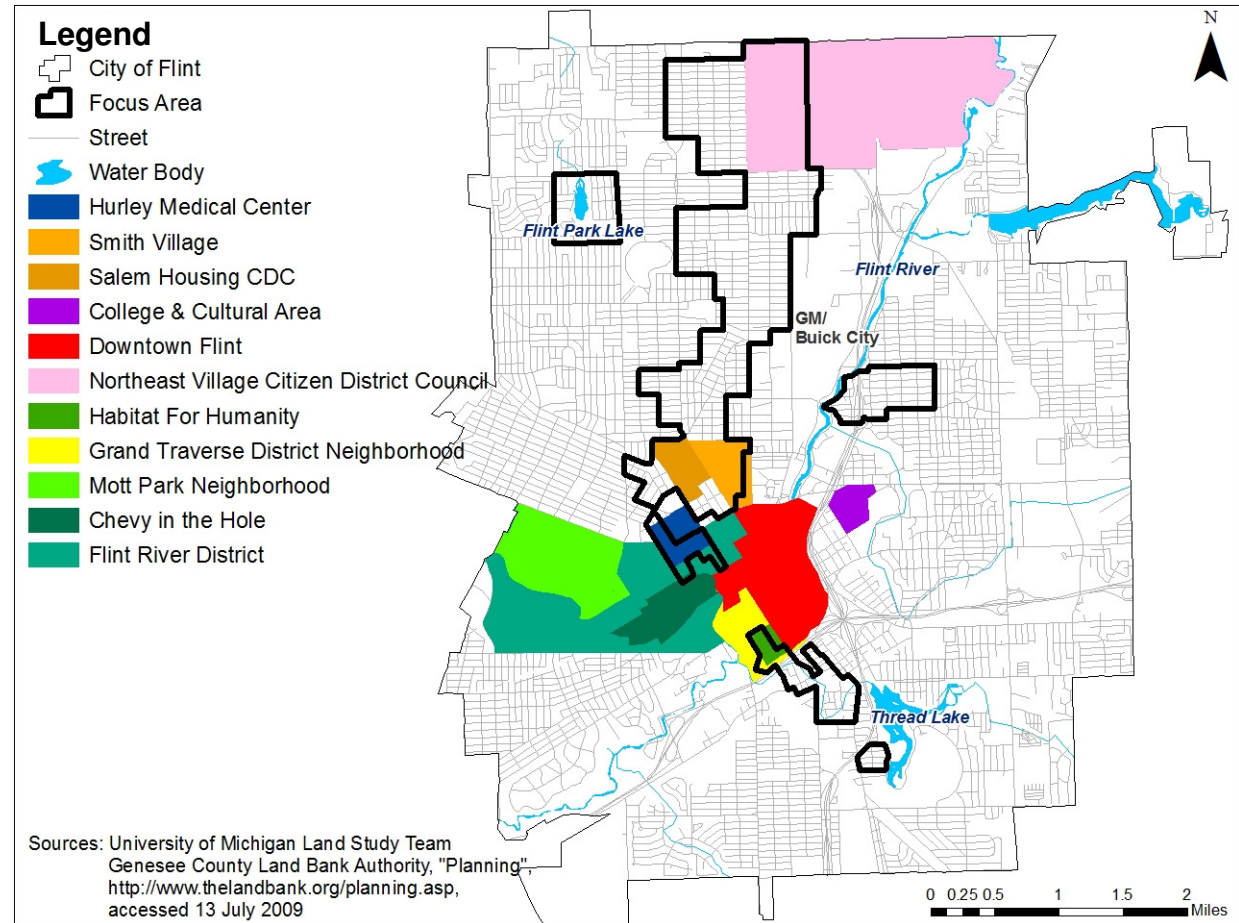


Figure 2.13 Areas with existing redevelopment plans

CHAPTER 3: Urban Agriculture

Urban agriculture is a potential use for vacant residential properties in many types of cities. This plan examines four types of agricultural activities as potential uses for vacant lots in Flint. This chapter explores urban farming, biofuel crop cultivation, and tree nurseries. Chapter 6 examines community gardens. Many Flint residents are already engaging in agricultural activity, as shown in Figure 3.1. Gardens grow in vacant lots in many parts of the city, and innovative programs invite youth and residents to grow local food in Flint.

Various types of urban agriculture succeed in cities, providing fresh produce, creating job and entrepreneurial opportunities, and cleaning up contaminated sites. Cities such as Pittsburgh, Boston, Brooklyn, and Chicago make room for food crops, non-food crops (such as biofuel crops and tree nurseries), and even small livestock. In addition, other cities incorporate agricultural activity through community gardens, community-supported agriculture (consumer contracts with local farmers), community kitchens (commercial kitchens used to process food crops), and many other arrangements and programs – creating a “civic agriculture,” agricultural activities focused on people, not just profits.¹



Figure 3.1 The red tractor of Ruth Avenue

This chapter addresses three potential urban agricultural uses, describes the benefits and implementation challenges for each potential use, and explains criteria for successful implementation. Each section ends with a map of feasible sites in the plan focus area, recommendations for evaluating site choices, and a list of potential obstacles to implementation and proposed solutions.

Urban agriculture uses may be feasible for several different types of vacant land in Flint:

- *Vacant residential lots:* Vacant residential lots exist in most neighborhoods in Flint, but as shown in Figure 2.2 this vacancy is not evenly distributed. Some configurations of vacant land work better for different types of urban agriculture. For example, in a neighborhood with just a few vacant parcels or in places where the vacant parcels

¹ Laura DeLind, “Place, work, and civic agriculture: Common fields for cultivation,” *Agriculture and Human Values*, 19 (2002), 217-224.

are not adjacent to one another, the Land Bank might encourage community gardens (see Chapter 6), while an area with many adjacent vacant lots is more suitable for larger scale agricultural activities such as tree nurseries.

- *Vacant industrial or commercial land:* Vacant industrial or commercial land borders many of Flint’s residential neighborhoods. While non-food agricultural activities can use contaminated vacant industrial land, this plan examines only residential areas of Flint.
- *Unused public land:* Closed school grounds and underutilized parks may be converted into urban agriculture sites, and link into existing “green infrastructure” across the city.² However, this plan does not examine such public lands for urban agriculture.

Urban Farming

Urban farming frequently combines social, economic, and environmental programs. Some urban farming projects give produce to social programs, such as soup kitchens and food pantries, and receive funding through donations and grants. Other urban farming projects support themselves by establishing a Community Supported Agriculture (CSA) system where individuals buy seasonal “shares” of the harvest; by selling at local farmer’s markets; and by selling to grocery stores and restaurants.³

Though many of these urban farming projects strive to make money, few projects exist without having a social program component.⁴ Most urban farming projects in the United States include social programs for youth empowerment, experiential education and entrepreneurship training, community building, or healthy eating and nutrition awareness. Even if the project does not explicitly identify social goals as a priority, urban



Photo credit: Melissa Munsell

Figure 3.2 Vacant lot cultivation

² *Oak Hill Community Design Charrette (2006)* prepared by the Cleveland Urban Design Collaborative, Kent State University.

³ Urban Farming, <http://www.urbanfarming.org/donate.htm>, Accessed 1 April 2009; Added Value (Brooklyn), <http://www.added-value.org>, Accessed 1 April 2009; The Greening of Detroit, <http://www.greeningofdetroit.com>, Accessed 1 April 2009; The Food Project, <http://www.thefoodproject.org>, Accessed 1 April 2009.

⁴ J. Kaufmann and M. Bailkey, “Farming Inside Cities: Entrepreneurial Urban Agriculture in the United States,” *Lincoln Institute of Land Policy Working Paper*, (2000).

farming such as the plot shown in Figure 3.2 can help fill in “food deserts” – places where the only available food sources may be fast food and party stores.⁵

Benefits

Urban farming projects may provide social, economic, and health benefits. Figure 3.3 identifies four potential benefits of urban farming defined by an established urban farming project in Boston. In Flint, urban farming may help to:

- *Rejuvenate vacant land:* Urban farming has the potential to put vacant and abandoned urban land to use.
- *Offer healthy food options:* Urban farming can supply residents with healthier food, especially in neighborhoods that lack grocery stores.⁶



The Food Project (Boston, MA), identifies four benefits of their work. These benefits are described as four types of sustainability:

- **Environmental Sustainability:** farming in a way that helps urban land renew itself
- **Social Sustainability:** farming in a way that creates healthy work habits
- **Financial Sustainability:** farming in a way that generates enough revenue to cover expenses
- **Community Sustainability:** farming in a way that builds long-term relationships with neighbors and organizations

Figure 3.3 Four types of sustainability of urban farming⁷

Implementation Criteria

Urban farms require more than soil, water, and sun to establish themselves. Urban farms require an area that can support:

⁵ T. Schwarz, *Re-Imagining a More Sustainable Cleveland*, (Cleveland: Cleveland Land Lab, 2008).

⁶ American Planning Association, “Policy Guide on Community and Regional Food Planning,” <http://www.planning.org/policy/guides/adopted/food.htm>, Accessed 1 May 2007.

⁷ The Food Project, “Urban Agriculture Manual,” Boston, <http://www.thefoodproject.org>, Accessed 1 April 2009.

- *Financial viability:* An urban farming project should be able to support itself financially, most likely through a combination of crop sales and social service funding. Urban projects require a market for the agricultural products. Additionally, a social service or education provider interested in integrating urban agriculture as part of its programming can further a farm's viability. The City of Flint has a centrally located Farmer's Market. The market emphasizes local and Michigan-grown fruits and vegetables and is beginning to sell produce grown year-round in hoop houses (such as the one pictured in Figure 3.4) on Flint's vacant lots.⁸
- *Good relationships:* Urban farms, unlike community gardens, do not necessarily make perfect neighbors. Agriculture is sometimes noisy and introduces unfamiliar odors to urban areas. Offering fresh produce to those living nearby, educating neighbors, and employing local youth improve perceptions and support for urban farms.

Location Criteria

Prospective urban farm sites should have:

- *Low probability of redevelopment:* The area should be unlikely to attract development within the next five years. Urban agriculture should be considered a long-term tenant, not a temporary use.⁹
- *Clustered sites:* If possible, cluster agricultural sites to enable sharing of tools, resources, knowledge, and labor.¹⁰
- *Sufficient land:* Urban farms need at least one half-acre of land, about one third of a city block. The lots need to be adjacent – either in a row or in a block.¹¹
- *Access to water:* While most sites within the city boundaries have access to city water lines, this is still an important consideration.
- *Sufficient sunlight:* The site should receive at least eight hours of sun per day from May through September. Mature trees may block sunlight and thus require selective removal.¹²



Figure 3.4 Hoop house on a vacant lot

⁸ The Food Project, "Urban Agriculture Manual," Boston, <http://www.thefoodproject.org>, Accessed 1 April 2009.

⁹ T. Schwarz, *Re-Imagining a More Sustainable Cleveland*, (Cleveland: Cleveland Land Lab, 2008); J. Kaufmann and M. Bailkey "Farming inside cities: entrepreneurial urban agriculture in the United States," *Lincoln Institute of Land Policy Working Paper*, (2000).

¹⁰ J. Kaufmann and M. Bailkey, "Farming Inside Cities: Entrepreneurial Urban Agriculture in the United States," *Lincoln Institute of Land Policy Working Paper*, (2000).

¹¹ The Food Project, "Urban Agriculture Manual," Boston, <http://www.thefoodproject.org>, Accessed 1 April 2009.

- *Uncontaminated soil*: Soil contamination should be at safe levels, and lead should be below 400-500 parts per million.¹³

Recommended Sites

Figure 3.5 shows recommended urban agriculture sites based on the considerations above, the plan principles described in Chapter 1, and specific criteria as follows:

- **Realized residential lot vacancy at least 60%**: Though area residents may enjoy the sight of agricultural fields, case studies of urban farms reveal conflicts over farm machinery and fertilizers. Therefore, this plan recommends urban agriculture sites located on blocks with at least 60% realized residential lot vacancy.¹⁴
- **Locations 500 feet away from industrial land**: Farms located away from possible pollution sources avoid contamination risks. This plan uses a 500-foot industrial buffer. However, sites within this distance may be suitable depending on the character of the soil, groundwater contamination, and the past effects of air pollution. In addition, sites within this buffer may be acceptable if the farm project uses alternative growing methods (several of which will be briefly discussed at the end of this section).¹⁵
- **Contiguous lots one-half acre or larger**: Gardens of many sizes exist in cities, however, very small urban farms may not justify the investment of time and equipment expense necessary for entrepreneurial farming. Though case studies show little agreement about the minimum site size required for successful urban farming, many manuals and plans recommend at least a ½ acre contiguous site.¹⁶

¹² *Ibid.*

¹³ T. Schwarz, *Re-Imagining a More Sustainable Cleveland*, (Cleveland: Cleveland Land Lab, 2008); J. Kaufmann and M. Bailkey, "Farming inside cities: entrepreneurial urban agriculture in the United States," *Lincoln Institute of Land Policy Working Paper*, (2000).

¹⁴ The Food Project, "Urban Agriculture Manual," Boston, <http://www.thefoodproject.org>, Accessed 1 April 2009; This plan calculates realized residential lot vacancy by subtracting the rate of stewardship (Figure 2.7) from the projected future residential lot vacancy (Figure 2.12).

¹⁵ Greensgrow Farms, <http://www.greengrow.org>, Accessed 11 June 2009.

¹⁶ J. Kaufmann and M. Bailkey, "Farming Inside Cities: Entrepreneurial Urban Agriculture in the United States," *Lincoln Institute of Land Policy Working Paper*, (2000); The Food Project, "Urban Agriculture Manual," Boston, <http://www.thefoodproject.org>, Accessed 1 April 2009.

Figure 3.5 shows the proposed urban agriculture sites in the focus area. Though the map shows a dense cluster of urban farm sites in the far south of the focus area, these sites may conflict with several planned redevelopment activity boundaries shown in Figure 2.13. A less dense collection of properties exists in the north part of the focus area. This cluster of sites falls largely within the I-475 Neighborhood Plan (see Figure 2.13), though a review of that plan document revealed no apparent conflicts in encouraging clustered urban agriculture in neighborhoods there.¹⁷ Therefore, this plan recommends an initial emphasis for using these northern sites for urban farming in Flint. All recommended uses overlapping potential redevelopment areas should be implemented with due consideration of the aims of any ongoing redevelopment plans and possible input from surrounding residents.

¹⁷ Wade Trim, *I-475 Neighborhood Plan*, (Detroit: Wade Trim, 2002).

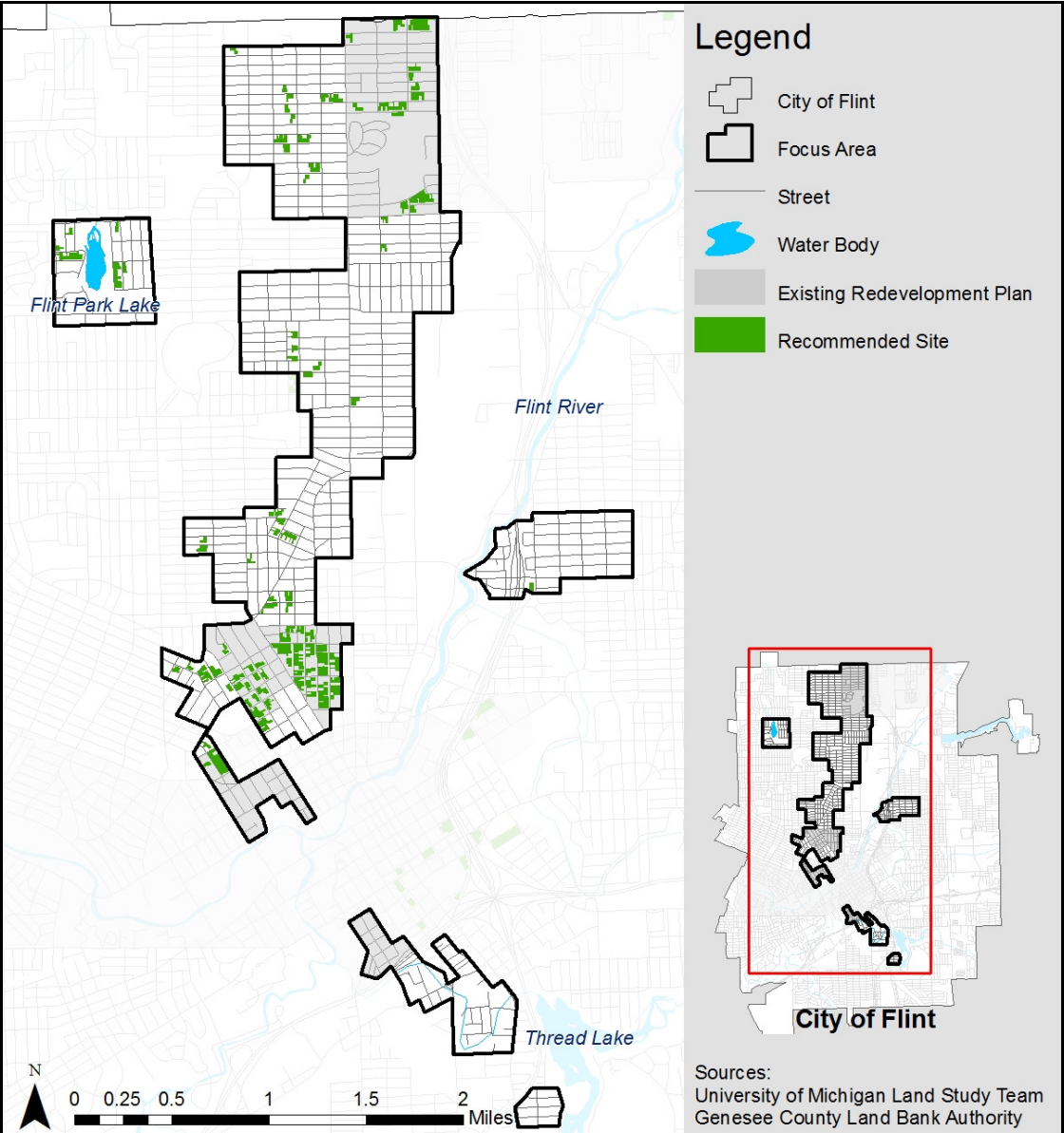


Figure 3.5 Potential urban farm sites in Flint focus area

Obstacles and Solutions

Farming is not a traditional city activity; city farmers may face a number of obstacles when creating and maintaining their agricultural sites. However, case studies from many metropolitan areas around the United States provide lessons that might support urban farming projects in Flint.

- *Urban farms are vulnerable to displacement.* In places such as Brooklyn, New York, and Philadelphia, Pennsylvania, urban farms have faced displacement when a developer offers a higher price for an agricultural lot.¹⁸ This can be a serious setback, especially when a farmer has spent time and money improving the soil or adding necessary infrastructure such as raised beds or sheds. Two potential solutions for addressing this particular vulnerability are:
 - Locate urban farms where development is unlikely. In Chapter 2, Figure 2.13 shows areas of existing redevelopment plans. Though each of these may incorporate agricultural activities into the proposed land uses, this plan recommends that urban farms locate elsewhere, when possible.
 - Make a farm “portable.” In cities where urban farming projects do not own agricultural land, farmers have sometimes transferred topsoil to new locations.¹⁹
- *Residents may be hostile towards farms and farming activities.* As mentioned above, farming is not a traditional urban activity, and residents may not understand farms and farming activities and may dislike agricultural machinery noise or fertilizer smell. Urban farms are also vulnerable to theft and vandalism. Other urban farming projects have solved these problems by strengthening social ties with surrounding residents.
 - Foster good relationships with neighborhood residents.
 - Support urban farmers by educating residents. The Genesee County Land Bank Authority and community partners could support an agricultural project by providing signage or hosting informational meetings.
 - Encourage private ownership. Urban farmers who have invested time and money in their project will be more likely to feel ownership and make investments to defend their property such as installing high fencing or a lockable shed.²⁰
- *Urban farms may be difficult to sustain financially.* Urban farming is no different from other agricultural businesses in that operations may face challenges in becoming profitable. However, urban farming presents an opportunity to incorporate social gains with financial gains.

¹⁸ Earth Celebrations, “The New York City Garden Preservation Coalition,” <http://www.earthcelebrations.com/gardens/gardens.html>, Accessed 18 May 2009.

¹⁹ The Food Project, “Urban Agriculture Manual,” Boston, <http://www.thefoodproject.org>, Accessed 1 April 2009.

²⁰ J. Kaufmann and M. Bailkey, “Farming Inside Cities: Entrepreneurial Urban Agriculture in the United States,” *Lincoln Institute of Land Policy Working Paper*, (2000).

- The financial return from urban agriculture combines earned revenue and grants for social programs. The social return (such as job training or increased access to healthy food) is often the primary focus of city farming projects. Successful projects break even or bring in revenues that slightly exceed operating costs. Projects that manage to cover operating costs with earned revenue can become less grant-dependent – which means they can spend less time looking for funding and more time farming.
- *Urban land may be contaminated or may be poor quality.* Most vacant urban land has been exposed to some type of contamination. Residential lots may have lead contamination from car exhaust and lead paint or other pollution from industrial or commercial activities.²¹
 - Get all growing soil tested. Though many residential areas in Flint are uncontaminated, all urban land should be tested before being used for food gardening.
 - Use raised beds made from masonry, wood, and even plastic wading pools, and fill with imported topsoil and compost.²²
 - Grow non-edible crops in potentially contaminated lots.

Biofuel Crops

While growing food crops is one option for cultivating vacant properties, planting biofuel crops that can be processed into fuel is an emerging use of vacant land. Growing biofuel crops on vacant property might transform unused vacant land into an economic asset and provide an opportunity for Flint residents to engage in the emerging “green economy.” Because biofuels are part of a complex science and emerging business sector, this section begins by presenting introductory information on biofuel crops and processing before examining the site requirements for biofuel crop cultivation.

Conventional crops used in biofuel production include: canola, sunflowers, soybeans, rapeseed, and wheat (for biodiesel), and corn, sugar beets and sugar cane (for ethanol). However, these crops are generally only financially viable in large-scale production in rural areas.²³ On the other hand, switchgrass is currently under intense study for its future fuel potential and is commonly referred to as a “second generation” cellulosic biofuel and may be economically feasible even on a small scale.

²¹ J. Kaufmann and M. Bailkey, “Farming Inside Cities: Entrepreneurial Urban Agriculture in the United States,” *Lincoln Institute of Land Policy Working Paper*, (2000); Environmental Justice Resource Center, *NAACP v. Engler*, (1997). This case revealed that the Genesee Power Station, fueled by demolition materials from older houses, had allowed lead emissions of 2.4 tons per year over African-American neighborhoods.

²² The Food Project, “Urban Agriculture Manual,” Boston, <http://www.thefoodproject.org>, Accessed 1 April 2009.

²³ Andrew Butcher, GTECH Strategies, Telephone Interview by N. Geisler (2 April 2009).

Benefits

Growing biofuel crops such as switchgrass on Flint's vacant residential land may:

- *Relieve the Land Bank of maintenance responsibilities:* Though a coordinating organization such as GTECH may need to establish biofuel crop cultivation, in time, individuals, community organizations or businesses may take over vacant land stewardship or ownership.
- *Bring new jobs to Flint:* Biofuel crop cultivation and processing potentially offer two types of employment:
 - research positions through Kettering University's designation as a Michigan Center of Energy Excellence
 - entrepreneurial or "hands-on" green jobs²⁴
- *Reduce costs and chemical use compared to many forms of agriculture:* Biofuel crops such as native switchgrass (see Figure 3.6) require little to no fertilizer, water, or use of machinery. This low-impact cultivation prevents negative effects on nearby neighbors.

²⁴ Jennifer Granholm, "King of Sweden Dedicates Biogas International Center of Energy Excellence Project in Flint: Press Release," <http://www.michigan.gov>, Accessed 26 September 2008; Andrew Butcher, GTECH Strategies, Telephone Interview by N. Geisler (2 April 2009).




Photo credit: www.treehugger.com

Switchgrass is:

- *Resistant:* Switchgrass is resistant to pests and diseases and requires less pesticide use than many crops.²⁵ Because so many vacant lots are near residential areas, reducing chemicals helps avoid health risks.
- *Native:* It is a naturally-occurring prairie grass, does not pose the problems associated with invasive species (e.g., overgrowing in areas and supplanting native species), and is suitable to Flint's climate.
- *Perennial:* It grows for as long as 10 years without the need for replanting, which means less maintenance and associated expenses.²⁶
- *Hardy:* It grows in less fertile and degraded soils - an advantage in Flint where urban vacant lots often have poor soil quality.
- *Productive:* Switchgrass can generate up to 1,000 gallons of biofuel per acre - compared to 665 gallons per acre from as sugar cane. (consolidate your sources into one footnote at the end of the list)

Yields can vary widely year to year, but strong varieties have shown yields from 1.5 to 5.6 tons per acre, and some small plot studies have yielded up to 11.5 dry tons per acre. By 2025, switchgrass could fetch as much as \$35 to \$50/dry ton.

Figure 3.6 Switchgrass is a potential urban biofuel crop²⁷

Implementation Criteria

A successful biofuel crops project would require more than land for cultivation. Further requirements include:

- *Biofuel crops expertise:* While some sources of biofuel such as switchgrass only require an initial planting to grow perennially for 10 to 15 years, successful cultivation of plants still requires individuals or institutions that can assist with establishing and harvesting crops.

²⁵ D. Bransby, "Switchgrass Profile," Auburn University, <http://bioenergy.ornl.gov>, Accessed 15 March 2009.

²⁶ Institute of Agriculture, "Switchgrass Science," University of Tennessee, <http://taes.utk.edu>, Accessed 1 March 2009.

²⁷ SECO State Energy Conservation Office, "Crops for Fuel," <http://www.seco.cpa.state.tx.us>, Accessed 3 May 2009; J. D. Berdahl et al. Mandan, North Dakota, 2001. "Biomass yield of diverse switchgrass cultivars and experimental strains in western North Dakota," *Agronomy*, 97 (2005), 549-555; V. Bush et al. Golden Field Office, Golden, Colorado, 2001. "Evaluation of switchgrass as a co-firing fuel in the Southeast," *DOE Cooperative Agreement*, (2001); R. Nelson "Cellulosic ethanol/bioethanol in Kansas" (prepared for Kansas Energy Council Biomass Committee), (15 May 2007); C. Ferland, *Switchgrass for Co-Generation Fuel Feasibility* (Center for Agribusiness and Economic Development, 2001).

- *Demand for product:* Demand already exists for the biofuel that would be produced by a crop such as switchgrass. Vehicles running on gasoline can currently handle a 10 percent blend of ethanol that is distributed by many filling stations, and cars can operate on higher percent ethanol mixtures without the need for replacing conventional motor systems.²⁸
- *Processing facilities:* Currently, only conventional biofuel crops such as corn are processed in Michigan. Processing switchgrass, a crop more easily grown in urban settings like Flint, requires special processing technology. The state of Michigan is promoting additional refineries, and the Environmental Protection Agency has identified several suitable potential biorefinery sites on previously industrial properties in Flint and Genesee County (shown circled in Figure 3.7). Limited, small-scale ethanol processing of plant sugars can produce up to 80 gallons in a full day (cellulosic processing may not yield the same amount). However, home ethanol production requires a federal permit from the Alcohol and Tobacco Tax and Trade Bureau.²⁹

²⁸ Minnesota Department of Agriculture & Renewable Fuels Association, "E20: The feasibility of 20 percent ethanol blends by volume as a motor fuel," <http://www.mda.state.mn.us>, Accessed 20 February 2009.

²⁹ Michigan Department of Agriculture, "Michigan Commission of Agriculture Recommends Three Renaissance Zones: Represents \$45.8 million in investment and at least 190 jobs: Press Release," <http://www.michigan.gov>, Accessed April 8 2009; T. Schwarz, *Re-Imagining a More Sustainable Cleveland*, (Cleveland: Cleveland Land Lab, 2008); Alcohol and Tobacco Tax and Trade Bureau, <http://www.ttb.gov/spirits/index.shtml>, Accessed 1 March 2009.

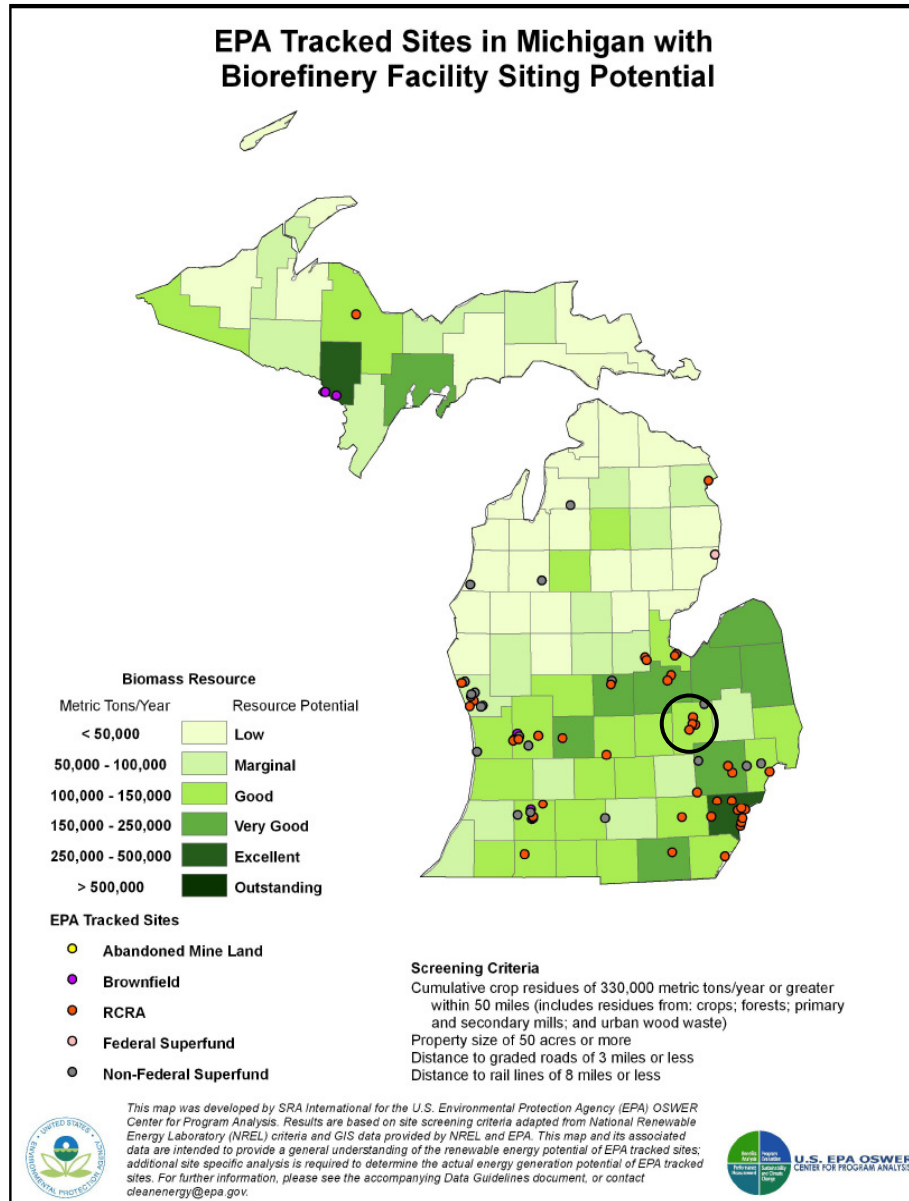


Figure 3.7 Michigan and Genesee County with potential biorefining sites circled

Growth Through Energy and Community Health (GTECH)

Founded in 2007 in Pittsburgh, Pennsylvania, GTECH merges community development and sustainability by using vacant land to extend the “green economy” into marginalized neighborhoods.



Photo Credit: GTECH Strategies

“Our idea is to enhance community redevelopment by engaging in three mutually-beneficial activities: reclaiming and revitalizing vacant land; implementing innovative green strategies such as planting bio-fuel; and providing education and green collar job training services for urban youth, entry level workers, and residents of economically distressed communities in greater Pittsburgh.” (*Andrew Butcher, GTECH Strategies*)

- GTECH does not currently draw a profit from small-scale biofuel production. However, by continually increasing the scale of production, economic feasibility improves year after year.
- GTECH partners with the Student Conservation Corps to provide “green jobs” training for youth, Penn State University Cooperative Extension to increase the scale of biofuel projects, and Fossil Free Fuel (a local Pittsburgh business) for assistance with fuel processing.
- GTECH transfers responsibility for site maintenance to area residents and no longer directly coordinates three of the original eight biofuel sites.

Figure 3.8 Biofuel cultivation in Pittsburgh, PA³⁰

³⁰ Andrew Butcher, GTECH Strategies, Telephone Interview by N. Geisler (2 April 2009).

Location Criteria

Biofuel crops can be grown and processed at either a commercial (large) or neighborhood (small) scale; each scale requires different amounts of land to be successful. Commercial scale biofuel crop production and processing can require 50 or more acres of land.³¹ However, since the land potentially available in Flint is generally made up of non-contiguous, scattered vacant lots, biofuel production would occur at a smaller neighborhood scale. Processing requirements for this type of smaller scale operation include:

- *Sufficient land:* Lot area can vary greatly for growing biofuel crops. In Pittsburgh, test sites for biofuel crops occupy lots less than one acre to sites over six acres.³²
- *Access to water:* While most sites within city boundaries have access to water lines, this remains a consideration.
- *Secure storage:* Biofuel crop harvests need to be stored prior to refining.

Recommended Sites

Figure 3.9 shows recommended biofuel crop sites based on the considerations above, the plan principles described in Chapter 1 and specific location criteria as follows:

- **Realized residential lot vacancy at least 60%:** Though switchgrass is a low-maintenance crop, cultivated fields can appear overgrown or unkempt. Therefore, this plan recommends potential biofuel crop sites located on blocks with at least 60% realized residential lot vacancy.³³
- **Contiguous lots one half acre or larger:** Though biofuel crops such as switchgrass may be grown in very small areas, studies show that when a biodiesel crop is grown on smaller lots, costs per acre may exceed revenues. Therefore, this plan recommends a minimum site size of ½ acre.

Figure 3.9 shows the proposed biofuel crop cultivation sites in the focus area. This map reveals large swaths in the Flint focus area satisfying criteria for this form of urban agriculture. The eastern edge of the focus area, along the Buick City industrial corridor possesses many suitable properties for growing biofuel crops. Since this area is near industrial land, it is especially suited for switchgrass cultivation because unlike food crops, which may require a 500-foot buffer from industrial lands, switchgrass does not.

³¹ T. Schwarz, *Re-Imagining a More Sustainable Cleveland*, (Cleveland: Cleveland Land Lab, 2008).

³² Andrew Butcher, GTECH Strategies (Telephone Interview by Nathan Geisler), (Pittsburgh: GTECH, 2 April 2009).

³³ This plan calculates realized residential lot vacancy by subtracting the rate of cared-for vacant lots (Figure 2.8) from the projected future residential lot vacancy (Figure 2.12).

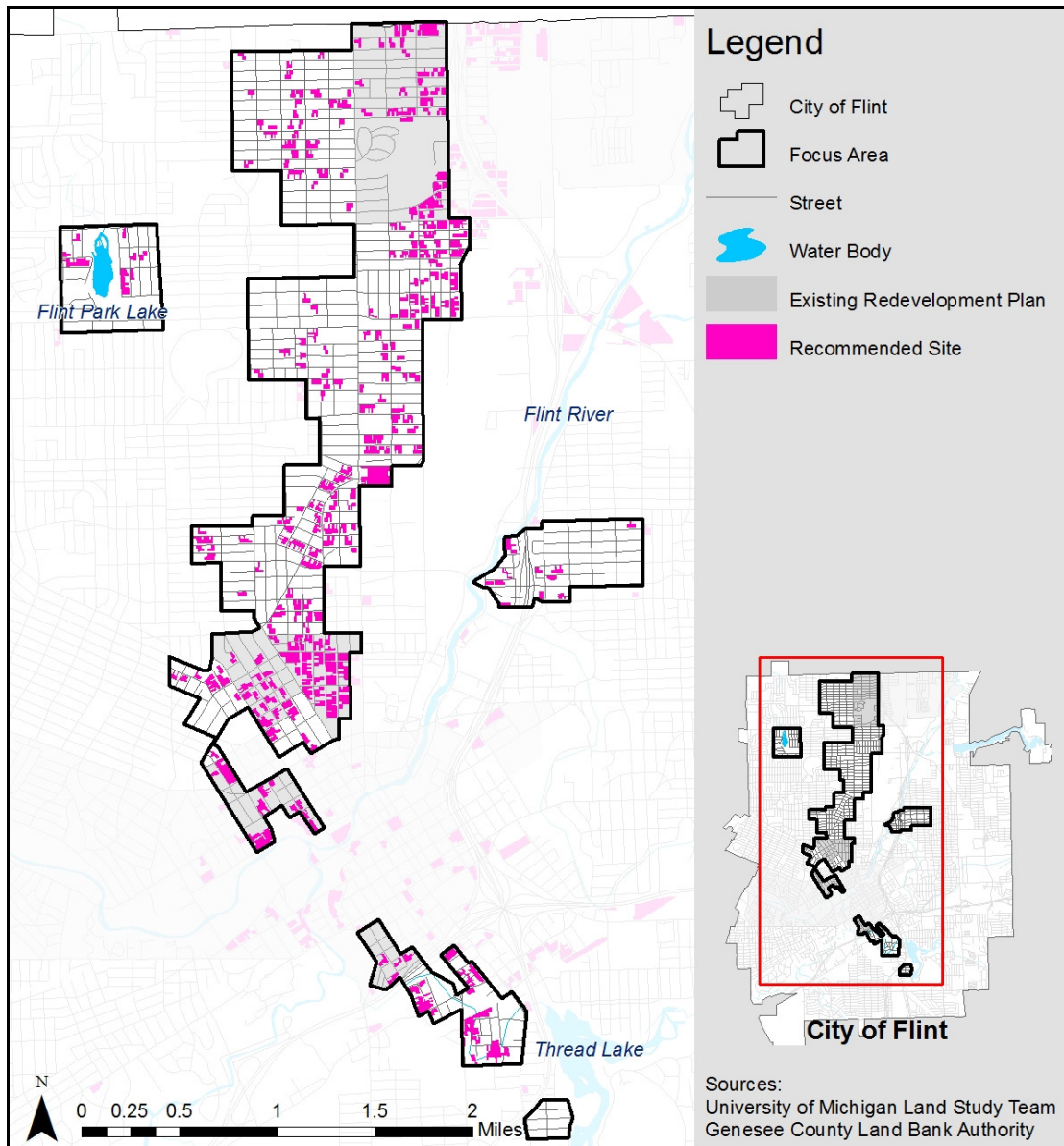


Figure 3.9 Potential biofuel crop cultivation sites in the Flint focus area

Obstacles and Solutions

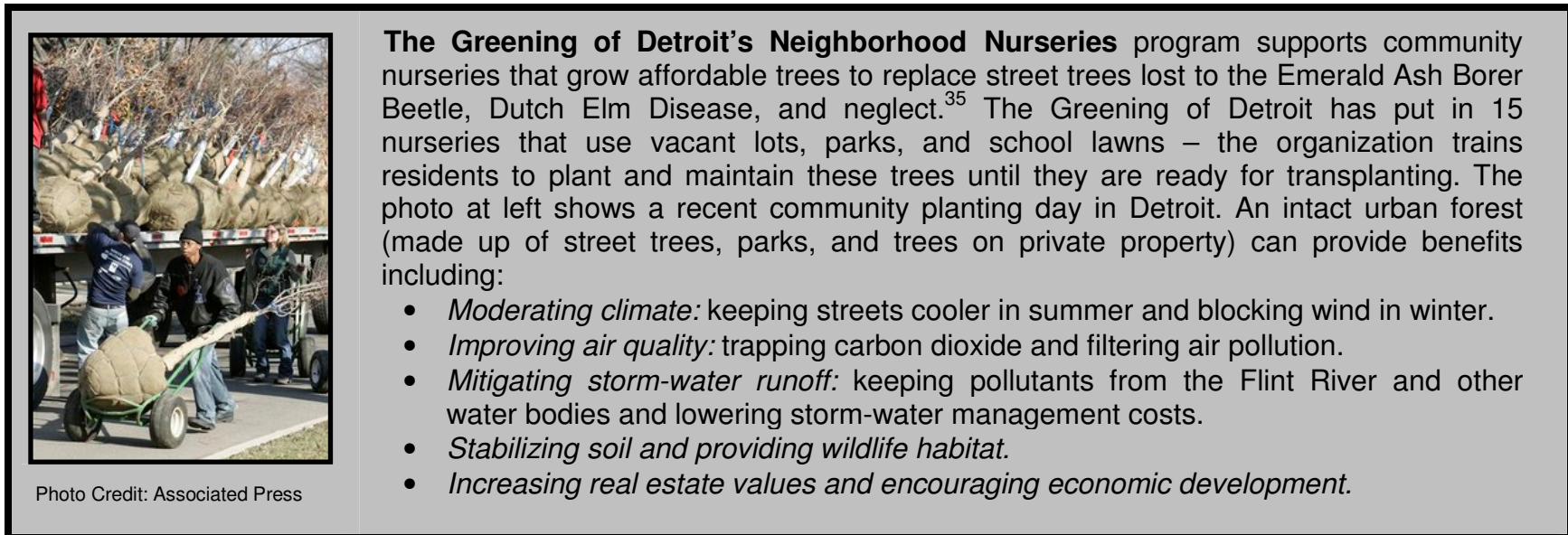
Like farming, growing biofuel crops is not a traditional city activity, and starting and sustaining a biofuel crop project may face challenges.

- *Small-scale projects may not be profitable.* Small-scale production of biofuel crops does not guarantee financial success in urban areas like Flint. While this section describes the benefits of cultivating crops such as switchgrass, costs are significant and may exceed revenue, especially on small sites. In other cities, pilot projects from grant-funded, start-up non-profits operate most biofuel crop production.
- *Cellulosic biofuels are an emerging technology.* Ongoing research shows great potential in deriving ethanol from plants such as switchgrass. However, no commercial cellulosic processing plants now exist in Michigan, and research has not yet provided a processing method that is financially sustainable for small scale producers. Currently, switchgrass and other cellulosic crops may be used as a co-firing fuel with coal in electricity generation.³⁴
- *Residents may dislike the look of biofuel agriculture.* Area residents may view agricultural sites filled with tall prairie grasses as unkempt lots rather than biofuel crop sites. Clear signage and educational materials may help residents understand and accept the project.

Tree Nurseries

A tree nursery propagates and grows young trees to a transportable size for replanting. Nursery owners produce a variety of trees (ornamental and fruit trees) and generate income from sale of the trees. Urban nurseries may include grower/retail nurseries that grow trees to sell to individual customers, wholesale nurseries that grow trees to sell to other nurseries, or non-profit organizations (see Figure 3.10). Tree nurseries may include fields and greenhouses that protect very young seedlings from harsh weather.

³⁴ R. Nelson “Cellulosic ethanol/bioethanol in Kansas” (prepared for Kansas Energy Council Biomass Committee), (May 15 2007)



The Greening of Detroit's Neighborhood Nurseries program supports community nurseries that grow affordable trees to replace street trees lost to the Emerald Ash Borer Beetle, Dutch Elm Disease, and neglect.³⁵ The Greening of Detroit has put in 15 nurseries that use vacant lots, parks, and school lawns – the organization trains residents to plant and maintain these trees until they are ready for transplanting. The photo at left shows a recent community planting day in Detroit. An intact urban forest (made up of street trees, parks, and trees on private property) can provide benefits including:

- *Moderating climate:* keeping streets cooler in summer and blocking wind in winter.
- *Improving air quality:* trapping carbon dioxide and filtering air pollution.
- *Mitigating storm-water runoff:* keeping pollutants from the Flint River and other water bodies and lowering storm-water management costs.
- *Stabilizing soil and providing wildlife habitat.*
- *Increasing real estate values and encouraging economic development.*

Figure 3.10 The Greening of Detroit neighborhood nurseries

Benefits

Urban tree nurseries can provide social, economic and environmental benefits. Using vacant residential land for tree nurseries in Flint could:

- *Improve the environment:* Trees can improve environmental conditions by preventing soil erosion and increasing soil fertility, while also providing wind-breaks and cleaner air.³⁶
- *Increase employment:* Nurseries of all types are labor intensive and may provide both year-round and seasonal employment.
- *Restore urban forests:* Nurseries can work in partnership with non-profit organizations and municipal offices to restore trees along the street, in parks and throughout the city (see Figure 3.10).³⁷

³⁵ The Greening of Detroit, "Vacant Lot Program," http://www.greeningofdetroit.com/3_1_featured_projects.php?link_id=1194537199, Accessed 1 August 2009.

³⁶ Technical Centre for Agricultural and Rural Cooperation, *Establishing a Tree Nursery*, (AJ Wageningen, The Netherlands: CTA, 2007).

³⁷ John F. Dwyer et al. "Assessing the benefits and costs of the urban forest", *Journal of Arboriculture*, 18 no. 5 (1992), 227-234.

Implementation Criteria

Urban nurseries require more than appropriate sites to thrive. An urban nursery needs:

- *Specialized knowledge:* Nursery crop production may require skill in growing trees from seeds or saplings.³⁸

Location Criteria

Prospective urban tree nursery sites should have:

- *Proper growing conditions:* Tree nurseries need proper conditions to thrive such as well-drained, high quality topsoil and a full day (approximately 8 hours) of direct sunlight.³⁹
- *On major roads:* To make nurseries visible to potential retail buyers, businesses should locate along major roads.

Recommended Sites

Figure 3.11 shows recommended tree nursery sites based on the considerations above, the plan principles described in Chapter 1 and site criteria as follows:

- ***Realized residential lot vacancy at least 40%:*** This means that fewer than 60% of the residential lots are occupied with houses.⁴⁰
- ***Locations on major roads:*** Tree nurseries on major roads (roads with 40mph speeds or higher) in order to attract potential customers.⁴¹
- ***Contiguous lots one acre or larger:*** Minimum lot sizes accommodate the growth of the tree canopy. Lots smaller than one acre will have only a few trees and will likely not be financially viable.⁴²

³⁸ AgVentures, "Agriculture Business Profiles: Commercial Tree Nursery Industry,"

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/agdex1370/\\$file/275_830-1.pdf?OpenElement](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/agdex1370/$file/275_830-1.pdf?OpenElement), Accessed 1 March 2009.

³⁹ The Food and Agriculture Organization of the United Nations, "Planning a tree nursery - introduction: choosing the site,"

<http://www.fao.org/docrep/006/ad228e/AD228E03.htm>, Accessed 1 March 2009.

⁴⁰ This plan calculates realized residential lot vacancy by subtracting the rate of stewardship (Figure 2.7) from the projected future residential lot vacancy (Figure 2.12).

⁴¹ Caleb Basweti, *Tree nursery trade in urban and peri-urban areas*, (Nairobi, Kenya: Regional Land Management Unit, 2001).

⁴² The Food and Agriculture Organization of the United Nations, "Check-list for nursery trees not growing well,"

<http://www.fao.org/docrep/006/ad228e/AD228E03.htm>, Accessed 1 March 2009.

Most recommended tree nursery sites in Figure 3.11 are located in the northern and southern parts of the Flint focus area. Because plans for redevelopment exist in the southern part of the focus area, the northern cluster of sites is best suited for tree nurseries, though flexibility of redevelopment activities may support this use in the southern cluster.

Obstacles and Solutions

Although tree nurseries can offer a number of benefits as described above, there are some issues to consider when introducing a tree nursery to an urban area:

- *Tree nurseries may require a very large area of land.* Though this plan suggests one acre as a minimum lot size for an urban tree nursery, tree nurseries can be several acres in order to grow enough stock to be profitable. However, the Greening of Detroit's tree planting program often uses trees grown in small "neighborhood nurseries," indicating that (similar to the other forms of urban agriculture discussed in this chapter) urban tree nurseries may best succeed when linked to a source of non-profit or social service funding.⁴³

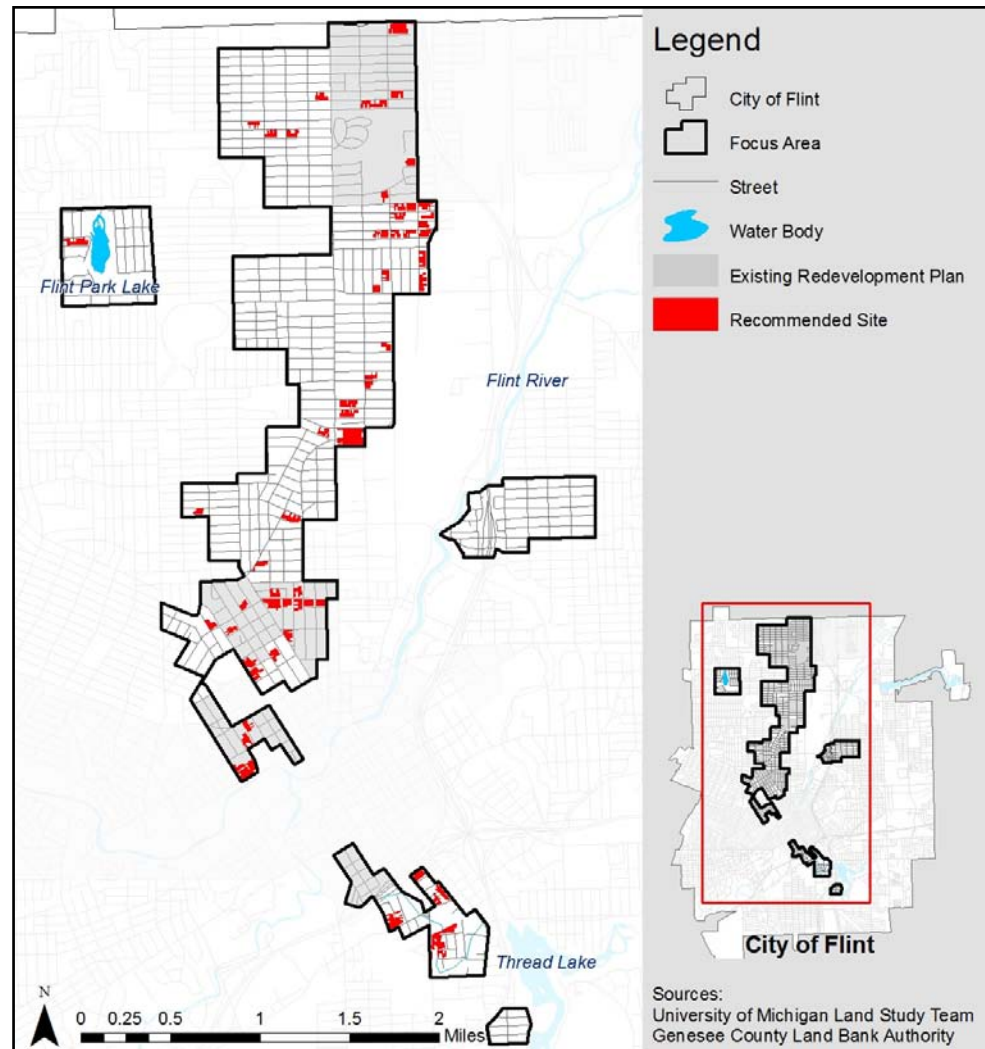


Figure 3.11 Potential tree nursery sites in the Flint focus area

⁴³ The Greening of Detroit, "Trees," http://www.greeningofdetroit.com/5_1_trees.php, Accessed 6 August 2009.

- *Growing trees requires irrigation, and may pose erosion and pollution risks.* When tree nurseries exist in a rural area, available water sources (such as a stream or well) mean inexpensive access. However, in Flint, an urban tree nursery would likely have access to only municipal water supplies, which may be costly. Water-saving techniques such as trickle irrigation may utilize up to 90% less than other irrigation methods. In addition, irrigation techniques may cause runoff of fertilizer and pesticides, and may erode soil from the site. Choosing a site that has only a moderate slope, no more than a 4% grade, and installing buffer strips of grass or other plantings at the margins of the site helps prevent runoff and soil loss.⁴⁴
- *Trees take years to reach saleable dimensions; therefore, it may be years before the nursery may sell products.* Landscaping trees often require a minimum two-inch trunk diameter for municipalities to purchase them. Nurseries may face a four-year wait before being able to sell a tree. Therefore, those planning on implementing a tree nursery should plan for several years without income from tree sales.⁴⁵

This chapter discussed the feasibility of and implementation for various types of urban agriculture on Flint's vacant land. The next three chapters will analyze other potential uses in vacant areas of Flint, including: waste management (deconstruction and composting), natural features enhancements (greenways expansion, waterfront green amenity expansions, and stormwater management), and small site uses (pocket parks and community gardens).

⁴⁴ Maryland Cooperative Extension, "Starting a shade tree nursery in Maryland," (Maryland: Maryland Cooperative Extension, 2008).

⁴⁵ University of Arkansas, "Starting a wholesale nursery part I", http://www.uaex.edu/Other_Areas/publications/PDF/FSA-6055.pdf, Accessed 6 August 2009.

CHAPTER 4: Waste Management

Implementing proper waste management practices can offer a community valuable resources while making use of products otherwise destined for the landfill. Two such waste management practices are deconstruction and composting. Due to the large number of home demolitions in Flint, salvaged building materials may be available for reuse, making residential deconstruction a viable land use in Flint. Composting for yard waste and urban agriculture can be encouraged at both the household level and at a neighborhood scale. By expanding Flint's city-wide yard-waste and leaf collection program to include household and restaurant food scraps, Flint can increase its collection rates and in return offer residents high-quality compost. This chapter first discusses the growing deconstruction field and its applicability for Flint, and then explores composting as an additional waste management approach. The final section of this chapter will describe the recommended locations for deconstruction and larger scale composting facilities.

Deconstruction

Deconstruction is a method of demolition that dismantles structures in order to reuse the building materials and components, thereby reducing landfill use. Originally, the deconstruction field focused on structures that had distinctive architectural or historical elements and harvested only valuable, unique or rare materials. However, interest is increasing in maximum deconstruction, where up to 90% of a structure is dismantled for reuse including everything from wood supports to windows, doors and fixtures.¹ Flint currently has many homes that need demolition, and, as shown in Figure 2.10, the high number of dilapidated structures suggests that the need for housing removal will continue.

Benefits

The demolition process produces 200 cubic yards of waste for every average sized home.² In Flint, city crews tear down two to seven houses per workday. This adds up to 260,000 cubic yards of waste in a year, most of which deconstruction methods can divert.³ In addition to reducing unnecessary stress on landfills, deconstruction services provide economic and social benefits:

- *Sustain the environment:* Deconstruction lengthens the useful life of a product by reuse. This means that the need

¹ Green Recycling Network, "Services: Deconstruction," <http://greenrecyclingnetwork.com/2009/services/deconstruction/>, Accessed 1 April 2009.

² Wes Janz, *Deconstructing Flint*, (Flint: Genesee County Land Bank Authority, 2007).

³ *Ibid.*

for new materials decreases and less “trash” ends up in the landfill.⁴

- *Save costs:* Deconstruction costs less than demolition because the recovered materials are sold. While deconstruction services typically cost more than demolition due to the increased labor and time, once the resale value of the collected materials and the reduced tipping fees are considered, case studies show a cost reduction of 20 to 40% compared to demolition.⁵
- *Create jobs:* Since deconstruction is more labor intensive than demolition, it creates more jobs. On average, for every one demolition job created, equivalent deconstruction methods create ten jobs.⁶
- *Access affordable building supplies:* Deconstruction provides high-quality building materials at a lower price. The demand for used building materials comes from large-scale developers as well as individual homeowners.⁷
- *Encourage entrepreneurship:* Deconstruction may encourage innovation and entrepreneurship by creating opportunities for complementary businesses in resale, recycling and other related industries.⁸

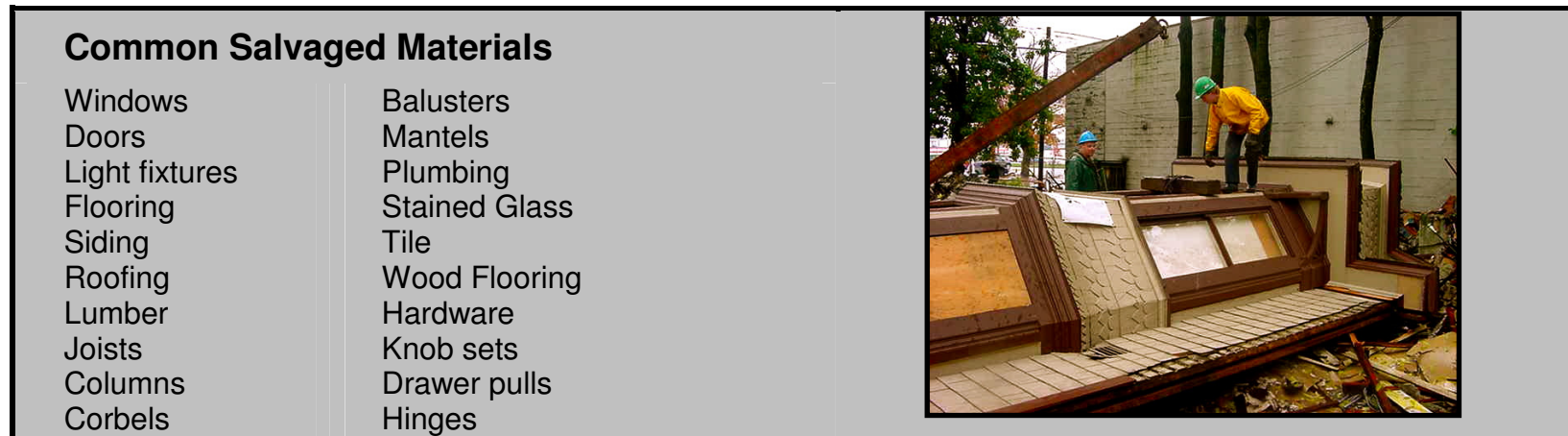


Figure 4.1 Common salvaged materials

Photo Credit: www.uoregon.edu

⁴ Abdol R. Chini and Stuart F. Bruening, “Deconstruction and Materials Reuse in the United States,” (*International e-Journal of Construction, Special Issue: The Future of Sustainable Construction*, 2003).

⁵ Wes Janz, *Deconstructing Flint*, (Flint: Genesee County Land Bank, 2007); Bradley Guy and Sean McLendon, *Building Deconstruction: Reuse and Recycling of Building Materials*, (Center for Construction and Environment, University of Florida, 2001).

⁶ Wes Janz, *Deconstructing Flint*, (Flint: Genesee County Land Bank, 2007); Abdol R. Chini and Stuart F. Bruening, “Deconstruction and Materials Reuse in the United States,” (*International e-Journal of Construction, Special Issue: The Future of Sustainable Construction*, 2003)

⁷ Abdol R. Chini and Stuart F. Bruening, “Deconstruction and Materials Reuse in the United States,” (*International e-Journal of Construction, Special Issue: The Future of Sustainable Construction*, 2003).

⁸ *Ibid.*

Implementation Criteria

In order to have long-term success, a deconstruction business should locate in an area that has a local supply and demand for recycled building materials as well as land for storage facilities.

- *Vacant structures:* A deconstruction business relies on the existence of vacant buildings with high quality materials. High quality materials can be either unique architectural features or basic wood, metal, or glass components. In New Orleans, the National Trust for Historic Preservation played a major role in establishing the use of deconstruction in historic areas (see Figure 4.2 “Deconstruction Case Study: New Orleans”). In other areas, such as Buffalo, New York, much of the salvaged materials are made up of lumber, doors and windows.⁹
- *Availability of land:* Deconstruction establishments require land and storage facilities in order to keep the recovered materials in useable condition. The amount of land needed for deconstruction facilities varies based on how many deconstructions the business performs, turn-around time of inventory, and whether the business dismantles materials, and sorts and retails at the facility.¹⁰
- *Market for materials:* Because shipping costs are so high for heavy building materials, sufficient local demand for used building components must exist to make deconstruction a viable business.

Location Criteria

A deconstruction facility will be more likely to succeed if placed in an area where it will not interfere with neighboring uses, yet can still minimize its transportation costs.

- *Near markets and sources:* Locating the deconstruction workspace and materials storage near or at the resale location along a busy road, such as an interstate or highway, and nearer sources of materials will increase product visibility and reduce transportation costs.
- *Far from conflicting uses:* Siting a deconstruction facility brings with it concerns over possible environmental contamination and hazardous waste containment from asbestos and lead, for instance. Due to these concerns, cities may decide to site deconstruction facilities away from conflicting land uses such as residential neighborhoods.

⁹ Abdol R. Chini and Stuart F. Bruening, “Deconstruction and Materials Reuse in the United States,” (*International e-Journal of Construction, Special Issue: The Future of Sustainable Construction*, 2003); Buffalo Reuse, “Donation Acceptance Guidelines,” <http://www.buffaloreuse.org/uploads/DonationGuidelines.html>, Accessed 8 July 2009.

¹⁰ Abdol R. Chini and Stuart F. Bruening, “Deconstruction and Materials Reuse in the United States,” (*International e-Journal of Construction, Special Issue: The Future of Sustainable Construction*, 2003).

Deconstruction Case Study: New Orleans

When the levees broke in 2005 during Hurricane Katrina, New Orleans was suddenly faced with an enormous number of homes requiring disassembly. Immediately, the director of the local National Trust for Historic Preservation began lobbying FEMA to require deconstruction rather than demolition of historic sites. Initially, this idea was met with resistance but in the end, the City of New Orleans agreed to work with deconstructionists and preservationists to preserve select architectural elements.

These initial deconstructions led to larger scale projects later that same year. The international organization, Mercy Corps, began a New Orleans' pilot deconstruction program in November 2005, deconstructing 15 homes and managing a salvage rate of 30 to 60%. They argued that by reusing up to 60% of the basic building elements in addition to historic architectural features, deconstruction can reduce stress on landfills as well as preserve historic elements.



Photo Credit: www.homeandlifestyle.com

The list of advantages that Mercy Corps attributes to deconstruction includes reducing use of landfill space, recycling resources, preserving and reusing historic architectural features, and creating educational and employment opportunities. The cost savings further illustrate the financial viability of deconstruction. One site on Clio Street in New Orleans cost a total of \$10,000 to deconstruct, but after sale of the salvaged materials, the final cost was \$5,000. The estimate for demolition was between \$6,000 and \$7,500. In this case deconstruction cost 20 to 30% less than demolition.

Those involved in the deconstruction activities in New Orleans hope that these advantages and positive outcomes will encourage local government to make deconstruction a mandatory part of demolition.

Figure 4.2 Deconstruction in New Orleans¹¹

¹¹ Peter Reichard, "Deconstruction, Deconstructed," <http://www.neworleanshomesandlifestyles.com>, Accessed 1 April 2009.

Recommended Sites

Figure 4.4 shows recommended deconstruction facility sites based on the considerations above, the plan principles described in Chapter 1, and specific criteria as follows:

- **Realized residential lot vacancy of at least 60%:** A small number of residents in a block reduces residential nuisance issues (such as frequent equipment use and truck transportation).
- **Locations on major roads:** Deconstruction facilities require access to major roads and thoroughfares to access and unload materials.
- **Contiguous lots one half acre or larger:** Storage and processing requirements for deconstruction facilities mean that adequate land must be available. However, specialized operations could function on smaller sites and very large operations could potentially require larger ones.



Figure 4.3 Deconstruction (Oregon)

Figure 4.4 below shows that potential deconstruction facility sites in the Flint focus area lie mostly near the industrial corridor running through the middle of the city. Proximity to non-residential areas is sensible given the potential conflicts with neighbors imposed by machinery noise and frequent transporting of materials. Though this plan focuses on residential areas, deconstruction sites may be well suited for former industrial land to avoid the “bad neighbor” issue. Figure 4.4 shows flexibility for locating a deconstruction facility. Many more properties are mapped than would be necessary, since only a small number of facility owners may locate in Flint. For instance, Buffalo ReUse’s facility, in its first year and a half of operations, deconstructed ten homes and salvaged ten tons worth of material.¹²

¹² Buffalo ReUse, “History of Buffalo ReUse,” <http://74.125.95.132/search?q=cache:rLXX02OYgt0J:www.buffaloreuse.org/Main/HistoryOfBuffaloReUse+buffalo+reuse+10+ten+houses&cd=1&hl=en&ct=clnk&gl=us>, Buffalo ReUse in Buffalo, NY, Accessed 8 July 2009.

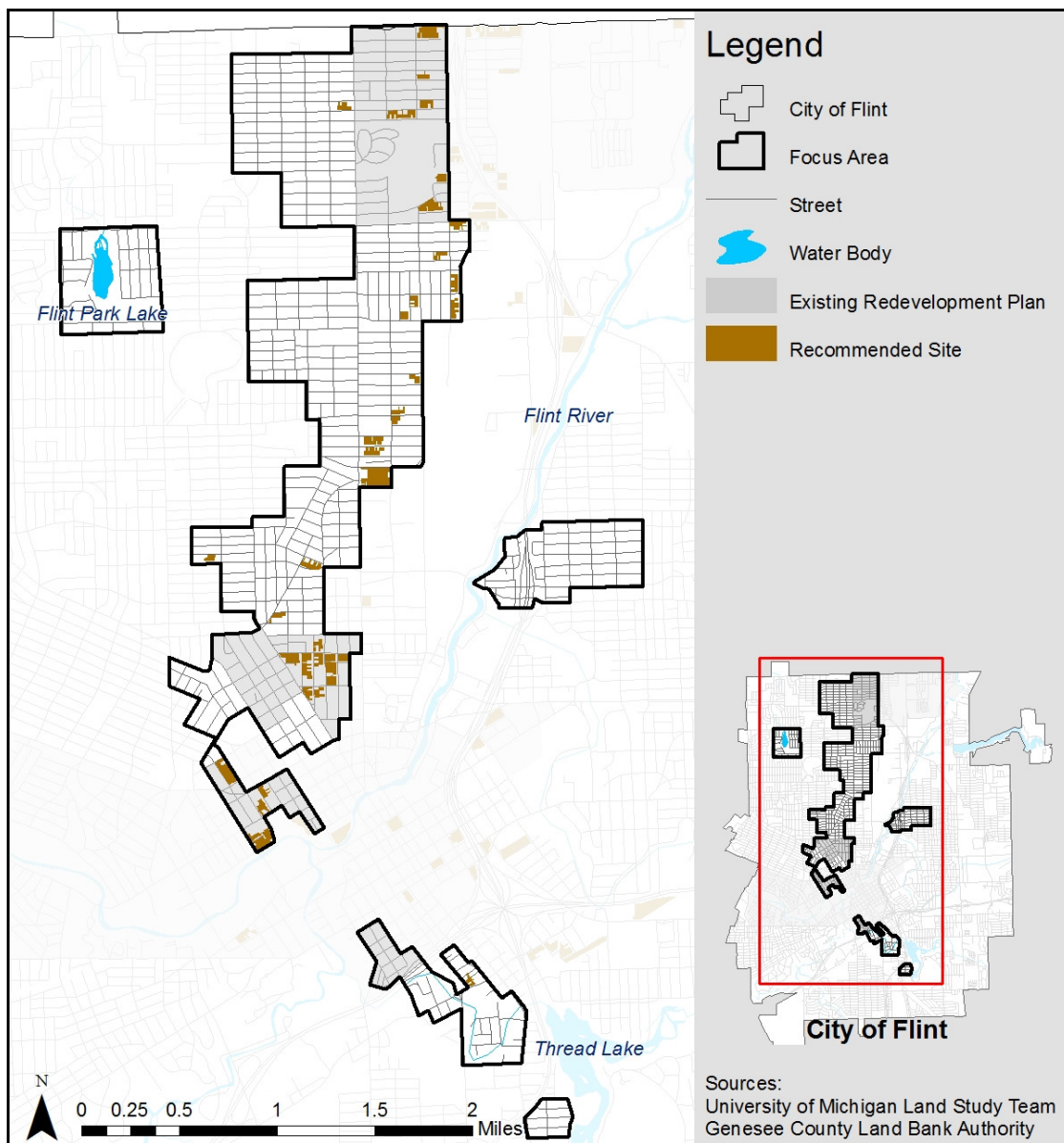


Figure 4.4 Potential deconstruction facility sites in the Flint focus area

Obstacles and Solutions

Deconstruction and the reuse of salvaged materials are sustainable choices that a city can make to deal with uninhabitable structures.¹³ However, establishing a new business in an emerging field such as deconstruction has challenges.

- *Deconstruction facilities may lack immediate governmental support:* For a deconstruction business to succeed in Flint, the city government must choose deconstruction over demolition and encourage local builders to use recovered materials in their building projects. Deconstruction practices can be promoted as a part of normal business operations for companies providing demolition services. The bidding process might also be an opportunity to give preference to operations that reuse materials from dismantled homes and buildings within the city.
- *Consumers may be unfamiliar with the salvaged materials market:* Some deconstruction businesses describe establishing a comfortable retailing operation and location as one of their biggest challenges. From each deconstructed building tons of removed materials may await sale. Offering a retail experience that is manageable while showcasing all the materials can be difficult. The city of Sarasota, Florida, addresses this challenge by separating materials by theme and showcasing the newest or most interesting products near the front of the warehouse.¹⁴
- *Facilities can face limitations for materials storage:* The storage space that a deconstruction facility will need will vary depending on the number and size of jobs completed. In order to prevent rejecting jobs or materials due to a lack of space, certain items can be pre-sold and delivered directly from the deconstruction site, thereby reducing product overload at the warehouse.¹⁵

¹³ BMRA, "Why Deconstruction?" <http://www.bmra.org/resources/whydeconstruction/>, Accessed 8 July 2009.

¹⁴ Jesse White, "Sarasota Architectural Salvage Shares Real Estate Strategy," <http://www.bmra.org/resources/library/98-best-practices/124-sarasota-architectural-salvage-shares-real-estate-strategy>, Accessed 8 July 2009.

¹⁵ David Bennink and Jesse White, "Working Smarter to Increase Sales and Diversion Rates," <http://www.bmra.org/resources/library/98-best-practices/116-bmra-article-published-in-architectural-salvage-news-october-2005>, Accessed 8 July 2009.

Composting

Composting is a method for disposing of organic waste while producing a valuable end product. The process of composting includes the aerobic decomposition of food, wood, manure and/or other biodegradable materials. Once decomposed, the materials become a nutrient-rich mulch that can replenish nutrients in the soil, making it more fertile for gardening and farming. The Land Bank currently receives donated compost from SOCCRA, an Oakland County solid waste and recycling authority, for use in its projects.¹⁶ Flint's municipal yard waste and leaf collection program does not make use of curbside collected compost in the city. Instead, the city Sanitation Department retrieves yard waste (tree debris) and potentially compostable materials like grass clippings, deposits them at Genesee Waste Services, Inc, where the materials are not sold or made available to residents within Flint, but instead are donated for use outside Flint.¹⁷ Exploring the feasibility of a comprehensive composting program for Flint – rather than this collect and remove approach – would support urban agriculture uses discussed in this plan.

Benefits

Organic materials such as yard clippings and garden and food waste make up 24 percent of the U.S. solid waste stream, placing substantial pressure on the nation's landfills.¹⁸ These same materials could be repurposed as compost, producing benefits that include:

- *Resource efficiency:* Composting offers useful and valuable products from waste that would otherwise be discarded in a landfill.
- *Soil enrichment:* Studies show that compost can discourage plant diseases and pests, act as a substitute for chemical fertilizers, and encourage higher crop yields.
- *Toxic substance remediation:* Fuels, heavy metals and volatile organic compounds can all build up in soil over time. Compost absorbs or limits the spread of these and other dangerous toxic substances.¹⁹
- *Pollution control:* Composting reduces methane, a known greenhouse gas, and leachate, a toxic groundwater

¹⁶ Jeff Burdick, personal communication (Electronic Interview by Melissa Munsell), (Flint: Genesee County Land Bank Authority, 13 July 2009).

¹⁷ Genesee Waste Services Inc., personal communication (Interview by Nathan Geisler), (Flint: Genesee Waste Services Inc., 10 July 2009).

¹⁸ U.S. Environmental Protection Agency, "Wastes - Resource Conservation - Reduce, Reuse, Recycle – Composting," <http://www.epa.gov/epawaste/conserves/rrr/composting/index.htm>, Accessed 1 April 2009.

¹⁹ George A. Garland, Terry A. Grist, Rosalie E Green, "The compost story: from soil enrichment to pollution remediation," *BioCycle*, (JG Press, Inc., 1995).

pollutant, by diverting waste from landfills.²⁰

- *Economic benefits:* Compost can be profitable at larger scales. Target markets can range from backyard gardeners to large agricultural operations. By using compost, the need for fertilizers, pesticides and water is greatly reduced.²¹

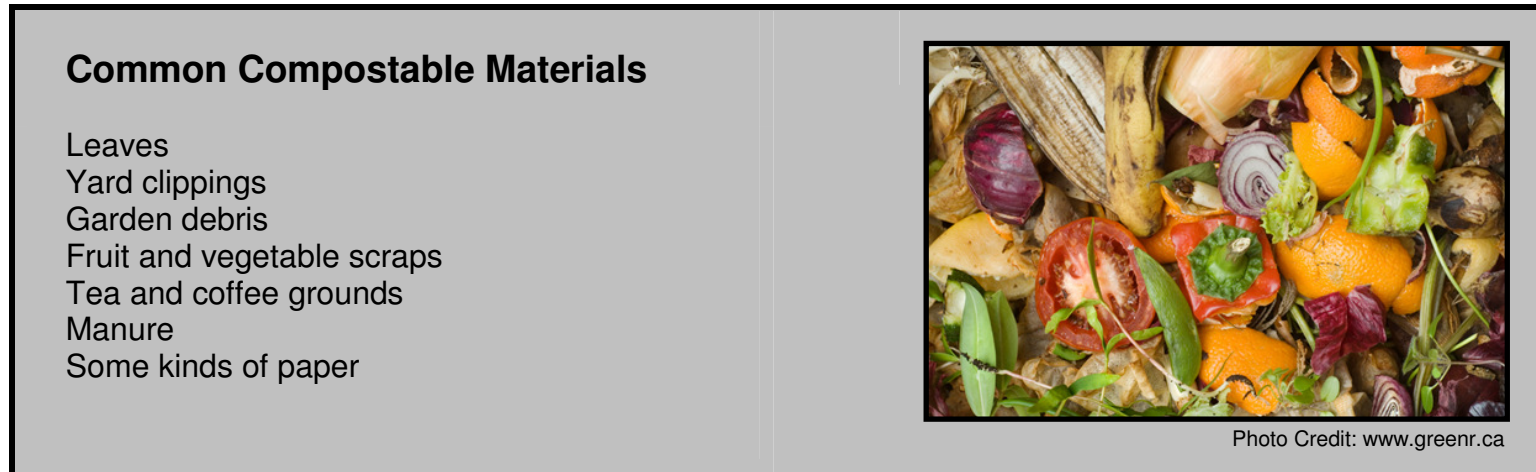


Figure 4.5

Common compostable materials

Implementation Criteria

To have an efficient composting operation, the facilities need land, compostable materials and a steady market for the end product.

- *Organic materials:* This can be in the form of yard trimmings, food waste, leaves, or almost any other organic, biodegradable material coming from residences or businesses that handle and dispose of compostable food materials. (See Figure 4.5)

²⁰ U.S. Environmental Protection Agency, "Cover Up With Compost; Fact Sheet," <http://www.epa.gov/wastes/nonhaz/municipal/pubs/ghg/f02022.pdf>, Accessed 3 July 2009.

²¹ Cathleen La Cross and Robert E. Graves, *Farm Composting for Profit*, (Centre: College of Agricultural Sciences, U.S. Department of Agriculture, and Pennsylvania Counties Cooperating, 1992).

- *Availability of land:* The size of the required land will vary depending on a number of factors including the amount of organic material that the facility handles and the type of composting equipment being used.²²
- *Users:* Free or affordable compost could be available for end-users, such as gardeners interested in home use or nurseries and related businesses who would benefit from easy access. For instance, a city might charge a small amount for people to fill up containers with compost to get revenue, or freely provide materials as a service to residents. Cities like Ann Arbor, Michigan also sell municipally collected compost at a price of \$17 per cubic yard of compost, after testing and certifying it according to U.S. Composting Council standards.²³

Location Criteria

Selecting an appropriate and convenient site for composting facilities is important in order to allow easy access for materials drop-off and pick-up while avoiding possible conflicts with nearby residents.

- *Near sources of organic materials:* Sources of raw materials might include community gardens, urban agriculture, or restaurants. If the facilities are placed in an area that can take advantage of a variety of compostables, they can receive a steady stream of materials throughout the year.
- *Near points of distribution:* The primary market for compost is individuals, community gardens or other small- and large-scale local agricultural sites. Finding a site that is accessible to consumers will make distribution easier and more cost effective.



Figure 4.6 Composting yard waste

²² Nancy Roe, "Using Composts in Commercial Vegetable And Fruit Operations," <http://aggie-horticulture.tamu.edu/vegetable/steph/compost.html>, Accessed 7 July 2009.

²³ University of Illinois, "Composting for the Homeowner," <http://web.extension.uiuc.edu/homecompost/materials.html>, Accessed 7 July 2009; City of Ann Arbor, "Fall Leaf Collection," <http://www.a2gov.org/government/publicservices/fieldoperations/Pages/FallLeafCollection.aspx>, Accessed 8 July 2009; City of Ann Arbor, "Compost Information and Sales," <http://www.a2gov.org/government/publicservices/fieldoperations/solidwasteunit/Pages/CompostSales.aspx>, Accessed 8 July 2009.

- *Near landfills:* Placing composting facilities near landfills provides landscapers or other users a single stop for unloading both compostable and non-compostable waste. One potential method for encouraging composting over landfilling is to charge lower tipping fees than the landfill.²⁴
- *Far from conflicting uses:* Composting facilities can produce unwanted odors, water pooling, rodent infestations, and unattractive landscapes. However, facilities can minimize these issues with appropriate infrastructure and management procedures, as well as by locating the site in an area where these potential issues will not be a concern.²⁵

Recommended Sites

- ***Realized residential lot vacancy of at least 60%.*** A high rate of vacancy in a block means composting facilities minimize nuisances for residents such as odor or frequent equipment use.
- ***Locations on major roads.*** The transport of compost requires access to major thoroughfares to efficiently load and unload materials and avoid bringing trucks into neighborhood streets.

The recommended composting sites in Figure 4.7, like the deconstruction sites from Figure 4.4, lie along much of the eastern edge of the focus area. The area of potential sites in the south overlaps with the South Village Plan boundaries (see Figure 2.13), but Flint still has many options for locating one or several composting facilities.

²⁴ California Integrated Waste Management Board, "Locating and Attracting Composting Facilities," State of California, <http://www.ciwmb.ca.gov/LgLibrary/Innovations/Organics/Compost.htm>, Accessed 1 April 2009.

²⁵ Michigan Department of Environmental Quality, "Composting Facilities Frequently Asked Questions and Answers," http://www.michigan.gov/deq/0,1607,7-135-3312_4123-185537--,00.html, Accessed 1 April 2009.

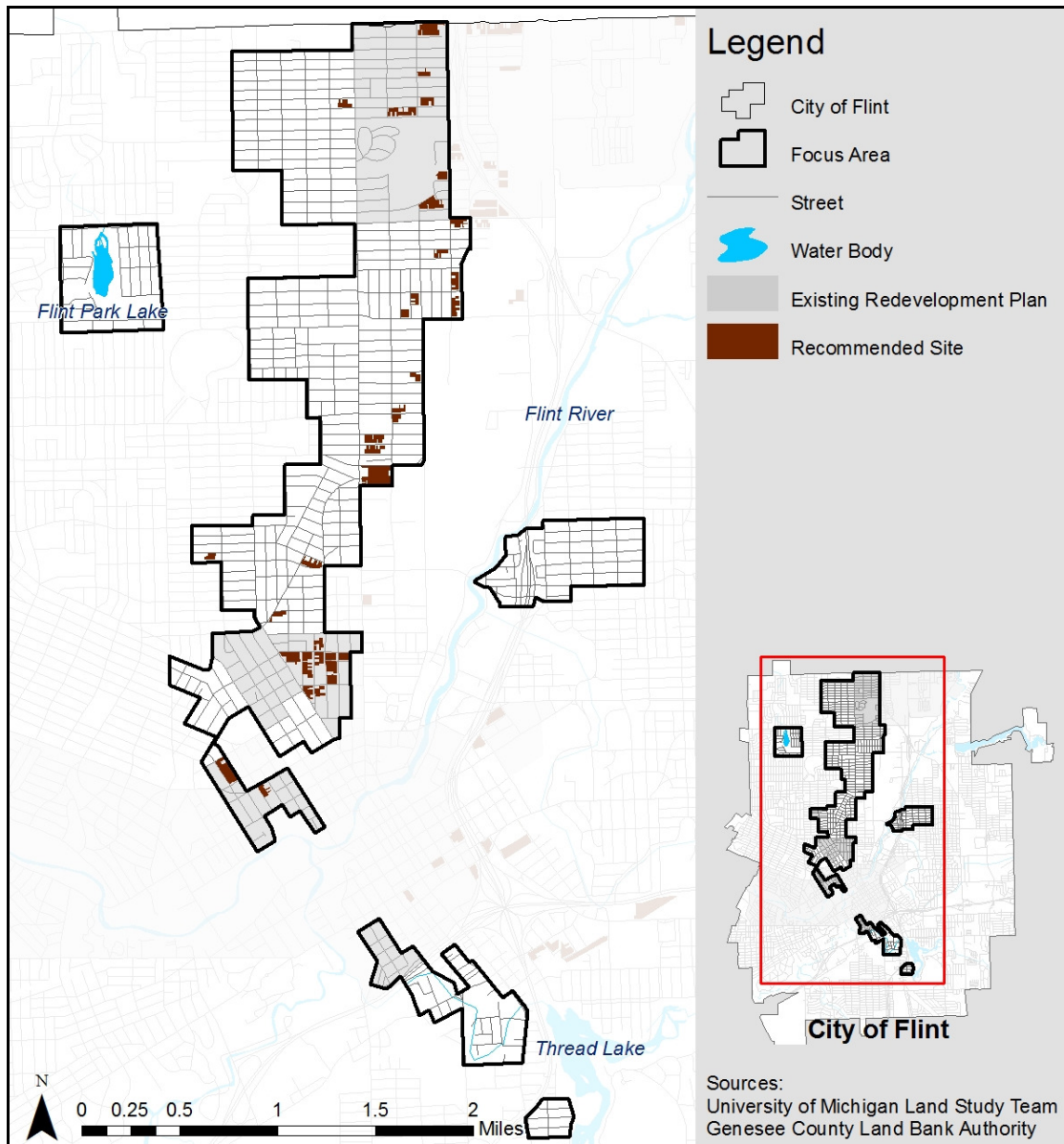


Figure 4.7 Potential composting sites in Flint focus area

Obstacles and Solutions

Composting can divert waste from the landfills while creating a useful substrate. However, certain considerations can ensure the highest quality end product.

- *Composting quality can vary.* Currently, no national specifications exist for composted mulch, though the U.S. Composting Council offers its Seal of Testing Assurance as a means of certifying quality. If staff is not trained properly on the composting process, the quality of the compost may be compromised. To address this, the facility personnel should be educated on the feedstock, nutrient balance, particle size, moisture content, oxygen flow and temperature of composting materials.²⁶
- *Demand is growing for niche compost varieties.* Increasingly, users are looking for types of compost for particular uses such as remediation, erosion control, or specific plant growth. These different varieties of compost can be engineered by making small changes in the moisture. The consumer base will grow if a facility offers a variety of compost types.²⁷
- *Feasibility studies are necessary to examine costs of municipal composting.* The cost of composting can vary greatly from \$11 to \$102 per ton, while the avoided fees for landfill disposal are at least \$5 to \$137.²⁸
- *Consumers may be unfamiliar with compost or unaware of access to it.* Consumers must know how and where to access the product. This can be accomplished by advertising or selling compost in home stores, garden outlets and other retail establishments.²⁹



Figure 4.8 Compost

This chapter discussed the feasibility of and implementation for waste management techniques. This chapter and the previous chapter on urban agriculture review potential uses that require multiple contiguous lots of at least ½ acre. The following two chapters present uses that require a variety of site sizes and may only require one or two lots or proximity to natural assets in the city.

²⁶ U.S. Composting Council. “Seal of Testing Assurance”, <http://www.compostingcouncil.org/programs/sta/>, Accessed 21 July 2009; California Integrated Waste Management Board, “Responses to Operational Challenges”, <http://www.ciwmb.ca.gov/leacentral/compostables/Responses.htm>, Accessed 8 July 2009.

²⁷ EPA, “Understanding the Composting Process,” <http://www.epa.gov/waste/conserv/rrr/composting/science.htm>, Accessed 8 July 2009.

²⁸ A. Taylor and R. Kashmanian, *Yard Waste Composting*, (Suffolk: Harvard University National Network for Environmental Policy Studies Fellow, 30 December 1988).

²⁹ EPA, “Composting Challenges,” <http://www.epa.gov/waste/conserv/rrr/composting/science.htm>, Accessed 8 July 2009.

CHAPTER 5: Natural Features Enhancement

Cities such as Flint can improve residents' quality of life by enhancing existing natural features such as open space, rivers, lakes, and wetlands. While the natural environment is often a smaller share of the landscape in urban areas, opportunities exist to use vacant land to help reduce water and air pollution and to expand amenities to offer added green spaces and increase recreation areas for people, while improving the overall appearance of the city.

Many different options exist to improve the usefulness of natural features, including:

- **Greenways and trails** by connecting existing green space through “greenways,” interconnected trails or bicycle lanes linking park spaces in a city or region.
- **Green amenity expansion** by adding to existing parks or converting adjacent vacant parcels to create expanded and enhanced recreational open spaces.
- **Stormwater management** through “rain gardens.”

Benefits

Natural features enhancements could bring social, environmental, and economic benefits to Flint through:

- *Recreational opportunities*: Improving or expanding green space brings additional recreation opportunities to urban areas.
- *Improved water quality*: Natural features such as rain gardens improve water quality by using plants to filter water before it re-enters the ground
- *Social welfare*: Natural areas improve community mental health, reduce stress, and bolster community identity.¹
- *Improved property values*: Attractive improvements that support the natural environment can stabilize or even increase property values.²

¹ K. Tzoulas, K. Korpela, S. Venn, et al., “Promoting Ecosystem and Human Health in Urban Areas Using Green Infrastructure: A Literature Review,” *Landscape and Urban Planning* 81: 167-78 (2007), cited in “The Sustainable Sites Initiative,” *Standards and Guidelines: Preliminary Report*, (1 November 2007).

² Susan Wachter, “The Determinants of Neighborhood Transformation in Philadelphia: Identification and Analysis,” *The New Kensington Pilot Study* (Philadelphia: Wharton School, University of Pennsylvania, the William Penn Foundation, and the Pennsylvania Horticultural Society, 2005).

Greenways and Trails

Flint possesses many parks and public green spaces. Connecting these spaces with bike routes and trails could provide an amenity to the people who live in and visit Flint. Genesee County is establishing a regional trails network, and some proposed routes move through Flint. The recommendations below support the Genesee County Regional Trail Plan which seeks “trail connectivity, alternative transportation, safety for all users, recreational opportunities, providing resources for implementation and education.”³ The plan defines trails as: 1) on-road facilities such as bike lanes, 2) multi-use non-motorized paths in the road right-of-way, 3) multi-use non-motorized paths in utility corridors or abandoned railroad corridors, 4) foot-trails or walking trails, 5) sidewalks.⁴

Benefits

Trails and greenways provide environmental and economic benefits to Flint as well. The fact that links provide non-motorized transportation routes between city destinations could mean fewer cars on the road which reduces local air pollution. Foot and bike traffic moving through the city might create business opportunities along commercial segments near urban trail routes.⁵ Figure 5.1 shows a plan for a neighborhood greenway that incorporates vacant residential land.

- *Safer travel:* Greenways allow pedestrians and cyclists safe (from vehicle traffic) passage between open space and recreational areas.
- *Healthier options:* Greenways encourage physical activity that improves the health of users.⁶

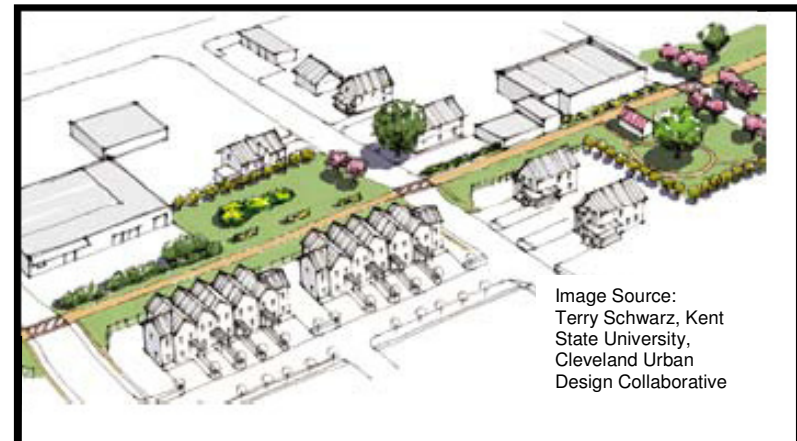


Image Source:
Terry Schwarz, Kent
State University,
Cleveland Urban
Design Collaborative

Figure 5.1 Example concept of an urban greenway

³ Genesee County Metropolitan Planning Commission, *Genesee County Regional Trail Plan*, (Genesee County: Genesee County Metropolitan Alliance, August 2007).

⁴ *Ibid.*

⁵ Trails and Greenway Corridors, “Economic Impacts of Protecting Rivers, 1990,” <http://www.nps.gov/pwro/rtca/econ1.pdf>, Accessed 5 April 2009.

⁶ Trip Pollard, “Policy perspectives for healthier communities,” *The American Journal of Health Promotion*, 18 (September/October 2003).

Trails or greenways should, when possible, connect to a larger greenway network or trails plan. Flint organizations and individuals are working to ensure the Genesee County Regional Trail Plan creates many new recreational opportunities.⁷

Implementation Criteria

As a proposed link within the County’s current trail plan, portions of Flint already satisfy greenway criteria, including dedicated funds and people, whether staff or volunteers, willing to assist ongoing efforts by the County to construct infrastructure and establish signs and directional aids for greenway or trail users.

The Flint focus area includes trail routes already proposed, as shown in Figure 5.2. Four red boxes show details of the locations where future greenways might run through the focus area. Vacant lots (gray) and park space (bright green) adjacent to the proposed County-planned greenway routes could be used to expand and offer recreational stop-offs along these trails.

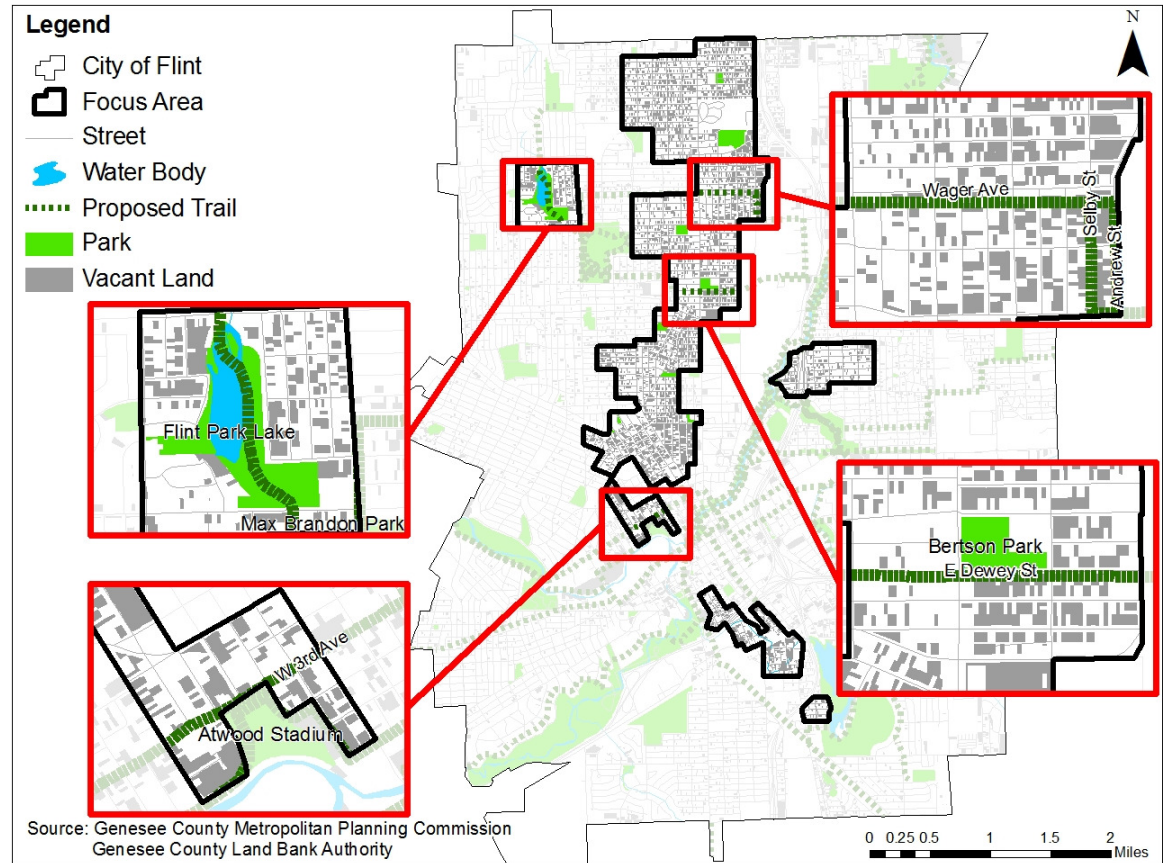


Figure 5.2 Genesee County Trail Plan sections in the Flint focus area

⁷ Genesee County Metropolitan Planning Commission, *Genesee County Regional Trail Plan* (Genesee County: Genesee County Metropolitan Alliance, August 2007).

Green Waterfront Amenities

Residents and visitors enjoy Flint’s many parks and other natural areas. The Flint River, Flint Park Lake, and Thread Lake are strong assets to build upon, in addition to the many existing parks in the city (see Figure 5.3 below). Plans are underway to enhance the Flint River District⁸ and to link parks through the Genesee County Regional Trail Plan.⁹ This plan’s focus area includes Flint Park Lake and a section of the Flint River. Conserving and maintaining these open spaces bordering Flint’s waterways can improve environmental quality and quality of life.

Ecological improvements do not necessarily garner local residents’ support or acceptance.¹⁰ People tend to prefer natural elements in urban settings that show evidence of care or “orderliness,” compared to a complete “return it to nature” approach that is typically less appealing where people live close together.¹¹

Previous natural features assessments for green amenities enhancements falling within the focus area primarily run along waterways.¹² These areas are recommended as “open space” and “habitat patches” in the near and distant future.¹³ In areas that local residents may view as overgrown, native plant promotion with clear signage advising people not to disturb these transforming areas, can encourage land and habitat improvement.¹⁴



Figure 5.3 Flint River Trail

⁸ Sasaki, *Flint River District Strategy*, (Flint: Genesee County Land Bank Authority, 2005).

⁹ Genesee County Metropolitan Planning Commission, *Genesee County Regional Trail Plan*, (Genesee County: Genesee County Metropolitan Alliance, August 2007).

¹⁰ J. Nassauer, et al., “Meeting Public Expectations with Ecological Innovations in Riparian Landscapes,” *Journal of the American Water Resources Association*, vol. 37, Issue 6 (2001), 1439-1443.

¹¹ J. Nassauer, “Messy Ecosystems, Orderly Frames,” *Landscape Journal*, 14:2 (1995), 161-170.

¹² J. Nassauer, et al., *Vacant land as a natural asset: enduring values created by care and ownership*, (Genesee: Genesee Institute, 2008).

¹³ *Ibid.*

¹⁴ *Ibid.*

Recommended Sites

- **Locations within 500 and 1000 feet of major water bodies:** To provide healthy habitat conditions and protect water quality, the USDA Natural Resources Conservation Service recommends 600 foot protective buffers for Michigan waters. Figure 5.4 shows 500 and 1000 foot buffers to provide a range that encompasses the USDA's suggested 600 foot standard.

Figure 5.4 reveals that the Land Bank can preserve many properties near the major lakes and the Flint River. Future habitat enhancement scenarios recommend open space preservation to create “patches” around these waters as part of future land use planning for the city’s decreasing city population.¹⁵

Stormwater Management Features

Rainfall washes over large areas of pavement and concrete in Flint while making its way to the ground. Along the way, this water accumulates particles of gasoline and other pollutants from roads and pavement. Rooftops and driveways also contribute to the volume of this “runoff.” Rain gardens and retention swales can improve water quality; these are vegetated areas that use plants to help filter and clean water as it enters the ground.

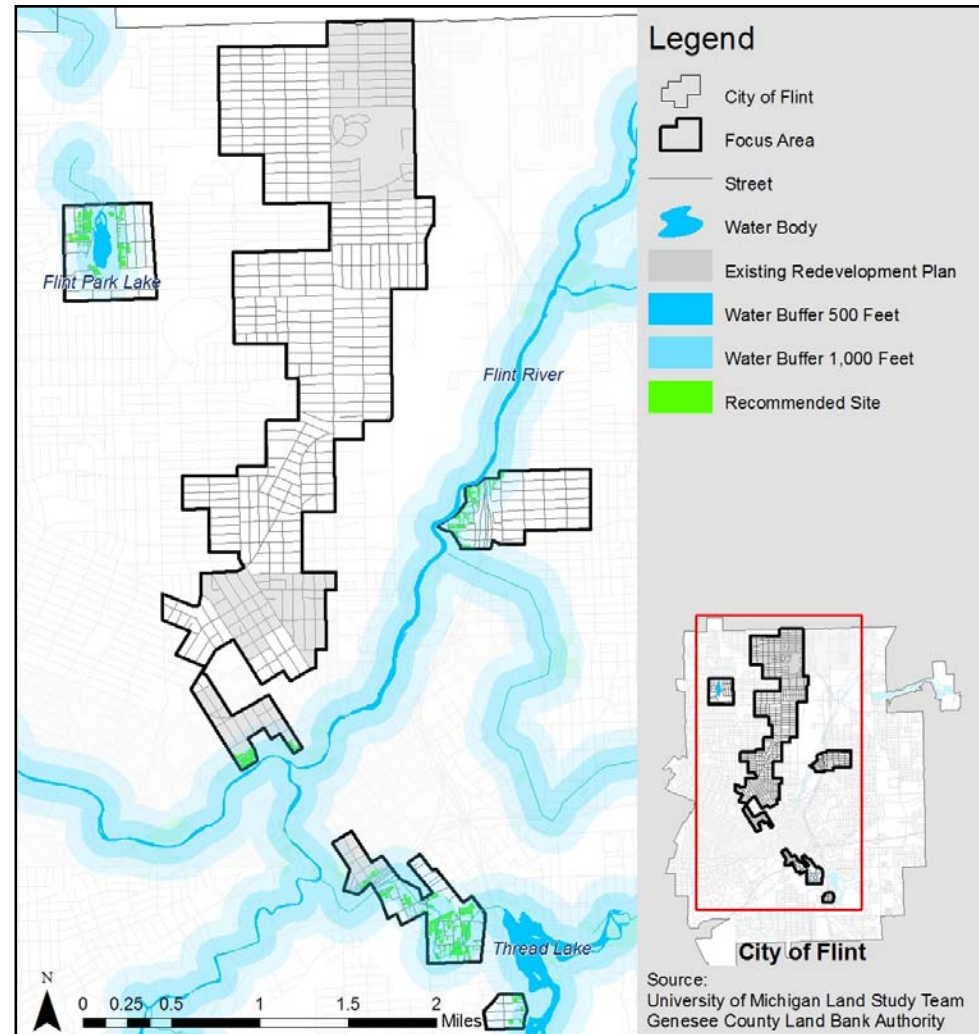


Figure 5.4 Potential green waterfront amenity expansion in Flint focus area

¹⁵ J. Nassauer, et al., *Vacant land as a natural asset: enduring values created by care and ownership*, (Genesee: Genesee Institute, 2008).

Benefits

Stormwater management features can help:¹⁶

- *Remove pollution:* Stormwater management can aid in the removal of pollutants for the surrounding areas and prevent those pollutants from getting into local rivers and lakes.
- *Support native plant species:* Native plants are often used in stormwater management.
- *Mitigate flooding:* These features may help decrease flood risks associated with heavy rains and pooled water in urban areas.
- *Reduce waste volume at sewage treatment plant:* This can reduce costs for the city.
- *Improved site appearance:* Stormwater management features can provide attractive natural areas.

Location Criteria

Much of the existing criteria for rain gardens applies to small rain gardens. The Environmental Protection Agency (EPA) recommends the following basic rules of thumb:

- *Near water flows:* Place rain gardens downhill from paved surfaces or in spots where water naturally flows.
- *Away from foundations:* Place rain gardens at least 10 feet from buildings to prevent water from damaging foundations.¹⁷
- *Proper size:* Position rain gardens to absorb rooftop runoff; garden should be one-third of the roof's size. Home-scale gardens are 100-300 square feet, or one percent of the acreage of larger areas without homes.¹⁸
- *Intentional placement:* Locate 25 feet from septic field or well head areas and avoid constructing rain gardens near gas or water lines.¹⁹
- *Flat site placement:* Use sites with less than a 12% slope.²⁰

¹⁶ North Carolina Cooperative Extension, "Building a Backyard Raingarden," <http://www.bae.ncsu.edu/topic/raingarden/Building.htm>, Accessed 5 May 2009.

¹⁷ *Ibid.*

¹⁸ University of Minnesota Extension, "Water- Rain Gardens," <http://www.extension.umn.edu/info-u/environment/BD462.html>, Accessed 27 March 2009; EPA, *EPA Stormwater Technology Fact Sheet Vegetated Swales*, (September 1999).

¹⁹ North Carolina Cooperative Extension, "Building a Backyard Raingarden," <http://www.bae.ncsu.edu/topic/raingarden/Building.htm>, Accessed 5 May 2009; The Groundwater Foundation, "Rain Gardens 101," <http://www.groundwater.org/ta/raingardens.html>, Accessed 1 April 2009.

²⁰ Virginia Department of Forestry, "Rain Gardens Technical Guide: A landscape tool to improve water quality," http://www.dof.virginia.gov/mgt/resources/pub-Rain-Garden-Tech-Guide_2008-05.pdf, Accessed 11 April 2009.

Installing retention swales is an approach to stormwater management suited for organizations with expertise in pollution management. Since the Land Bank is not such an entity and because the Land Bank has already undertaken rain garden projects, this plan does not discuss retention swales. Small home rain gardens can easily go in residential lots throughout the city to improve localized runoff from nearby homes. Figure 5.4 shows contiguous vacant parcels in the Flint focus area within 500 feet of major waterways (the Flint River, Thread Lake and Flint Park Lake) for expanding green amenities to help protect surface water quality. Including rain gardens at these locations could also improve these important recreational waters.

Day-Lighting Waterways

“Daylighting” is a term used to describe the process of uncovering buried streams and rivers. An examination of historical maps revealed a possible underground stream outside of the Flint focus area, underlying a residential area with little vacant land northwest of downtown Flint. This plan does not recommend or address daylighting due to the uncertainty of the stream’s present course, the high occupancy of the residential area, and substantial costs associated with this undertaking.

Figure 5.5 Day-lighting waterways

Obstacles and Solutions for natural features enhancements

- *Projects may require initial and ongoing funds.* Natural features enhancement projects have substantial upfront and ongoing maintenance costs. Spreading wood chips for trails or supporting native plants and clearing overgrowth within green spaces are simple examples but can be quite costly. Local foundations, such as Ruth Mott, provide grants for beautification projects to help overcome this obstacle.²¹
- *Natural features projects generally require volunteer labor and involved residents.* Greenways, expansion of green waterfront amenities, and rain gardens require significant labor contributions to maintain the long-term viability of the improvements. Cultivating a robust volunteer network can ensure an adequate pool of willing and invested participants.²²

This chapter proposed several uses for vacant land that might serve to protect Flint's natural environment and provide recreational and social amenities for its residents. The next chapter will review uses that may also provide environmental and social benefits, community gardens and pocket parks.

²¹ The Ruth Mott Foundation, <http://www.ruthmottfoundation.org>, Accessed 17 March 2009.

²² Glen Page, *Citizen involvement in habitat restoration*, (Tampa: The 9th Conference on Coastal Zone, 1995), 379-380.

CHAPTER 6: Community Gardens and Pocket Parks

Despite the increasing vacancy in the Flint focus area, some blocks retain many residents, have lower levels of vacancy and exhibit signs of care, making these blocks prime candidates for community gardens and pocket parks. While these uses do not necessarily prevent further decline, transforming vacant lots into gardens or small parks can offer neighborhoods a gathering space and foster stewardship of previously uncared for lots. Since stewardship tends to foster further stewardship, giving residents the power to improve lots may promote broader neighborhood improvements. However, while community gardens and pocket parks are a good solution for some lots, they represent a small share of the vacant land in this plan; they are a means to cultivate stewardship in blocks that still have numerous dedicated residents.

Community Gardens in Flint – Successful Signs are Plentiful

Organizations such as “Cultivating our Community” and “Keep Genesee County Beautiful” are already playing a role in encouraging community gardens in the Flint area as shown in Figure 6.1. These programs are examples of the type of supportive institutions that can help foster the uses discussed in this plan.



Photo Credit: Melissa Munsell

Figure 6.1 Community gardens in Flint

Community Gardens

A community garden is land where neighbors can come together to garden in shared or individual plots. These gardens grow everything from fruits and vegetables to herbs and flowers. Gardeners often use the produce for personal use, but sometimes they also sell or donate the fruits and vegetables.

Benefits

Community gardens tend to encourage physical activity, promote healthy eating, and improve the overall quality of life within a neighborhood.¹ Additionally, they can provide opportunities to organize around other issues and build a greater sense of community.² In Flint, community gardens may help to:

- *Beautify*: Community gardens can provide green space that is both beautiful and productive.
- *Foster community development*: Community gardens can act as a catalyst to encourage stronger relationships across ethnicities or increase connections among people of different ages.³
- *Reduce crime*: Crime may decrease in neighborhoods with active community gardens.⁴
- *Encourage economic benefits*: Community gardens can both reduce home food expenses and provide income if produce is sold.⁵



Figure 6.2 Community gardeners in Silicon Valley, California

¹ Joan Twiss, "Field Action Report: Community Gardens: Lessons Learned From California Healthy Cities and Communities," *American Journal of Public Health*, 93 no. 9 (September 2003), 1435-1438.

² *Ibid.*

³ Katherine Alaimo, *From Seeds to Stories: The Community Garden Storytelling Project of Flint*, (Flint: Flint Urban Gardening and Land Use Corporation, 2003).

⁴ *Ibid.*

⁵ Autumn K. Hanna & Pikai Oh, *Rethinking Urban Poverty: A Look at Community Gardens*, (University Park: Pennsylvania State University, 2000).

Implementation Criteria

Community gardens require more than soil, water, and sun to establish themselves. They also require resident support:

- *Resident interest:* Residents should have an active role in placing and designing pocket parks so that they can create a space that fits their needs, as can be seen in Figure 6.3. Pocket parks succeed when the majority of residents have a stake in the planning and upkeep of the park.

Location Criteria

Prospective community garden sites should have:

- *Appropriate size:* Community gardens can thrive on as little as a single lot.
- *Suitable growing environment:* Gardens are most successful on well-drained, uncontaminated soil, with access to water and at least six full hours of sunlight daily (for vegetables).⁶
- *Visibility:* Community gardens should be visible to residents to encourage engagement and safety. Corner lots work especially well for these purposes.⁷



Photo Credit: rbanprograms.osu.edu

Figure 6.3 Pocket park in Ohio

⁶ American Community Gardening Association, <http://www.communitygarden.org>, Accessed 1 March 2009.

⁷ Joan Nassauer and Rebekah VanWieren, *Vacant Properties Now and Tomorrow*, (Ann Arbor: Michigan Sea Grant, 2008).

Pocket Parks

Pocket parks are small recreational areas for the primary use of the immediate neighbors. They do not draw people from far distances; rather, they reflect the local commitment of people in a block or small area to transform an empty lot from a liability to a neighborhood asset.

Benefits

Small parks give residents the opportunity to care for their neighborhood and reconnect with their neighbors. Pocket parks may:

- *Foster community organizing and informal gathering:* Pocket parks can offer neighborhoods a public gathering space, potentially building a sense of community and social capital.
- *Increase opportunities for recreation:* Pocket parks can provide open space or structured play areas for children's recreation as can be seen in Figure 6.4.



Figure 6.4 Pocket park in Flint

Implementation Criteria

Like community gardens, pocket parks need neighborhood collaboration to be successful:

- *Resident interest:* Residents should have an active role in placing and designing pocket parks so that they can create a space that fits their needs. Pocket parks succeed when the majority of residents have a stake in the planning and upkeep of the park.

Location Criteria

Prospective pocket park sites should have:

- *Appropriate size:* Pocket parks should be small enough to allow for a manageable space that can be kept up without a lot of time and expense.⁸
- *Visibility:* Pocket parks should be visible from the street and easily accessed by neighborhood residents.

Community Garden & Pocket Park Recommended Sites

Community gardens and pocket parks have equivalent site requirements. Based on the considerations above, this plan recommends sites that meet the following criteria:

- ***Realized residential lot vacancy less than 20%:*** This means that houses occupy at least 80% of the residential lots. Since community gardens and pocket parks require a high level of residential support and involvement, a high occupancy level is desirable.⁹
- ***Locations 500 feet away from industrial land:*** Gardens and parks located away from possible pollution sources avoid contamination risks. This plan uses a 500-foot industrial buffer. However, sites within this distance may be suitable depending on the character of the soil, groundwater contamination and the past effects of air pollution.
- ***Locations away from major roads:*** Placing gardens and parks away from major thoroughfares creates safer environments for users. This plan recommends sites away from major roads. However, “gateway” parks located along such roads can signal a neighborhood entry point.
- ***One to three contiguous lots:*** Since neighborhood residents maintain community gardens and pocket parks, they should be kept at a manageable size. This plan considers a manageable size as one to three lots.

Figure 6.5 uses these criteria to map sites for potential community gardens and pocket parks. The map shows few potential sites for these uses primarily because the Flint focus area was chosen due to its high vacancy rates. However, community gardens can thrive in a variety of sites elsewhere in the city.

⁸ A. Blake, “Pocket Parks (Urban Parks),” <http://www.greenswardparks.org>, Accessed 1 March 2009.

⁹ This plan calculates realized residential lot vacancy by subtracting the rate of stewardship (Figure 2.8) from the projected future residential lot vacancy (Figure 2.12).

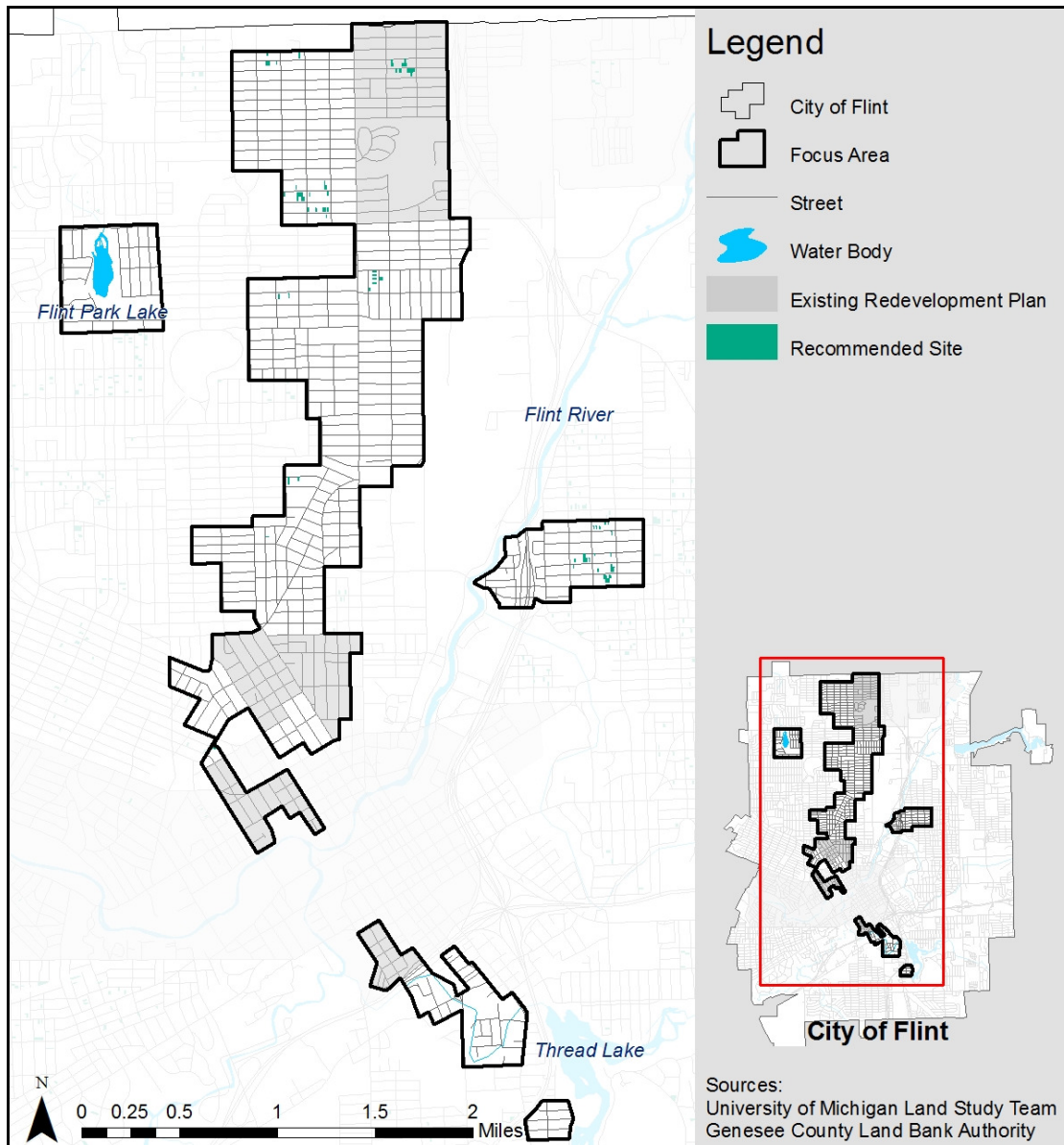


Figure 6.5 Potential community garden and pocket park sites in Flint focus area

Obstacles and Solutions

While residents often have an interest in creating pocket parks and community gardens in their neighborhoods, the capacity to implement an endeavor can be difficult.

- *Financial support and organizational direction is necessary for pocket parks and community gardens. Adequate financial resources can be difficult to obtain since volunteer residents generally create and maintain community gardens and pocket parks. Additionally, community gardens and pocket parks require organization and direction to be sustained in the long-run. Organizational partnerships, such as Genesee County's existing "Cultivating our Community,"¹⁰ may serve to both educate and increasingly provide material or financial support.¹¹*



Figure 6.6 Pocket park and garden in Flint

This chapter discussed the feasibility of and implementation for community gardens and pocket parks. The final chapter offers site-specific recommendations and implementation tools for the uses discussed in this plan as well as strategic land acquisition suggestions.

¹⁰ "Cultivating Our Community" is collaboration between three organizations: Keep Genesee County Beautiful, the Ruth Mott Foundation, and the Genesee County Regional Chamber of Commerce. The goal of "Cultivating Our Community" is to "change the visual landscape" of the community by planting beautiful, low-maintenance gardens on public land, schools, businesses, and even private property.

(http://www.kab.org/site/PageServer?pagename=projectprofile_cultivatingourcommunity, Accessed 1 September 2009.)

¹¹ American Community Gardening Association, <http://www.communitygarden.org>, Accessed 1 March 2009.

CHAPTER 7: From Acquisition to Implementation

The purpose of this chapter is to identify best practices from other municipalities that might assist the Land Bank in strategically assembling contiguous blocks of vacant land to implement the uses identified in this plan. The previous four chapters show that many of the most promising potential uses for vacant land in Flint, such as urban farming, deconstruction, and tree nurseries require at least one-half acre of land. Using the location criteria specific to each type of use, this plan identified many potential sites for these uses in the focus area. In order to determine the full potential of each type of use in Flint, the recommendations in this plan address all vacant lots – not just those owned by the Land Bank.

The Land Bank currently holds over two thousand vacant lots, but in almost all areas where this plan recommends new uses, the Land Bank does not hold all of the vacant lots. The recommended sites may include vacant land that is privately owned or city-owned. Further, promising sites might lie between occupied or abandoned residential structures owned by a variety of people who may be willing to sell the property. This chapter presents four potential approaches to assist the Genesee County Land Bank Authority in amassing sufficient land to implement the recommended uses presented in this plan.

Using case studies from other municipalities, this chapter is divided into four strategy sections, with accompanying case studies:

Targeting areas- Oak Hill, Youngstown, OH

Narrowing use focus- Pittsburgh, PA

Strategically acquiring land in targeted areas- Baltimore, MD

Ranking vacant properties- Philadelphia, PA

Targeting Areas

Best practices from other municipalities show that land banks and other redevelopment authorities are most successful in transferring responsibility or land ownership and improving conditions when they focus on either a specific area or neighborhood or on a particular type of redevelopment or use.¹ Targeting is a strategic approach that reduces the overwhelming task of handling an entire city's vacant land.

Case Study: Oak Hill

Youngstown, Ohio is a small city on the eastern border of Ohio (population 68,592) that has lost approximately 100,000 residents since the 1960s. However, in the last few years, Youngstown has been redefining itself – even to the point that *Entrepreneur Magazine* just named the city one of the ten best places in the US to “be an entrepreneur.” This resurgence is due, at least in part, to the implementation of the “Youngstown 2010 Plan” that proposes an acceptance of a reduced city and the idea that “smaller can be better if decline is planned for.” The plan process divided the city into five regions and 11 neighborhood clusters. Each of these clusters engaged in “Neighborhood-Based Planning” which provided a practical and realistic view of current neighborhood conditions and future goals.

Dividing the city into defined neighborhood clusters made it possible to apply goals of the citywide plan to the specific conditions of a smaller area. The Oak Hill Community Design Charrette applied the goals of the Youngstown 2010 plan in a very vacant neighborhood (60% of parcels are vacant) that is unlikely to attract new development or infill. The outcome of the community charrette process was a plan that embodied one of the key guiding principles of the citywide plan: that the city could “afford to be generous with our urban land.” Oak Hill design process resulted in a set of potential uses and design features, as well as four alternative design concepts that do not require growth to succeed.²



Photo Credit: Kent State, Cleveland Urban Design Collaborative

Figure 7.1 Targeting areas case study- Oak Hill

¹ The Great Lakes Environmental Finance Center, *Best Practices in Land Bank Operation*, (Cleveland: The Department of Economic Development, 2005).

² U.S Census Bureau, *American Community Survey*, (2005-2007); J. Dailey, “Where to be an entrepreneur: 10 start-up friendly cities, and their success stories, show how small business is thriving,” *Entrepreneur Magazine*, (August, 2009); The Cleveland Urban Design Collaborative, Kent State University, *Oak Hill Community Design Charrette*, (2006); The City of Youngstown and the Center for Urban and Regional Studies, Youngstown State University, *Youngstown 2010 Citywide Plan*, (2005).

Similarly, opportunities exist in Flint to re-imagine particular areas. Though the following target areas do not incorporate specific neighborhoods, the Oak Hill example reveals the benefits of creating area-focused plans that use existing neighborhood strengths. The strengths of the following area “snapshots” show how land reuse can capitalize on three of Flint’s strengths: abundant contiguous land, scattered vacancy, and natural features amenities.

Figure 7.2 shows an area that can be thought of as a “green entrepreneurship zone.” This zone has large areas of contiguous vacant lots and many dilapidated structures, making this a prime site for urban agriculture projects and a deconstruction business. This area also has many potential urban agriculture sites within a small area, including suitable sites for urban farming, biofuel crops, and tree nurseries. These types of projects benefit from proximity to one another, where users or owners can potentially share tools, labor, and expertise (see Chapter 3).

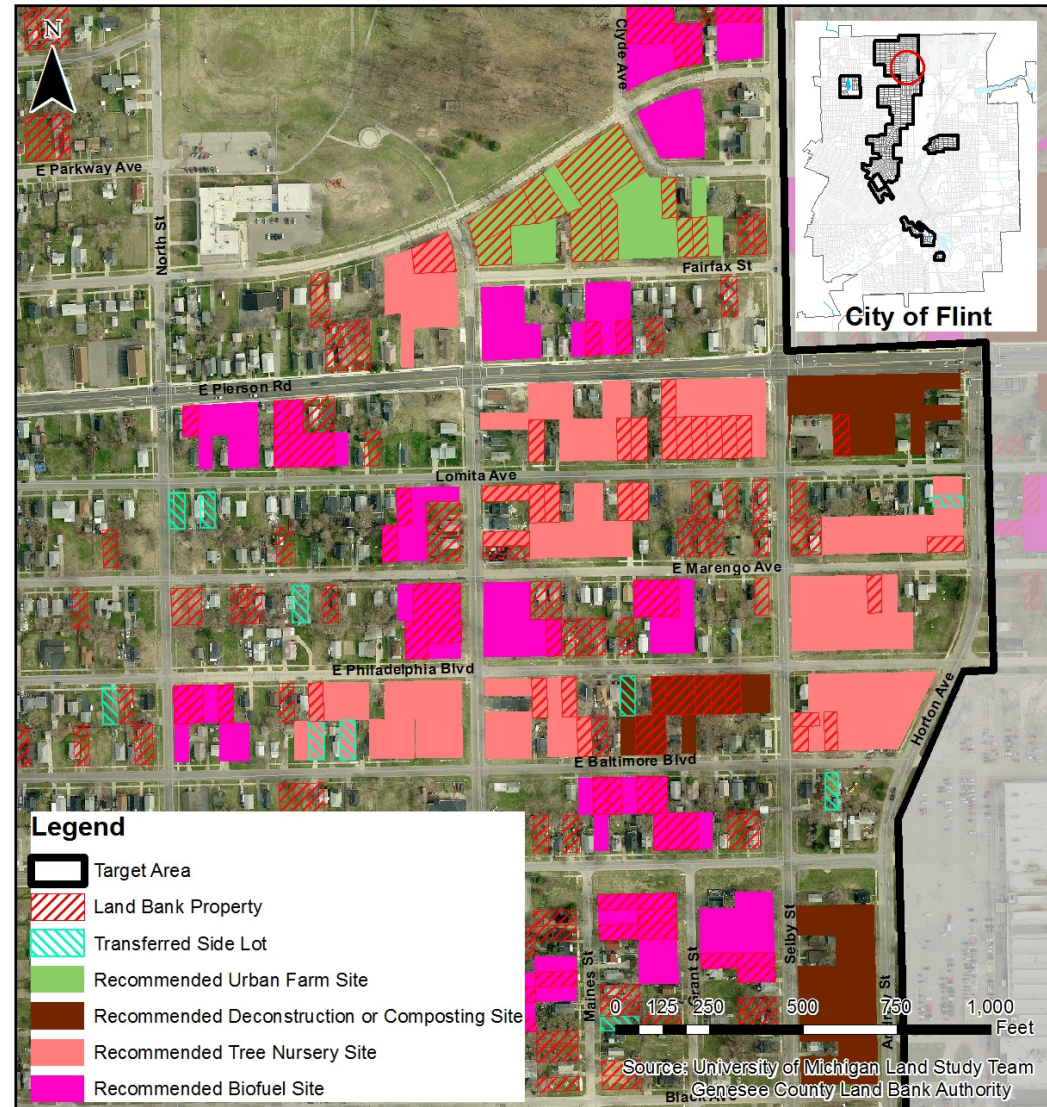


Figure 7.2 Potential target area – abundant vacant land

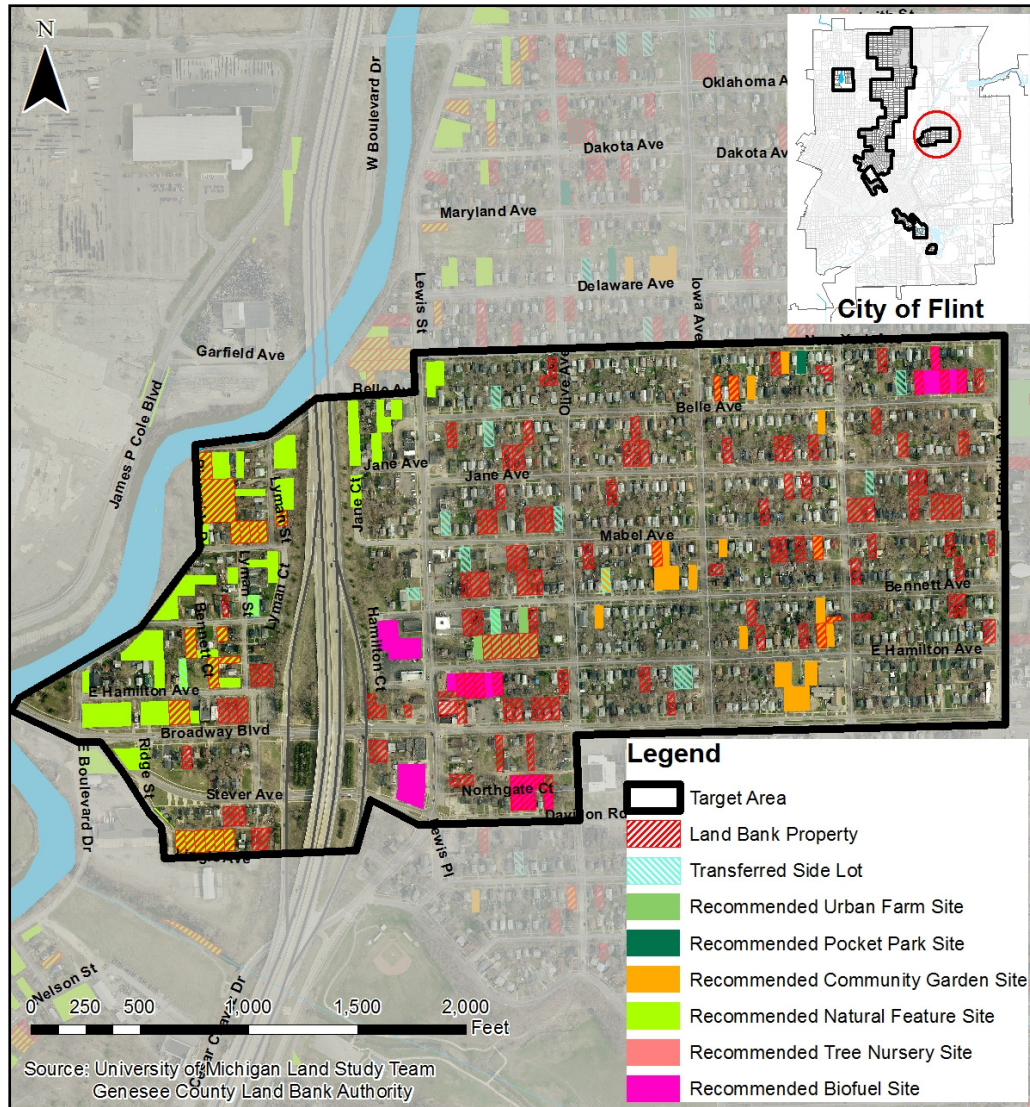


Figure 7.3 shows a medium-vacancy area bordering the Flint River. This area presents a significant opportunity for potential reuses that encourage stewardship and re-investment, such as community gardens, small parks or playgrounds, as the area has numerous small, scattered lots held by the Land Bank. Proximity to the Flint River offers opportunities to enhance natural features (see Chapter 5) that may provide educational and recreational opportunities while protecting the Flint River watershed.

Figure 7.3 Potential target area – scattered vacancy

Figure 7.4 identifies the reuse potential in the area surrounding Flint Park Lake. This area has a large number of vacant lots, used for dumping debris. However, the lake offers one of several accessible waterfronts in the city – a rare urban asset. This area would benefit from a plan that advocates low-maintenance uses (such as switchgrass) that would increase stewardship without interfering with remaining residents. Expanding natural amenities in the long-term also adds to the recreational potential of this area.

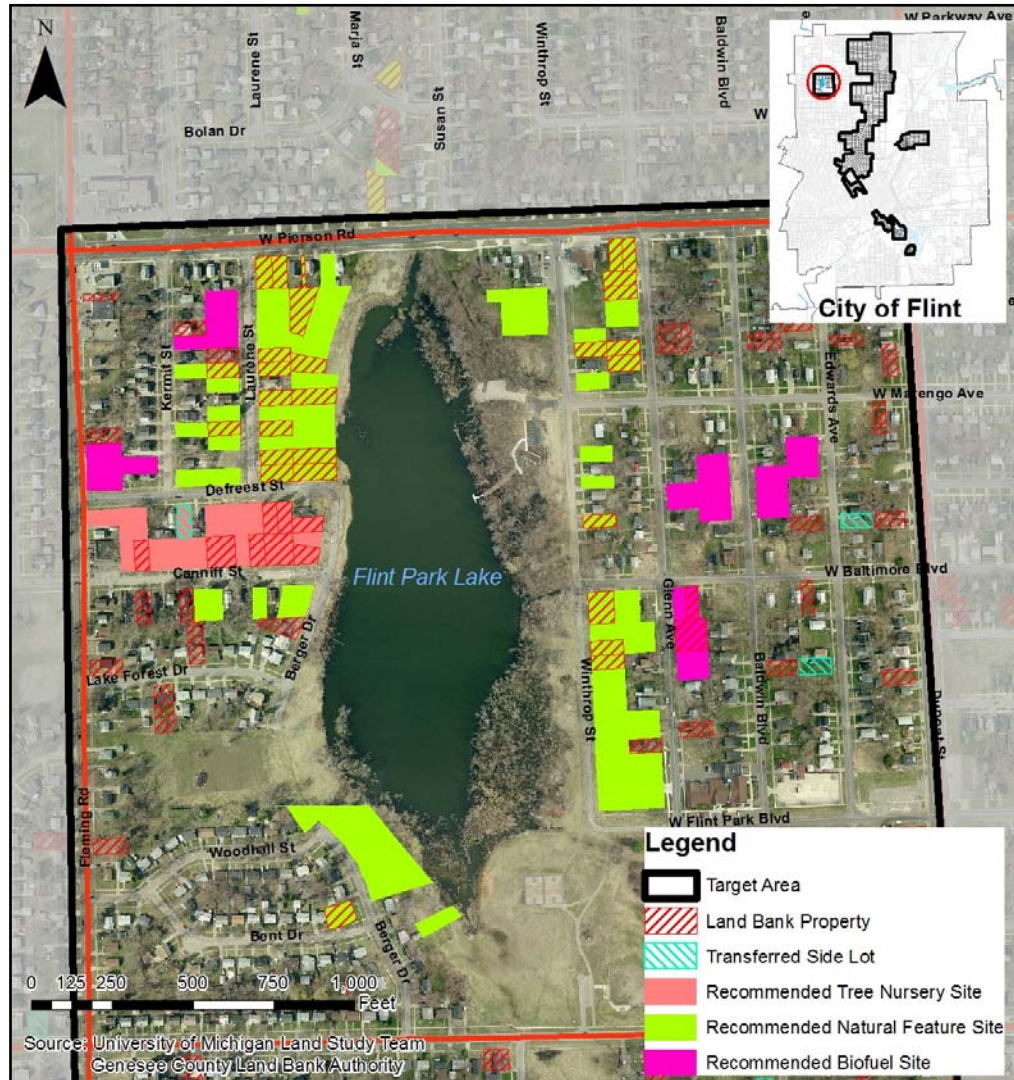


Figure 7.4 Potential target area – natural features (Flint Park Lake)

Narrowing Use Focus

Another best practice applicable to Flint is a narrowed use focus – emphasizing potential uses that show the most promise in Flint. An example of one such narrowed use – urban agriculture – is shown in Figure 7.5.

Case Study: Pittsburgh

Pittsburgh, Pennsylvania, is a city of over 300,000 people located near the Ohio border. Like Flint, Pittsburgh is a city that has seen times of booming industry and times of steep decline and currently has over 14,000 vacant lots. The Mayor's office has taken up a clean-up campaign to green the city. The goal of the project is the prevention of neighborhood blight caused by unkempt vacant lots.

A team of graduate student researchers from Carnegie Mellon University's Heinz School of Public Policy demonstrated that "greening" (namely promoting urban agriculture) of vacant lots is a legitimate neighborhood revitalization tool. Their report argues that for every dollar spent by the city on greening efforts, the city will earn two dollars in real estate tax value within five years. Urban agriculture "greening" strategies for vacant lots include biofuel crop farms, bioremediation areas, and gardens. The Office of Neighborhood Initiatives has partnered with Carnegie Mellon and created neighborhood green plans that offer "gardening waivers" that allow residents to garden a city-owned lot at no cost.³




Photo Credit: Carnegie Mellon

Figure 7.5 Narrowing use focus case study- Urban agriculture in Pittsburgh

³ U.S. Census Bureau, "Annual Estimates of the Population for Incorporated Places over 100,000", <http://www.census.gov/popest/cities/tables/SUB-EST2006-01.csv>, Accessed 2 August, 2009; Sabrina Porter, "Graduate students green-up vacant lots," *The Tartan*, (29 January 2007); L. Gaido and N. Wildfire N. "Vacant to Vibrant: Greening Vacant Lots for Pittsburgh's Sustainable Neighborhood Revitalization," (Pittsburgh: Carnegie Mellon University, H. John Heinz III, School of Public Policy and Management, Fall 2006); Diana Nelson Jones, "Carnegie Mellon students propose plan to green up city's vacant lots," *Pittsburgh Post-Gazette*, (16 December 2006).

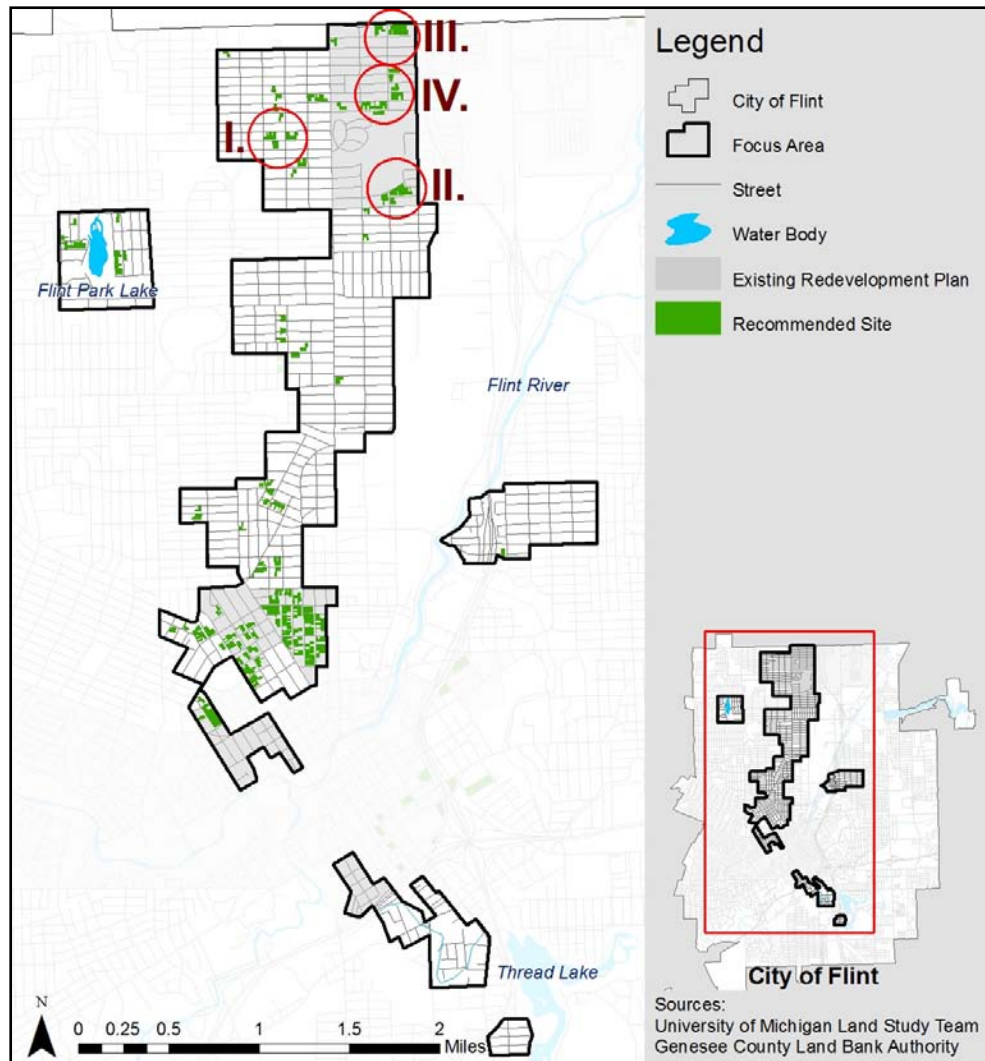


Figure 7.6 Potential urban agriculture clusters

Significant interest and established partnerships also exist in Flint that may support urban farming as a use for the city's vacant land. Figure 7.6 shows four potential urban farm clusters in the northern part of the focus area. Three of the four potential urban farm clusters shown in Figure 7.6 overlap with the I-475 Neighborhood Plan for this area (see Figure 2.13), though a review of that plan revealed no apparent conflicts in encouraging clustered urban farming in neighborhoods there.⁴

As mentioned in Chapter 3, urban farming projects succeed financially when farming sites are clustered. Each of these four areas has multiple farming sites, so the next section zooms in on each of these clusters to illuminate the challenges of each site.

⁴ Wade Trim, *I-475 Neighborhood Plan*, (Detroit: Wade Trim, 2002).

Figure 7.7 shows an area of the city with a cluster of three potential urban farming sites. This area is west of Bonner Park, close to North Saginaw and Martin Luther King Avenue. This cluster contains three sites that are immediately available for farming: two sites on the north side of E. Hobson Avenue, and a third between E. Hobson and E. Gracelawn. Each of these “clumped” sites contains at least eight contiguous Land Bank held lots - almost an acre of land for each site.

However, this expanded view also reveals two challenges to implementation: first, the yellow cross-hatching indicates a privately owned vacant lot. In this case, private ownership of vacant lots does not reduce the site size below the minimum site requirement.

The second challenge to implementation stems from a Land Bank program. Areas with light-blue crosshatching represent lots that the Land Bank transferred to homeowners as part of the Side Lot Transfer program. While this program has benefited many residents, in these areas, privately owned side lots reduce the amount of land available for a new use.



Figure 7.7 Potential urban farming cluster I



Figure 7.8 details properties in cluster I (Figure 7.6), highlighting existing conditions on Land Bank properties. The image shows mature trees and dense scrub, particularly along the interior borders between lots. Clearing these interior borders in order to enable farming on contiguous lots is an unavoidable up front cost in most residential areas in Flint.

Figure 7.8 Potential urban farming cluster I with highlighted properties

Figure 7.9 shows a potential urban farming site on E. Ridgeway Avenue south of Bonner Park. This site has over an acre of contiguous, Land Bank held vacant property. This property also appears in Figure 7.2.

This site reveals two further opportunities for implementation. The six city-owned lots (indicated by blue crosshatching) could expand the potential farming site by over a half-acre. The Land Bank might consider negotiating with the city for control of these lots.

The second opportunity in this site is the proximity to Bonner Park. As mentioned in Chapter 3, siting an urban farm or any type of urban agriculture near an existing “green amenity” can help link green spaces that create blocks or corridors,⁵ and serve to revitalize an underutilized park.

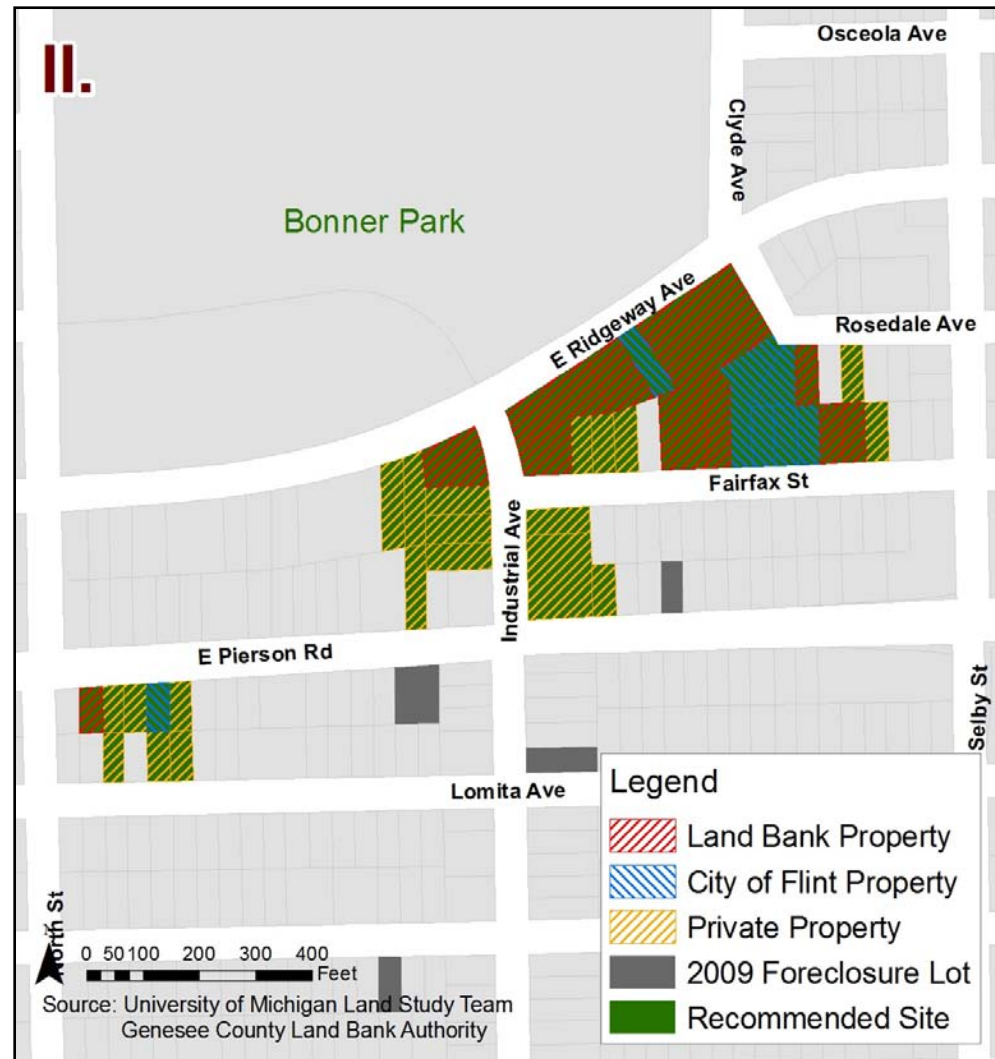


Figure 7.9 Potential urban farming sites in cluster II

⁵ L. Gaido and N. Wildfire, *Vacant to Vibrant: Greening Vacant Lots for Pittsburgh’s Sustainable Neighborhood Revitalization*, (Pittsburgh: Carnegie Mellon University, H. John Heinz III, School of Public Policy and Management, 2006).



Figure 7.10 Potential urban farming cluster II with highlighted properties

Figure 7.10 details selected properties in cluster II (Figure 7.6), highlighting existing conditions on Land Bank, private and city-owned properties. The northern, large Land Bank property shown in red in Figure 7.10 satisfies criteria for urban farming and is adjacent to a city-owned park. The site is hilly and overgrown with trees and shrubs. Though clearing the land presents a challenge to starting to farm the site, it offers other benefits that make it a good option for urban farming.

- The site is a large area of Land Bank owned land, and can be used immediately without acquiring additional lots.
- Multiple potential urban farming sites exist nearby, allowing for “clustering” of farming sites (see Chapter 3).
- Proximity to the park might encourage educational or recreational programming such as learning gardens or other summer programs.

Figure 7.11 shows a cluster of properties at the northern border of the city along Carpenter Road. Currently, the Land Bank does not own enough properties to support a farming cluster.

This site reveals an opportunity to amass sufficient land for farming. Ten of the vacant lots are in tax foreclosure in 2009 (shown in dark grey).⁶ The Land Bank may choose to ask the county treasurer to bundle these lots to discourage private speculation and purchase.

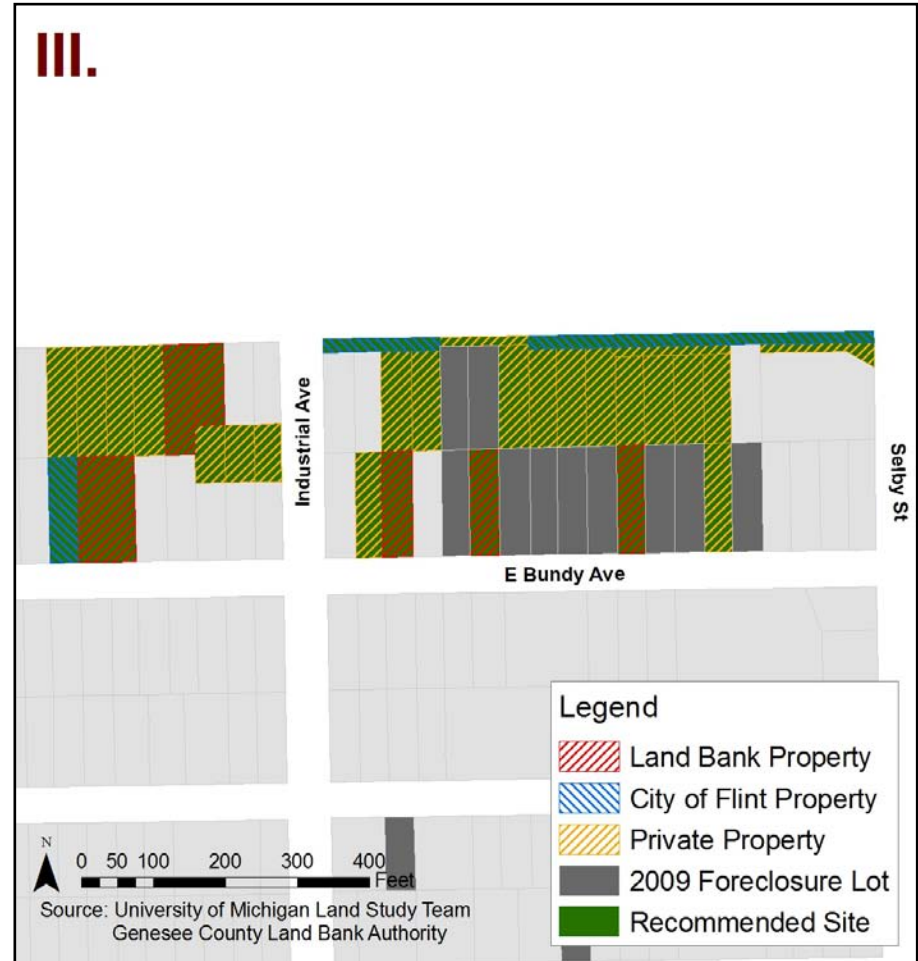


Figure 7.11 Potential urban farming cluster III

⁶ Genesee County Land Bank Authority.



Figure 7.12 Potential urban farming sites in cluster III with highlighted properties

Figure 7.12 details selected properties in cluster III highlighting existing conditions on Land Bank and privately-owned properties. The lots facing north, towards Carpenter Road, are extremely overgrown – leaving only a small walking path between the trees and the street. However, the contiguous vacant lots facing Bundy Road are a good option for an urban farming site. These lots are generally mowed and have few shrubs and trees, and a road borders the southern edge of the site, which maximizes sunlight and warmth on the site.

Figure 7.13 shows a potential urban agriculture cluster with six vacant areas of sufficient size for farms, biofuel crops, or tree nurseries. However, many of the vacant lots that make up these potential agriculture sites are privately owned and taxed at very low rates, meaning some owners capable of covering these minimal expenses have little incentive to relinquish the land.

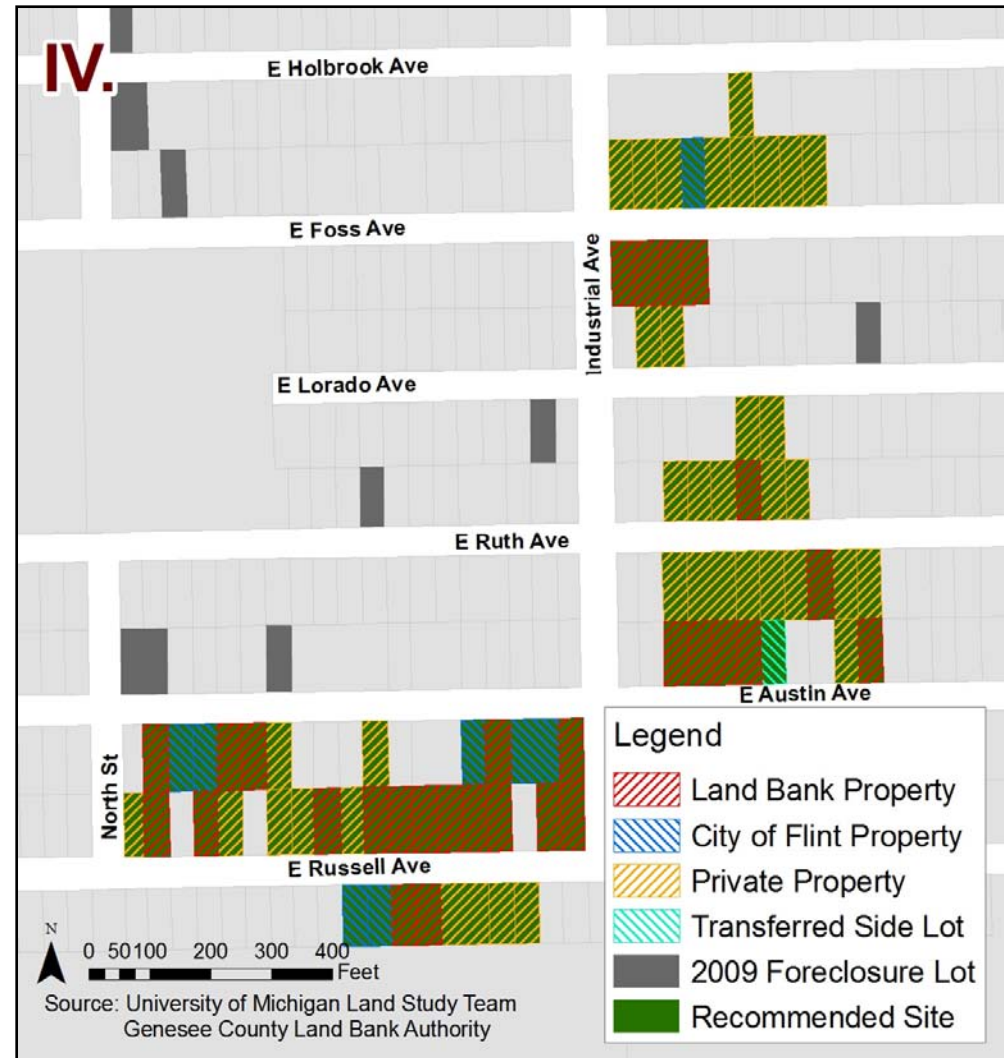


Figure 7.13 Potential urban farming sites in cluster IV



Figure 7.14 details selected properties in cluster IV (Figure 7.6), highlighting existing conditions on Land Bank, private, and city-owned properties. Cluster IV shows many contiguous properties, without common ownership, that require assembly in order to become useful for urban farm plots. The upper-right image from Figure 7.14 shows that residents already cultivate land in this area. Although some properties are wooded and may require initial preparation before they can be farmed, others will need virtually no clearing.

Figure 7.14 Potential urban farming sites in cluster IV with highlighted properties

Strategically Acquiring Land in Target Areas

The first two sections of this chapter showed how other municipal redevelopment authorities have reduced the scope of their work to focus on specific areas or particular uses, and how conditions in Flint suit these approaches. Though much vacant land exists in the city, a great deal of land is still privately owned and therefore currently inaccessible. The easiest approach is for the Land Bank to purchase the land at a reasonable price. In fact, owners of vacant property may be interested in selling their land. If the Land Bank is unable to purchase a property outright, there are several approaches to gain ownership or access to a privately owned vacant residential lot.

If...

...the owner is unwilling to sell vacant property:

Negotiate an in-kind trade with owner: If the vacant lot cannot be purchased, the Land Bank might consider negotiating an in-kind trade. For example, if the owner allowed an urban farm on his or her property, a share of the produce might be offered in exchange for access (such as the produce “shares” in Community Supported Agriculture—see Chapter 3), or the Land Bank might consider trading lots with individual owners.

...the city owns the lot:

Negotiate for desired lots: The City of Flint owns many lots that would be useful for potential projects. For some lots, the City might be willing to donate the land to the Land Bank. If not, the Land Bank might consider buying or trading the desired lot for another elsewhere in the city.

...the property has occupied housing:

Assist owner in moving to an intact neighborhood: The Land Bank currently owns houses across the city. The Land Bank might attempt to offer homes to homeowners who may want to leave a dilapidated neighborhood but know they could never sell their home.

However, the Land Bank would likely find it unmanageable to pursue these strategies to assemble many potential use sites citywide. Instead, this plan recommends that the Land Bank focus on target areas in the city. An example of a program that focuses municipal resources on a target area is reviewed in Figure 7.15. Although this case study addresses housing and redevelopment, the techniques utilized for strategic acquisition may also be used to assemble vacant land for new uses.

Case Study: Baltimore

Baltimore, Maryland is a large city (population 640,000) about an hour north of Washington DC. Like Flint, Baltimore has lost one third of its population since 1950. In 2002, Baltimore had a 14% housing vacancy rate, the fourth highest in the nation. Mayor Martin O'Malley created "Project 5000," a goal for the city to acquire 5000 vacant lots in two years – vacant lots that the Mayor called "dead capital." The city strategically acquired land through tax sale foreclosures, through transfer from the Housing Authority, and by asking local law firms and title companies for help in clearing titles. In conjunction with this plan, the city also began aggressive and strategic code enforcement through the TEVO program.

Targeted Enforcement for Visible Outcomes (TEVO) is a program focused on 6000 vacant properties on otherwise stable blocks in Baltimore. The goal of the program is to prevent these dilapidated houses from destroying the property values of the other houses on the block, leading to disinvestment and blight.

The city uses a block-by-block assessment to determine which transitional blocks are being threatened by derelict houses. The code enforcement division was spread thin over the 16,000 vacant properties in Baltimore; the TEVO plan refocuses their work on the 6,000 most critical houses, while the remaining 10,000 vacant homes get inspected at a much slower rate. Negligent owners are given thirty days to respond to the code enforcement summons, and owners are expected fix it up themselves or quickly pass it on to someone who will.⁷

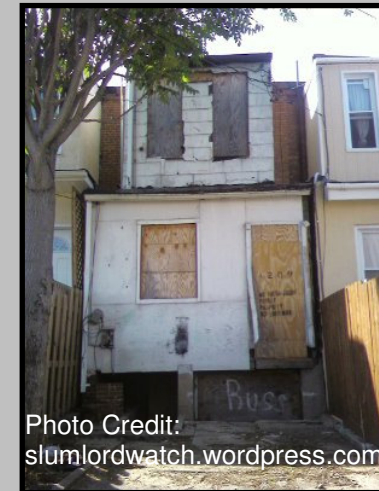


Figure 7.15 Target areas - Baltimore

⁷ The United States Conference of Mayors, "Baltimore Mayor O'Malley's Project 5000," http://www.usmayors.org/usmayornewspaper/documents/o5_01_06/baltimore2.asp, Accessed 1 May 2006; National Vacant Properties Coalition, "Strategies and technical tools," <http://www.vacantproperties.org/strategies/tools.html>, Accessed 3 June 2009; Doug Donovan, "Project targets vacant housing: city gets tough on 'blocks we can save'," *Baltimore Sun*, (18 January 2005).

Though Flint is a much smaller city than Baltimore, neither city has enough staff to pursue strategic acquisition of every vacant property or house. However, by identifying strategic areas and focusing on specific goals— in this case to assemble sufficient land to clear, not homes to save – the Land Bank could make a big difference in a target area.

Ranking Vacant Properties

Strategic implementation requires good information. This final section proposes a method whereby the Genesee County Land Bank Authority might determine which properties are important for land assembly. An example of such a ranking system is reviewed in Figure 7.16.

Case Study: Philadelphia

Philadelphia, Pennsylvania is a large city (population 1.4 million), and is one of the oldest big cities in the United States. The city has lost 600,000 residents since the 1950s and, as of 2002, was left with 31,000 vacant lots, 26,000 vacant houses (about 8,000 of those vacant houses were in immediate danger of collapse). About 1/4 of its residents live below the poverty line, and many city neighborhoods have experienced disinvestment, crime, and abandonment. In 2002, Mayor John F. Street unveiled the Neighborhood Transformation Initiative (now housed in the city's economic development department) to eliminate blight, redevelop land, assemble land for reuse, and plan with, and for, communities.

The Neighborhood Transformation Initiative (NTI) and the Philadelphia Housing Authority have conducted a survey of all vacant lots in the city. These organizations used Geographic Information Systems (GIS) mapping to create the Decision Support Model, which determines relationships between properties. This model weighs factors such as structure condition and ownership, and allows NTI to identify critical parcels for acquisition, demolition, or development.⁸

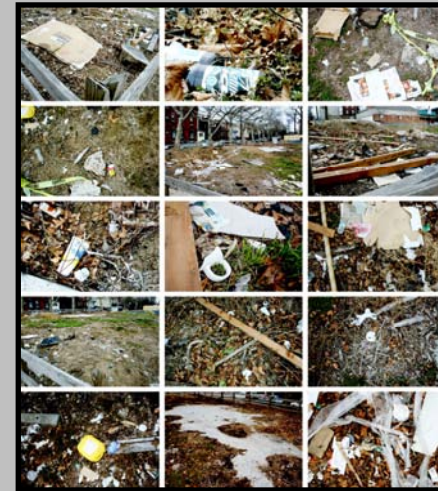
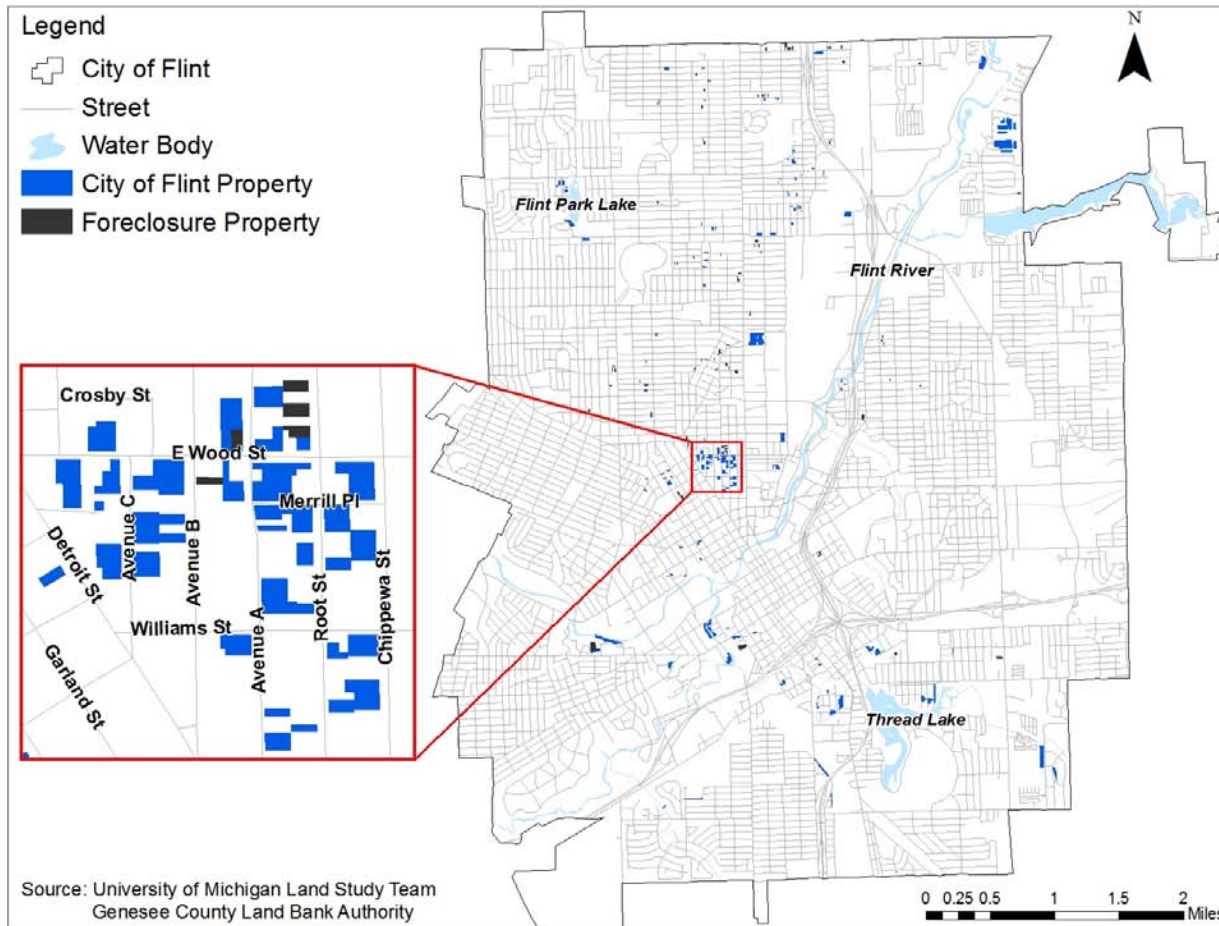


Photo Credit:
slumlordwatch.wordpress.com

Figure 7.16 Strategic property identification – Philadelphia, PA

⁸ Mayor John F. Street, “Philadelphia’s Neighborhood Transformation Initiative (NTI): Restoring vitality to City of Brotherly Love,” http://www.mayors.org/usmayornewspaper/documents/04_15_02/philadelphia.asp, Accessed 15 April 2002; Neighborhood Transformation Institute, <http://www.phila.gov/nti/whatisnti.htm>, Accessed 11 June 2009; Great Lakes Environmental Finance Center (GLEFC), *Best Practices in Land Bank Operation*, (June 2005).



This plan recommends a property ranking method using Geographic Information Systems (GIS). Since the primary challenge to implementing potential new uses is supplying sufficient contiguous lots, this model looks for properties to acquire among two possible sources of Land Bank property: lots in the foreclosure process and city owned lots.

Figure 7.17 shows all sites where three or more contiguous Land Bank parcels are bordered by at least one city owned lot or 2009 tax foreclosure property. Land Bank properties are not shown. This GIS method results in a list of over 100 properties in foreclosure that the County Treasurer might bundle in order to assure that the properties become Land Bank holdings.

Figure 7.17 City of Flint and foreclosed properties for potential strategic lot and land assembly with sample area enlarged

Adversity to Advantage

This plan examined how to locate and support emerging new uses for clusters of vacant lots, accounting for the role of future vacancy, all to help inform decisions about Flint's future. In Flint, vacant residential land is an increasingly plentiful resource, offering new possibilities and opportunities to enrich the lives of residents. The Land Bank works to realize this potential, and this document strives to assist this organization in that work.

APPENDIX: Data Sources for Maps

1. Data from the Genesee County Land Bank Authority:
 - a. City of Flint boundary
 - b. Streets
 - c. Water bodies
 - d. Parcels (including vacant lots, parks, and zoning information), 2008
 - e. Land Bank properties, 2008
 - f. Foreclosure properties, 2009
 - g. Aerial photos
2. Data from the Genesee County Metropolitan Planning Commission:
 - a. Proposed trails
3. Data from the U.S. Census Bureau:
 - a. Percent in poverty by census block group, 2000
 - b. Population by race by census block group, 2000
4. Data collected by the authors, the “University of Michigan Land Study Team,” in field surveys:
 - a. Residential vacancy by block
 - b. Cared-for vacant lots by block
 - c. Percent of dilapidated houses by block