

# What Local Governments can do to Promote Local Food Production through Beginning Farmer Access to Land



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## **Executive Summary**

The changing demographics of today's farmers is contributing to large amounts of farmland transition in this country. At the same time, consumers are demanding to know more about their food, including where and how it is produced. Communities across the country have a vested interest in ensuring farmland stays productive and out of development as well as in fostering local and regional food systems responding to these new demands. Assisting beginning farmers in Wisconsin, a major agricultural producer, represents one way to manage this transition. These next generation farmers are critical to furthering sustainable agricultural practices and ensuring farming remains a viable economic profession. Access to land and capital are two of the central issues beginning farmers face when starting their new ventures. A partnership with the Planning and Zoning Department in Fitchburg, Wisconsin, a small community located south of Wisconsin's capital, led to a better understanding of ways local governments can assist beginning farmers with accessing one of these central constraints: land. Fitchburg is a city of about 26,000 people located in proximity to a larger metropolitan region. Agricultural land comprises approximately half of the City's land base. Interviews, GIS mapping, and examination of Fitchburg's current environment related to local food contributed to the recommendations found at the end of this report. They include hiring a third-party land manager to support beginning farmer development, and further analysis of the potential parcels identified for small-scale agriculture for water access and landowner support.

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## Definition of Terms

**Access to Land:** One of the biggest challenges beginning farmers face is finding affordable, and secure land either to rent or own.

**Beginning Farmer:** Those who have operated a farm for 10 years or less either as a sole operator or with others who have operated a farm for 10 years or less. Beginning farmers tend to be younger than established farmers and to operate smaller farms or ranches.<sup>1</sup>

**Certified Agricultural Zoning District:** Certification of an ordinance means that the zoning district is consistent with chapter 91, Wis. Stats (Farmland Preservation), and the ordinance will not allow uses within the district beyond those enumerated by statute. Once an ordinance is certified and adopted, landowners with land covered by it may be eligible to claim farmland preservation tax credits.<sup>2</sup>

**Farmland Transition:** The responsibility for a piece of agricultural land is changing hands.<sup>3</sup>

**Food System:** a collaborative network that integrates sustainable food production, processing, distribution, consumption and waste management in order to enhance the environmental, economic and social health of a particular place.<sup>4</sup>

**Urban Service Area (USA):** An USA is defined as an area in and around existing communities, which are most suitable for urban development and capable of being provided with a full range of urban services, including sewer and water.<sup>5</sup>

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<sup>1</sup> Ahearn, M. and Newton, D. 2009. Beginning Farmers and Ranchers. *United States Department of Agriculture*. Accessed at: <<http://www.ers.usda.gov/publications/eib-economic-information-bulletin/eib53.aspx>>

<sup>2</sup> Wisconsin Department of Agriculture, Trade, and Consumer Protection. 2016. Farmland Preservation. *Wisconsin Dept. of Agriculture, Trade and Consumer Protection*. Accessed at: <[http://datcp.wi.gov/Environment/Working\\_Lands\\_Initiative/Farmland\\_Preservation\\_Zoning/](http://datcp.wi.gov/Environment/Working_Lands_Initiative/Farmland_Preservation_Zoning/)>

<sup>3</sup> Grimsbo-Jewitt, J., Lewis, H., Baumhardt, A., and Farmer's Legal Action Group. 2013. Farm Transitions Toolkit. *Minnesota Institute for Sustainable Agriculture*. Accessed at: <<http://landstewardshipproject.org/farmtransitionsacknowledgements>>

<sup>4</sup> Sustainable Agriculture Research and Education Program. 2015. Defining Sustainable Community Food Systems. *UC Davis Agricultural Sustainability Institute*. Accessed at: <<http://asi.ucdavis.edu/programs/sarep/research-initiatives/fs/sfs/defining-sustainable-community-food-systems/>>

<sup>5</sup> Capital Area Regional Planning Commission (CARPC). 2003. Urban and Limited Services Area. *CARPC*. Accessed at: <[http://www.capitalarearpc.org/USA\\_overview.html](http://www.capitalarearpc.org/USA_overview.html)>

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## Introduction

### *Project Objectives*

This report is intended to expand understanding of how local governments can play a role in increased local food production within its borders through beginning farmer development in Fitchburg, Wisconsin. This will be accomplished by understanding the opportunity for beginning farmer land access through identifying potential available land base in Fitchburg, Wisconsin utilizing GIS mapping, and what other organizations/individuals in the area are doing to promote local food production. The opportunities and barriers identified through mapping and interviews will lead to a set of recommendations, which public officials may utilize to increase beginning farmer opportunities in their municipality as they move to diversify their agricultural land base.

### *Significance of the Planning Issue<sup>6</sup>*

The American Planning Association (APA) describes food systems as a central planning issue as it has significant implications for community health, the environment, and local economies. They also implicate the industrial food system for masking negative externalities and in turn promote planners' active involvement in local and regional food system planning. Specifically, the APA's 2007 *Food System Planning: Why is it a Planning Issue* suggest planners utilize the following policy recommendations to engage with their community's or region's food system (Figure 1).

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#### Policy Recommendations for Food System Planning

Enhance the viability of regional farms by ensuring the stability of the **agricultural land base** and infrastructure

Make the city into a value-added center for **locally-grown** food products

Because food and agriculture are central to the local economy of the city and county, a strong commitment should be made for **protection, growth, and development** of these sectors

Examine ways to support a regionally **sustainable food system** that gives priority to area food producers and retailers

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*Figure 1: APA Policy Recommendations for engaging in regional and local food systems*

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<sup>6</sup> American Planning Association. Food System Planning: Why is it a Planning Issue? APA. Accessed at: <<https://www.planning.org/resources/ontheradar/food/whyplanningissue.htm>>

## Fitchburg, Wisconsin

The following explores how to recommend approaches to policies that will assist beginning farmer access to land and adhere to Fitchburg’s zoning code, and previous plans and studies’ goals, objectives, and/or policies. Fitchburg, Wisconsin lies immediately to the south of Madison, Wisconsin in Dane County, and has a population sitting at around 26,000 people (Figure 2). The city’s agricultural resources make up about half of its total land area. According to an informal survey<sup>7</sup> undertaken in 2012, Fitchburg currently has over 11,000 acres in production, with almost half of this total acreage rented out. This same survey recorded 144 agricultural landowners, listing only 17 of these as active resident farmers. The majority of the land in production is currently devoted to corn and soy production, or in other words conventional style agriculture. Fitchburg’s soils

also contribute to its agricultural success, as “almost 80 percent of the city’s soils are in the top four soil classifications, which are suitable for cultivation”<sup>8</sup>. In all, Fitchburg represents an interesting case study to explore the opportunities for beginning farmer access to land as the city has enacted land use controls, including farmland preservation zoning, to ensure lands outside of the city’s Urban Service Area (USA) remain in agricultural use. Table 1 shows the three main zoning districts representing agricultural land use in Fitchburg with relevant permitted and conditional uses that may pertain to beginning farmers.<sup>9</sup>

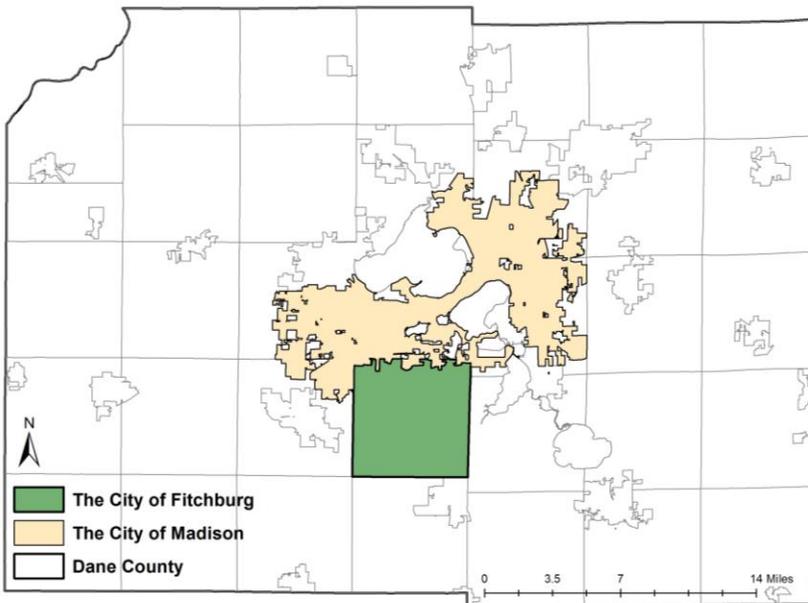


Figure 2: Regional map showing the location of Fitchburg, Wisconsin.

<sup>7</sup> Cohee, Roger. 2012. Rural Farm Demographics. *City of Fitchburg Agriculture and Rural Affairs Committee*

<sup>8</sup> Fitchburg Planning Department. 2014. Farmland Preservation Plan. *City of Fitchburg*. Page 17. Accessed at: <<http://www.fitchburgwi.gov/DocumentCenter/Home/View/9488>>

<sup>9</sup> City of Fitchburg. Chapter 22, Zoning Code Accessed at:

<[https://www.municode.com/library/wi/fitchburg/codes/code\\_of\\_ordinances?nodeId=TIILAUSDE\\_CH22ZO](https://www.municode.com/library/wi/fitchburg/codes/code_of_ordinances?nodeId=TIILAUSDE_CH22ZO)>

Table 1: Fitchburg agricultural zoning districts

	Purpose	Permitted Uses	Conditional Uses
<b>A-X</b> (Min. of 35 acres)	<ul style="list-style-type: none"> <li>-The only certified agricultural zoning district</li> <li>- Preserve productive agricultural land for food and fiber production</li> <li>- Maintain a viable agricultural base to support agricultural processing and service industries</li> <li>- Comply with the provisions of the Farmland Preservation Law (for Farmland Preservation Tax Credits)</li> </ul>	Agricultural Uses, Undeveloped Natural Resources Areas, Agricultural Accessory Uses (Roadside Stands, Wind Tower, Ag Entertainment Activities)	A second or subsequent single-family farm residence or conversion of a single-family residence into a 2-family residence
<b>A-T</b>	<ul style="list-style-type: none"> <li>- Provide a non-certified agricultural zoning district to preserve productive farm operations including land used for the production of specialty crops such as mint, sod, fruits and vegetables</li> </ul>	Same as A-X	Same as A-X
<b>A-S</b>	<ul style="list-style-type: none"> <li>- For areas where smaller agricultural parcels form a portion of a contiguous agricultural block of land</li> <li>- Intended to ensure that urban agriculture and community gardens in the urban service area are located to meet the needs for local food production</li> </ul>	Agricultural uses with max. of one animal unit for each full acre, Structures and improvements that are consistent with agricultural uses such as, barns or sheds for farm equipment	Additional livestock over the one animal unit per full acre

In regards to continued farmland preservation initiatives within the city, Fitchburg updated their *Farmland Preservation Plan*<sup>10</sup> in 2014. The goals/objectives and supporting policies identified illustrate their commitment to fostering a more diverse, and local food system. They include: to protect and maintain agriculture as a significant resource and economic viability within Fitchburg, and to preserve agricultural land as a resource for the use and benefit of current and future generations. This can be accomplished in part by evaluating city incentives to encourage farmers to invest in improvements to their farm operations, or to diversify their agricultural operations to address the changing farm economy and encouraging the purchase and consumption of local food production. One way Fitchburg can reach the goal of higher diversification and local food production is by promoting access to land for beginning farmers interested in the type of farming hitting these goals: small-scale, direct market, vegetable farming.

<sup>10</sup> Fitchburg Planning Department. 2014. Farmland Preservation Plan. *City of Fitchburg*. Accessed at: <<http://www.fitchburgwi.gov/DocumentCenter/Home/View/9488>>

## Promoting Fresh Market Local Food Production - Opportunities for Fitchburg, WI

Trends currently point to an increase in government policy related to local and regional food systems in response to rising consumer demand and interest.<sup>11</sup> Recently, consumers have been questioning how their food gets to their plate. The broader food system in this country, under increasing scrutiny, has gained attention for its wider environmental and social implications. In 2014 alone, local food sales totaled an estimated \$11.7 billion.<sup>12</sup> These sales were calculated using sales via direct-to-consumer and intermediated, e.g. regional food hubs, marketing channels. For context, these sales were up from just \$5 billion in 2008.

Specifically, studies have shown the positive economic impact of transferring from commodity crops to fresh-market vegetables (Image 1). The Southern Wisconsin Food Hub Feasibility report used information from the National Agricultural Statistics Service in 2010 to state “Growers could benefit from the significantly higher market value of fresh-market crops by converting acreage from commodity crops. Initial estimates of sales per acre for fresh market vegetables ranged from \$5,000- 10,000 vs. \$950 on average for commodity crops<sup>13</sup>.” Studies also show diversification from a single commodity crop to multiple crops can reduce the risk of relying on one commodity for returns.<sup>14</sup> For example, the 2015 Wisconsin agricultural statistics data shows both corn and soy bean prices are down from the previous year having implications for growers working with either of these crops.<sup>15</sup> In 2015 corn prices stood at \$3.40 down from \$3.67 per bushel in 2014. Similarly, soybeans stood at \$8.50 per bushel in 2015 down from \$10 per bushel in 2014. This is especially telling for Fitchburg where majorly corn and soy are grown, and shows the opportunity diversification towards local food production can bring for current growers or beginning farmers. It is also important to note Fitchburg lies in proximity to the Dane County Farmers Market as well as hosts its own weekly market on E Cheryl Pkwy, or at the Fitchburg Community Center depending on the season. The Dane County Farmers Market is the largest producers only farmers market in the country. Dane County also boasts numerous restaurants, breweries, and other businesses committed to supporting Dane County’s local food system.

Positive side effects from encouraging local food production in Fitchburg also include health and environmental benefits. Facilitation towards increased consumption of local produce could work towards addressing diet-related health issues including obesity and heart disease.<sup>16</sup> A recent Health Impact Assessment (HIA) in Fitchburg’s Northern Fish Hatchery Road Neighborhoods listed obesity rates for this area as the highest in the city<sup>17</sup> showcasing how increased access to fresh produce from increased local food production could impact the area positively. In regards to the environment, numerous benefits have been recorded from implementing sustainable production practices working small-scale diversified vegetable farms. These include increased soil health, pollinator habitat, and biodiversity, as well as decreased pesticide application, runoff, and soil erosion.



Image 1: Image illustrating fresh-market vegetables

<sup>11</sup> Low, Sarah A., Aaron Adalija, Elizabeth Beaulieu, Nigel Key, Steve Martinez, Alex Melton, Agnes Perez, Katherine Ralston, Hayden Steward, Shellye Suttles, and Stephen Vogel. 2015. Trends in U.S. Local and Regional Food Systems: A Report to Congress. *United States Department of Agriculture*. Accessed at: <<http://www.ers.usda.gov/media/1763057/ap068.pdf>>

<sup>12</sup> United States Department of Agriculture (USDA). 2015. Local and Regional Food Systems. *USDA.gov* Accessed at: <<http://www.usda.gov/wps/portal/usda/usdahome?contentid=usda-results-local.html>>

<sup>13</sup> Dane County Planning and Development Department. 2011. Southern Wisconsin Food Hub Feasibility Study. *Dane County*. Accessed at: <[https://pdf.countyofdane.com/Purchasing/RFI\\_111101\\_Packing\\_House\\_Study.pdf](https://pdf.countyofdane.com/Purchasing/RFI_111101_Packing_House_Study.pdf)>

<sup>14</sup> MacDonald, J., Korb, P., and Hoppe, R. 2013. Farm Size and the Organization of U.S. Crop Farming. *The United States Department of Agriculture*. Accessed at: <<http://www.ers.usda.gov/media/1156726/err152.pdf>>

<sup>15</sup> National Agricultural Statistics. 2016. Wisconsin Ag News: Crop Values. *The United States Department of Agriculture*. Accessed at: <[http://www.nass.usda.gov/Statistics\\_by\\_State/Wisconsin/Publications/Economic\\_Releases/WI\\_Crop\\_Values\\_02\\_16.pdf](http://www.nass.usda.gov/Statistics_by_State/Wisconsin/Publications/Economic_Releases/WI_Crop_Values_02_16.pdf)>

<sup>16</sup> See 13

<sup>17</sup> Madison and Dane County Public Health Department. 2014. Appendix C: Nine Springs Property Health Impact Assessment. *Fitchburg Parks Commission*. Accessed at: <<http://www.fitchburgwi.gov/DocumentCenter/View/8505>>

## Transitioning Farmland

At the same time as consumer interests are changing, farmers in the United States are reaching retirement age, and looking to either transition away from farm ownership, change their production practices, or rent their land to new individuals for management. This report focuses solely on opportunities for beginning farmers' access to land during the farmland transition process. The 2012 United States Department of Agriculture's Census of Agriculture<sup>18</sup> reports the average age of the principal operator for farmland at 58.3 years old. Respectively, Dane County's average age of the principle operator from the same year was recorded at 57.7 years old. The 2012 Census of Agriculture also illustrated an 11 percent decrease in the number of farms across the state from just 2007 to 2012 pointing to farm consolidation, and/or continued development pressure. Concurrently between 2007 and 2012 the number of beginning farmers decreased by 20 percent.<sup>19</sup> This can be attributed, in part, to high start-up costs and capitalization needed to enter the agriculture production profession, and the difficulty of securing affordable land to purchase or in most cases rent. In fact securing adequate land to grow crops and raise livestock was a top challenge identified in the 2013-2014 surveys of participants in the American Farm Bureau Federation's Young Farmers and Ranchers program.<sup>20</sup> With 70 percent of farmland in this country expected to transition in the next two decades, it is increasingly important to guide this land to the next generation of farmers.<sup>21</sup>

Currently, the majority of resources local governments have at their disposal to encourage farmland transition towards beginning farmer land access are either federal or state programs. These include federal tax credit incentives and land conservation programs, and state Farm Link programs and grants. More work needs to be done providing local governments information on how they can better support local food production, and barriers that may arise when assisting beginning farmers with access to land. Fitchburg represents an opportunity for other municipalities in the area to use as a case study for their future endeavors as they already have utilized zoning as a tool to protect farmland from development. However, although zoning is the city's most powerful farmland preservation tool, A-T and A-S, the two uncertified farmland preservation districts, are still at risk for future development based on future land use demand.<sup>22</sup> Fitchburg has the opportunity to not only support conventional types of farming, but also small-scale diverse farms by expanding promotion of its other goals outside of zoning (Figure 3). The findings and discussion below will work to support this goal.



Figure 3: Figure illustrating two different types of landscapes the City of Fitchburg can support, Source: Milwaukee Journal Sentinel and UW Milwaukee Extension

<sup>18</sup> USDA Census of Agriculture. 2014. 2012 Census Highlights. *United States Department of Agriculture*. Accessed at: <[http://www.agcensus.usda.gov/Publications/2012/Online\\_Resources/Highlights/Farm\\_Demographics/#average\\_age](http://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Demographics/#average_age)>

<sup>19</sup> Feedgood, J., and Dempsey, J. 2014. Cultivating the Next Generation: Resources and Policies to Help Beginning Farmers Succeed in Agriculture. *American Farmland Trust*. Accessed at: < <https://www.farmland.org/publications>>

<sup>20</sup> See 19

<sup>21</sup> Shute, L. 2011. Building a Future with Farmers. *National Young Farmers Coalition*. Accessed at: < <http://www.youngfarmers.org/newsroom/building-a-future-with-farmers-october-2011/>>

<sup>22</sup> Fitchburg Planning Department. 2014. Farmland Preservation Plan. *City of Fitchburg*. Accessed at: <<http://www.fitchburgwi.gov/DocumentCenter/Home/View/9488>>

## Methods

Methods for analysis included GIS mapping and in-person interviews. GIS Mapping was utilized to identify areas on single parcels of land that could transfer over to a beginning farmer for small-scale, likely direct market vegetable, farming. Criteria were developed with the idea that certain areas within Fitchburg are not suitable for large-scale traditional agriculture as large farm implements may have difficulty accessing small pieces of land not fitting into larger parcel's current cropping patterns. The USDA states "moving larger pieces of equipment between fields takes more time and expense, and larger pieces also require more setup time at fields. For these reasons, bigger and faster equipment is most valuable where fields are large, flat, and contiguous<sup>23</sup>". Specifically, data from the City of Fitchburg regarding its 2014 aerial imagery, and the 2015 parcel and zoning layers were used to determine suitable areas. Using the editor tool in ArcGIS, areas within parcels with the following criteria were cut:

1. Parcels zoned A-X, A-T, or A-S (See Table 1)
2. The parcel was not within Fitchburg's Urban Service Area (USA)
3. A visual examination of each parcel's aerial imagery with the agriculturally zoned parcels set at 80% transparency to find portions of land that were not in production, or represented an area that was an outlet of a larger continuous cropped area
4. Areas identified for possible suitability were cut using the editor tool on a parcel-by-parcel basis
5. Areas selected, if in production, followed aerial imagery's crop patterns (Image 2)

It is important to note that identified areas should be given preference if they have road access, and/or are in the vicinity of infrastructure (buildings with potential for storage, cooling, and packing).

The interviews identified individuals working towards beginning farmer development and/or farmland preservation in Dane County in order to understand barriers and opportunities once available land base is identified for beginning farmer development in Fitchburg. The interviews were informal conversations, but roughly followed the questions found in Appendix A. They included individuals from a Dane County land trust, a farm incubator, and the University of Wisconsin (UW) Extension.

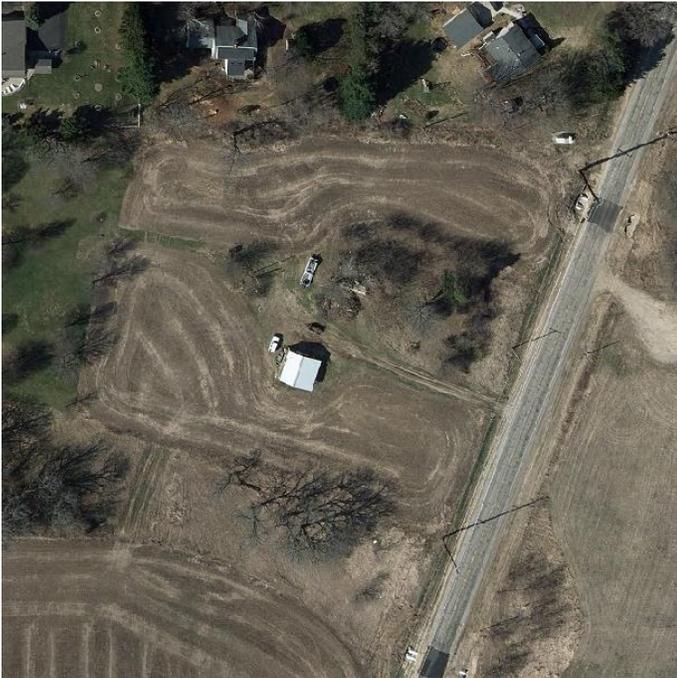


Image 2: Image showing parcel number 060928295102, and how crop patterns were visualized using aerial imagery

<sup>23</sup> MacDonald, J., Korb, P., and Hoppe, R. 2013. Farm Size and the Organization of U.S. Crop Farming. *The United States Department of Agriculture*. Accessed at: <<http://www.ers.usda.gov/media/1156726/err152.pdf>>

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## **Findings**

Stakeholder interviews with a local land trust, farm incubator and UW Extension, and GIS mapping pointed to multi-stakeholder interest and potential available land base for beginner farmer land access in Fitchburg, Wisconsin as well as identified future barriers to consider. The following breaks down the findings into five main categories: access to land, management challenges, lack of emphasis on small parcels, beginning farmer land security, and cultural and language barriers.

### ***1. Access to Land***

In total, 35 different areas were identified for potential suitability for beginning farmers interested in small-scale production ranging from 0.316-5.039 acres. Figure 4 and Table 2 illustrates the potential available land base suitable for small-scale agriculture utilizing the criteria discussed above, as well as the selected area's present condition as identified in the aerial imagery. The remaining four findings illustrate key barriers to implementing beginning farmer's small-scale production on the identified parcels of land, and come out of stakeholder interviews with a Dane County land trust, a farm incubator, and UW Extension.

### ***2. Management Challenges***

Overwhelmingly, all individuals pointed to adequate management of the land once a beginning farmer has gained access as being a central issue. This includes management of multiple leases, purchase and management of shared equipment, and other needs unique to small-scale vegetable production. The farm incubator represented a unique case study as a cooperative management style via a farmer-to-farmer mentorship program employing a farm manager to oversee day-to-day activities. This may illustrate what is needed in Fitchburg. On top of this, interviewees discussed reasons for not working on small-scale agriculture as they currently lack the expertise, as well as how no one is willing to provide the adequate infrastructure or manage multiple leases at this time. A future partnership would reach this need. It is also noted that to employ the type of expertise needed, adequate funding must be available.

### ***3. Lack of Emphasis on Small Parcels***

Organizations also pointed to the difficulty of working with small parcels when their larger goal is to address farmland preservation across large areas. For example, there exists a current lack of opportunities for organizations such as land trusts engaging in farmland preservation to also engage in beginning farmer access to land. It was reported that currently the organization has not overseen conservation easements for small-scale agriculture, although theoretically conservation easements could help young farmers gain capital for land purchase. The current focus is on locating large, contiguous areas for farmland preservation, and reduction of rural development/sprawl. Fitchburg may avoid this issue as they already have land zoned for agricultural preservation.

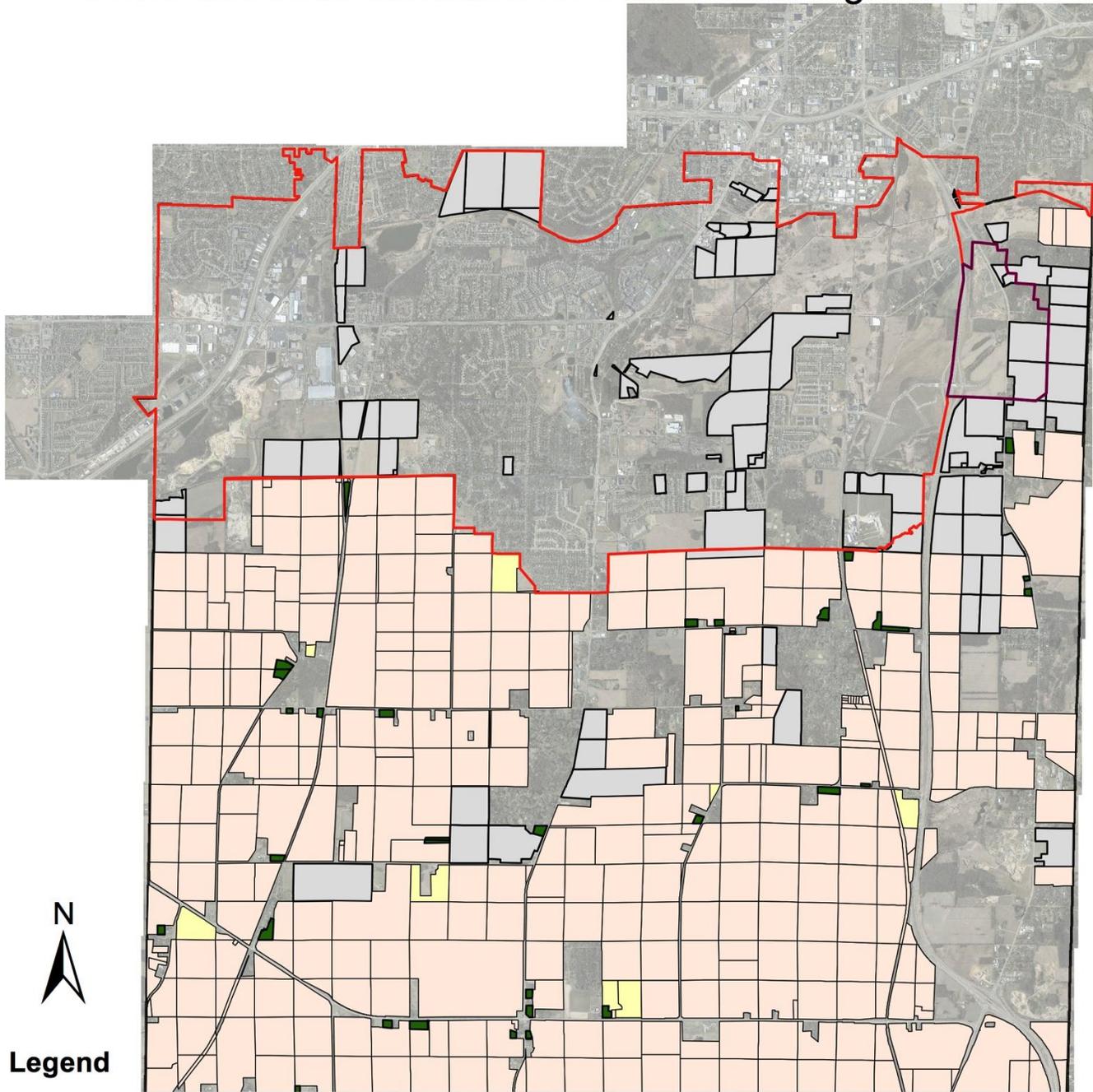
### ***4. Beginning Farmer Land Security***

Maximizing the security of beginning farmers on the land is an important factor. The interviews brought to light hesitation on behalf of the beginning farmer to sign a lease with a duration of a single year. This leads to the necessity of multi-year leases at the selected sites to create a higher sense of security for the beginning farmer.

### ***5. Cultural and Language Barriers***

Recognition of cultural and/or language differences, and how this may impact farmland transition represents a consideration. For example, it is noted that a beginning farmer might speak English as their second language. For this reason, having a land manager who is also bilingual is preferred.

# Fitchburg Agricultural Zoning: Potential Areas Identified for Small-Scale Agriculture



**Legend**

- Urban Service Area (USA)
- NEN USA-DNR Cond. Approval

**Zoning District**

- A-S
- A-T
- A-X
- Potential Sites for Small-scale Ag

0 0.5 1 2 Miles



Prepared by: Natalie Cotter  
 Source: Fitchburg Planning and Zoning Department  
 Date: February 2016  
 Projection: NAD 1983 Harn (WISCRS): Dane County Feet

Figure 4: Map illustrating potential areas for small-scale agriculture outside the USA in Fitchburg, Wisconsin subject to landowners' desires

Table 2: Information gathered from examination of aerial imagery and the attribute table from Figure 2 regarding potential locations for small-scale agriculture in the City of Fitchburg subject to landowners' desires

Parcel Number	Area (Acres)	Zoning	Bordering Parcel	Present Condition (as seen in aerial imagery)
060930495019	5.039	A-X		Proximity to bike path, road access, proximity to residential area, not in production
060932480709	4.101	A-X		Road access, bordered by trees, in production
060926280008	3.891	A-X		Road access, proximity to infrastructure, in production
060919180602	3.424	A-X	060919195301	Road and driveway access, proximity to infrastructure, bordered by trees, not in production
060917280918	3.190	A-X		Between a road and a bike path, proximity to infrastructure, in production
060919195301	3.058	A-X	060919180602	Road and driveway access, proximity to infrastructure, bordered by trees, not in production
060914490009	2.960	A-X	060914495004	Road access, proximity to infrastructure, in production
060912492702	2.934	A-X		Road access, proximity to residential area, in production
060920485012	2.814	A-X		Road access, proximity to infrastructure, in production
060928295102	2.769	A-T		Road access, proximity to infrastructure, in production
060914395005	2.738	A-X		Surrounded by trees, appears to border small-scale agriculture, in production
060914495004	2.725	A-X	060914490009	Road access, proximity to infrastructure, in production
060933197802	2.502	A-S		Road access, proximity to infrastructure, not in production
060915490012	2.371 + 1.530	A-X		Road access, proximity to infrastructure, in production
060930195102	2.209	A-X		Proximity to bike path, road access, proximity to infrastructure, in production

060914485006	1.952	A-X		Surrounded by trees and open space, small buffer between road and infrastructure access, in production
060933190011	1.880 + 1.584	A-X		Road and driveway access, proximity to infrastructure, in production
060929196002	1.861	A-X	060929187002	Surrounded by trees, in production
060932485008	1.805	A-X		Road access, in production
060929187002	1.731	A-X	060929196002	Surrounded by trees, in production
060930390104	1.712	A-X		Bordered by trees and land in production, behind residence, production status TBD
060927185413	1.679	A-X		Road access, bordered by trees, in production
060913485508	1.349 + 0.686	A-X		Road access, in production
060920385504	1.322	A-X		Road access (x2), borders residence, in production
060933380315	1.095	A-X		Driveway access, proximity to infrastructure, in production
060932390002	1.036	A-X		Road access, in production
060933485006	0.985	A-X		Road access, proximity to infrastructure, in production
060912492702	0.887	A-X		Production status TBD
060919480207	0.854	A-X		Road access, borders residence, in production
060923490000	0.681	A-X		Road access, in production
060922180952	0.543	A-X		Behind residence, not in production (however possible garden)
060922480013	0.316	A-X		Driveway access, not in production

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## Recommendations

The analysis led to five main recommendations. The recommendations recognize that additional areas for beginning farmers interested in small-scale agriculture may be found in other areas within the city. Further exploration into areas not zoned for agriculture as well as areas within the USA may be needed. It is also important to ground-truth results generated from aerial imagery (Image 3 and 4).



*Image 3: Portion of aerial imagery for parcel number 060917280918. The red plus symbol shows the location where Image 4 was taken*



*Image 4: Example of a ground-truth of results from GIS mapping for parcel number 060917280918*

### ***1. Future Exploration into Identified Sites: Water Access***

Small-scale vegetable farming needs access to water for adequate irrigation to be successful. The methods employed do not indicate whether or not the site has access to water. Specifically, it is recommended the City of Fitchburg determine which properties have on-site wells.

### ***2. Future Exploration into Identified Sites: Landowners Outreach***

Promoting landowner support for small-scale farming in the City of Fitchburg through discussing its numerous benefits will allow for beginning farmer development. Identifying the landowners of the selected areas for small-scale agriculture, and organizing some type of public outreach/participation event can assist in bringing individuals onboard. This can also represent an opportunity to advise landowners on the potential for land transfer towards more sustainable production practices, as well as how to connect with beginning farmers interested in starting their own farming venture and in renting land.

### ***3. Hire a Third-Party Land Manager***

Hiring a bilingual third-party land manager with experience in small-scale agriculture in order to understand the specific needs beginning farmers face can address the issue of management discussed in the interviews. This individual could manage multiple leases on private property as well as meet any day-to-day needs regarding on-site management including equipment sharing, and production-related questions. A third-party land manager could also help craft lease agreements working with both the landowner and beginning farmer, as well as connect landowners with beginning farmers seeking land.

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#### ***4. Develop a Toolkit with Supporting Material for Beginning Farmers to Access with Information on Land Tenure, and Production Activities***

Creation of a toolkit including supporting material for beginning farmers to access regarding production-related questions can be used to supplement any hands-on training. The Urban Agriculture Production Manual developed by the Community and Regional Food Systems (CRFS) project at the University of Wisconsin – Madison and supported by the United States Department of Agriculture (USDA) through the National Institute of Food and Agriculture is a type of resource that could be included in this toolkit, and can be found at <http://urbanagriculture.horticulture.wisc.edu>. The manual resulted from speaking with growers around the state and realizing a need for a centralized location to answer the various questions urban agriculturists have about their production-related activities. Examples and templates of long-term lease arrangements, and a city inventory of those looking to rent/buy land represent other tools that could be included. The tools could also be listed in multiple languages in response to the area’s demographics.

#### ***5. Support Production and Processing Infrastructure Development Outside the USA***

Infrastructure such as season extension structures e.g. hoopouses, pack and wash sheds, and coolers all represent possible needs by beginning farmers interested in small-scale, sustainable vegetable production. The city should consider supporting infrastructure development either through providing capital or directing individuals towards resources providing access to capital. Future research into a shared-equipment/shared-infrastructure system should also be explored.

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## Conclusion

Fitchburg, Wisconsin represents a city that has an opportunity to assist beginning farmer development ensuring its farmland stays not only in production, but also fosters a sustainable and local food system. Identifying areas of land that may be suitable for small-scale farming is the first step in addressing a central constraint for beginning farmers: access to land. Future considerations by the city may include outreach to landowners, identifying if there is water access on particular sites, hiring a third-party land manager, putting together a useful toolkit for beginning farmers to utilize, and supporting infrastructure development useful to beginning farmers outside the USA. By looking at what a local government in a small community can do to support beginning farmer access to land, and in turn their local food system, will contribute to building an equitable and sustainable food system both today and in the future. Planners play an important role in supporting these goals by bringing important insight into land use, interdisciplinary perspectives, and foresight into potential impacts from policy decisions connecting to local and regional food systems.



*Image 5: Fitchburg Farmer's Market patron showing support for local food production, Source: Fitchburg Chamber*

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## **Appendix A: Interview Questions**

### *Land Trust Interview Questions:*

How do you generally make connections?

- Outreach?
- Do landowners approach your organization?

On average do you see more conservation easements for open space/restored land vs. agricultural conservation easements?

In Dane County on average what percentage of market value for the land do you pay?

- Is the majority of funding coming from public funds? Donations?
- Is there a place for city funds?

Have you formed any partnerships with local communities?

Do you ever facilitate ownership transitions?

Do you see beginning farmers utilize funds from conservation easements to pay off any debt from land purchase?

### *Farm Incubator Interview Questions:*

What is your business model?

- What type of management style do you follow?

How much land, and how many farmers do you work with?

What is the application and acceptance process like?

How long can farmers stay on the land they currently farm on?

How are equipment and other infrastructure used/shared?

### *UW Extension Interview Questions:*

What kind of work do you currently engage in regarding local food production?

When supporting small-scale agriculture on county land, what is a central barrier?

What type of solutions do you see for better engaging with beginning farmers?

What type of solutions have already been attempted to support small-scale farming on county land?