

# Recommendations for the Community Gardens Program in Montgomery County Parks

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# **Executive Summary**

## **Context**

Montgomery Parks currently hosts a thriving community garden program that allows residents to come together and garden, which provides wholesome and sustainable food for families. Montgomery Parks currently manages eleven community garden sites with a variety of 200-, 300-, and 400-square foot plots throughout the County, in Bethesda, Rockville, Silver Spring, Gaithersburg, and Germantown. Each of the eleven community gardens are very popular and have waitlists for garden plots.

## **Problem**

The demand for community gardens is much higher than the eleven community gardens can currently accommodate. The community garden at the South Germantown Recreational Center is currently undergoing an expansion, but large waitlists will continue to exist in the other gardens. To handle this, Montgomery Parks needs to begin establishing new community gardens. However, with increasing urbanization and development, open green space in populated areas is hard to come by. The Parks Department is seeking a list of potential open spaces that could be converted into community gardens. They are also seeking best practices for compliance with the Americans with Disabilities Act in community gardens, and fundraising strategies to increase their budget and improve their flexibility in garden creation.

## **Approach**

To find potential community garden sites, we examined County parks and houses of worship, using ArcGIS to create a preliminary map of these locations in highly populated areas. Google Earth helped determine locations of viable options for community garden spaces. Area demographics in the chosen locations were gathered and analyzed. Best practices for ADA compliance were identified via site visits at existing gardens. Specific fundraising opportunities including grants and partnerships were researched and identified.

## **Results**

Eleven potential community garden sites were chosen. Eight were based in County parks and three at churches. Other potential locations for future community gardens are included in the Appendix. The report also identifies effective and ineffective structures and aspects of community gardens. After conducting funding research, four potential grants were selected, along with recommendations for partnerships with educational programs, nonprofits, faith-based organizations, and the development of a land trust.

## **Conclusions**

Recommended sites need further examination in site visits. When a site is determined viable for a community garden, discussions must begin with the park manager or religious institution leader. In terms of funding, community gardens should develop a stronger connection with the Montgomery Parks Foundation to apply for as many grants as possible, particularly the opportunities solely open to 501(c)(3) organizations. Collaboration through private-public partnerships should also be considered to connect to a variety of resources. Further research should assess the viability of nonprofit and faith-based partnerships, and the feasibility of creating a land trust for community gardens to preserve land for years to come.

## **Introduction**

The Montgomery Parks Department wants to expand their Community Gardens program. This can be done in two ways: the Department can expand one of their 11 existing gardens or establish a new community garden. This report has been created to help establish new gardens. New parks have been difficult to establish because of the lack of County open space due to increased urbanization and development.

The Parks department was also interested in other factors that go into creating community gardens, including a demographic examination to determine who uses community gardens the most and the populations that benefit the most from nearby community gardens. A review of ADA compliance in gardens will make a physical activity like gardening available to all people. Lastly, funding sources were researched to supplement the Department's budget and give it more flexibility in establishing gardens.

This paper first reviews the mapping used to find new community garden sites, with a detailed rationale for each site. It then reviews research on demographics, best practices for ADA compliance, and future fundraising opportunities.

## **Finding New Locations**

### **Mapping Introduction**

As a first step, this project created a list of potential community garden sites beginning with an initial criteria list. The criteria included kinds of locations examined and their proximity to transportation hubs. Houses of worship and parks were looked at because they are two of the County's largest property owners. Houses of worship were considered because they are community-based organizations that are often interested in extra-parochial activities and programs. They are also year-round institutions that are constantly maintained and have open space for parish activities.

Montgomery County Parks were also considered because they hold the largest amounts of open green space. It is also easier to establish community gardens within Montgomery County Parks because it would be an internal program and agreement; the establishment of community gardens includes an agreement and development plan between the Montgomery Parks main office and those in charge of an individual park.

Schools in Montgomery County are one of the three biggest property owners, as well. However, we did not examine schools due to prior concerns about how to maintain the community gardens during the summer and when school is not in session.

The major limiting criterion was accessibility via transit. The report considers areas within one mile of a Metro station within the County. This was chosen as the proximity boundary because metro stations are often transit hubs and have multiple bus lines that radiate out to nearby

neighborhoods. The one-mile radius was chosen because that is a feasible walking distance from a Metro station; there are usually bus stops even closer to each of the chosen locations.

## Initial Mapping

To create an initial map, we used ArcGIS to find all County Parks and houses of worship within one mile of a Metro station. Shapefiles for parks, houses of worship, wetlands, and Metro station were downloaded from the Montgomery County Parks website and a one-mile buffer created around each Metro station. The parks and houses of worship were clipped to delete locations outside the buffer. Wetlands in parks were deleted to show only potentially available land (see map below).

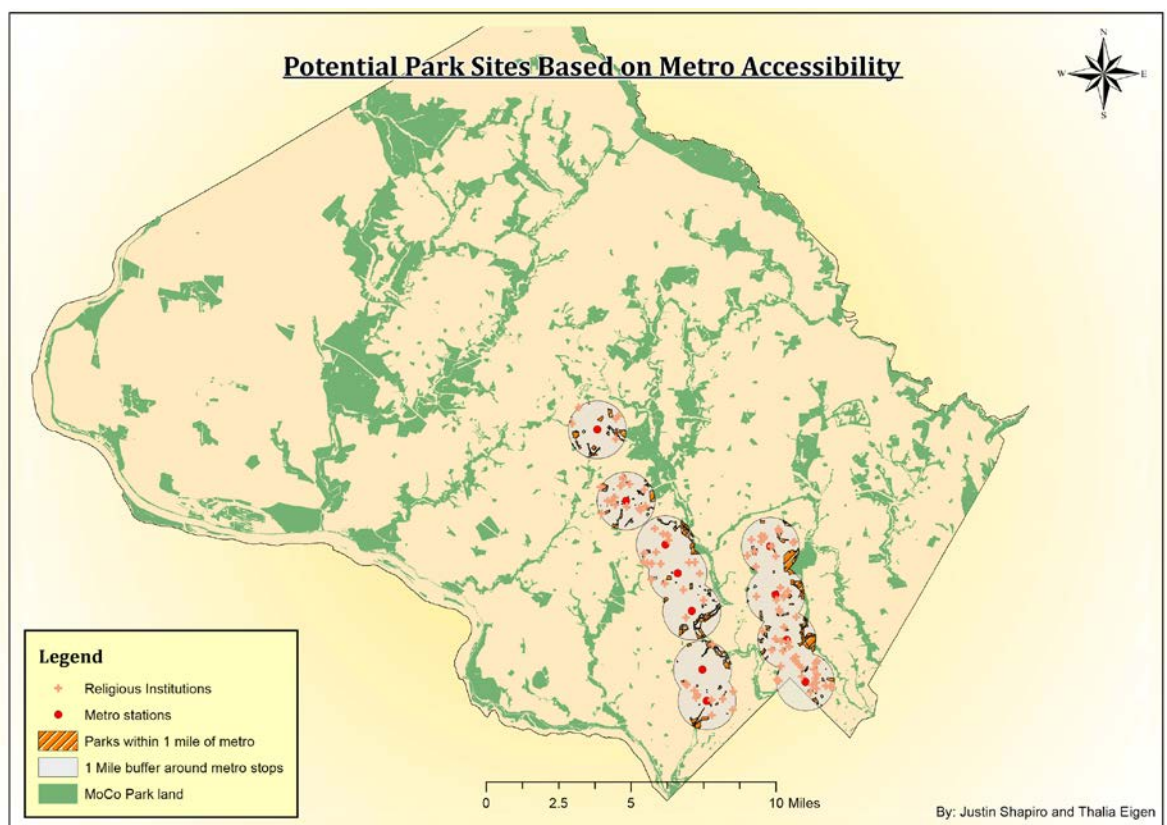


Figure 1: Potential Park Sites Based on Metro Accessibility

This scaled the number of houses of worship from 686 to 129, and parks from 798 to 173, showing potential sites in Germantown, Derwood, Rockville, Bethesda, Silver Spring, and Takoma Park.

## Google Earth Analysis:

Using Google Earth's "measure" tool and creating polygons around open and available areas, each potential site was looked at individually to find plots of land at least 5,300-square feet, the spatial requirement determined by Montgomery Parks. These plots had to be contiguous, open areas that received at least six to eight hours of direct sunlight each day. They also could not already be in use as park or community amenities. Potential locations had to have a parking lot with handicapped parking spaces on the property or street parking. Eleven locations met these criteria, the eight parks and three churches depicted in the map below.

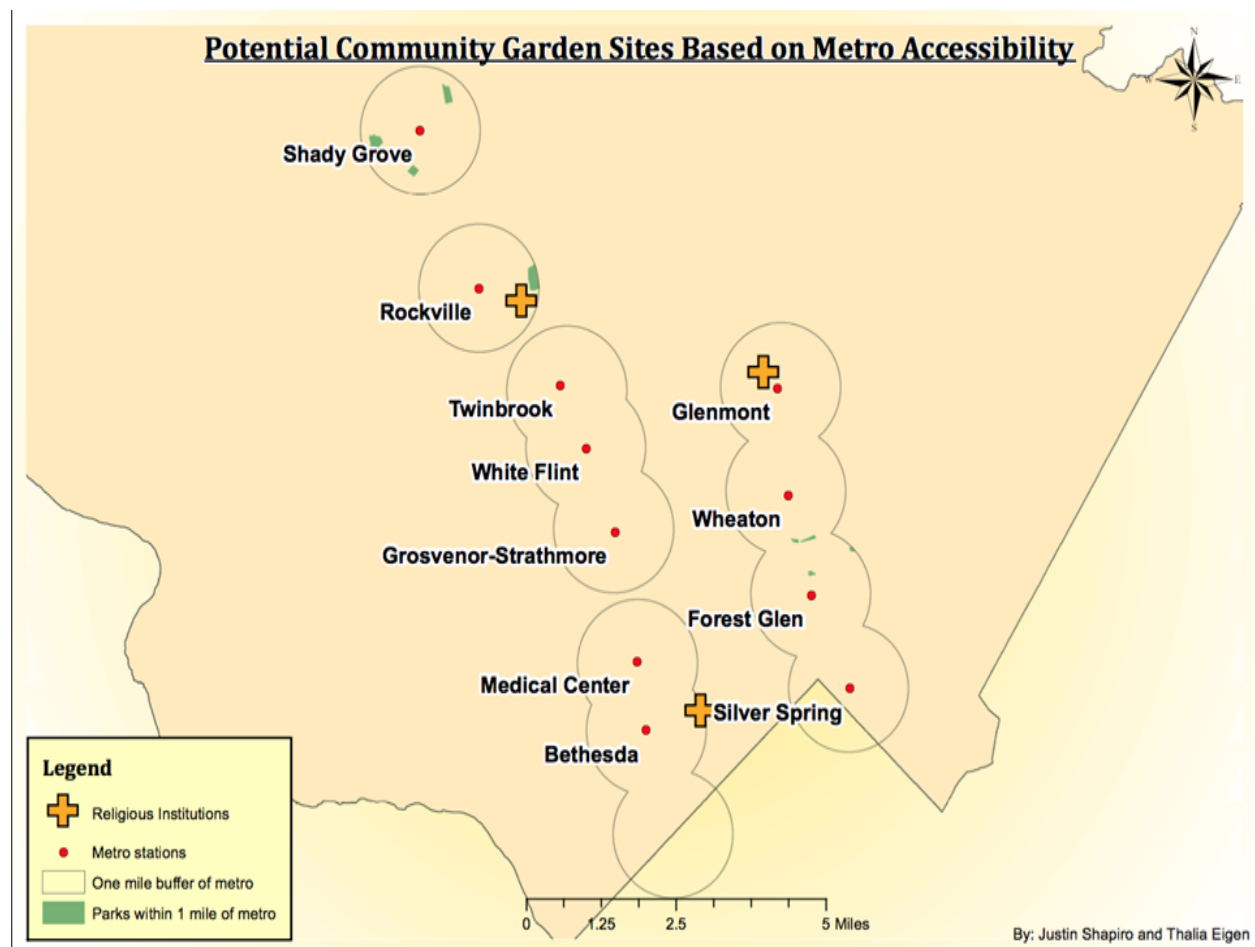


Figure 2: Potential Community Garden Sites Based on Metro Accessibility

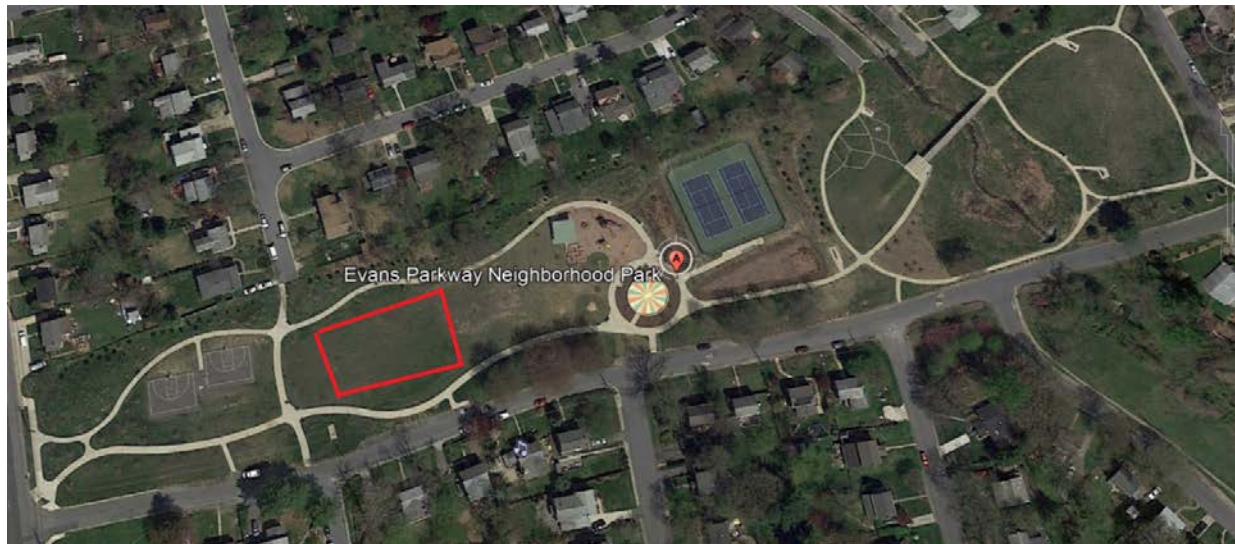


## Top Eleven Locations

*All images come from Google Earth*

### Evans Neighborhood Park

Evans Neighborhood Park is at 2001 Evans Parkway, Silver Spring, MD 20902. It has up to 8,000 square feet of available space. It is three quarters of a mile from the Forest Glen Metro Station and within half a mile of at least 30 bus stops. It has street parking in surrounding neighborhoods, but no designated parking lot. There is also full sunlight with no tree coverage.



### King Farm Park

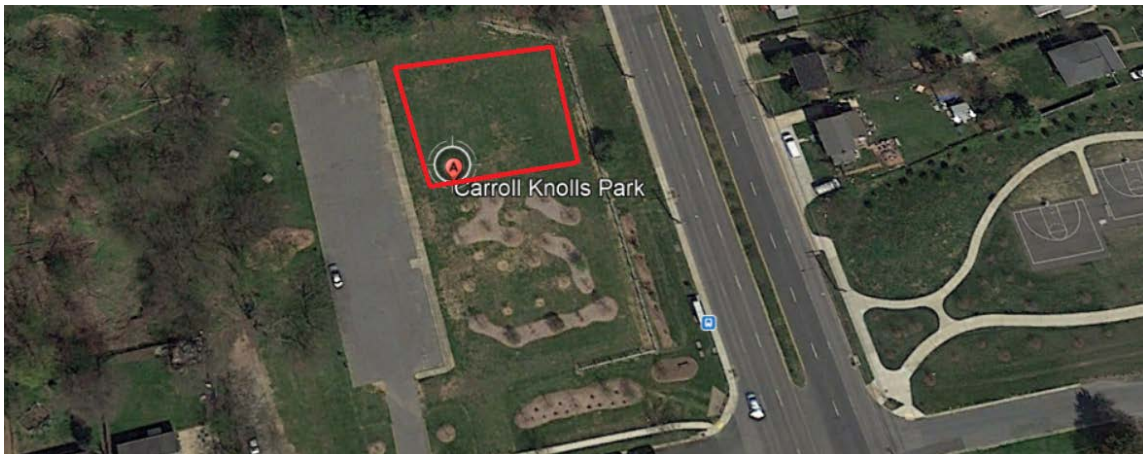
King Farm Park is located at 401 Watkins Pond Boulevard, Rockville, MD. It has more than 30,000 square feet of available space and is one-half mile from the Shady Grove Metro Station. It is also within half a mile of approximately 30 bus stops. There is street parking in surrounding neighborhoods, but no designated parking lot. There is full sun and no tree coverage.





### Carroll Knolls Local Park

Carroll Knolls Local Park is located at 10500 Georgia Avenue, Silver Spring, MD 20902 and has up to 8,000 square feet of available space. The park is three quarters of a mile from the Forest Glen Metro Station and within a half-mile of approximately 30 bus stops. There is an adjacent parking lot. There is also full sun and no tree coverage.



### Mattie JT Stepanek Park

The Mattie JT Stepanek Park is located at 1800 Piccard Drive, Rockville, MD 20850. It is three quarters of a mile from the Shady Grove Metro Station and is within a half mile of at least 30 bus stops. It has an adjacent parking lot and full sun with no tree coverage.



### Civic Center Park

The Civic Center Park is located at 603 Edmonston Drive, Rockville, MD 20851. It has over 75,000 square feet of available space. The park is one mile from the Rockville Metro Station and within one third mile of five bus stops. There are plenty of walkways to access open spaces and there are two adjacent parking lots. The entire park has full sun and no tree coverage.



### Blueberry Hill Local Park

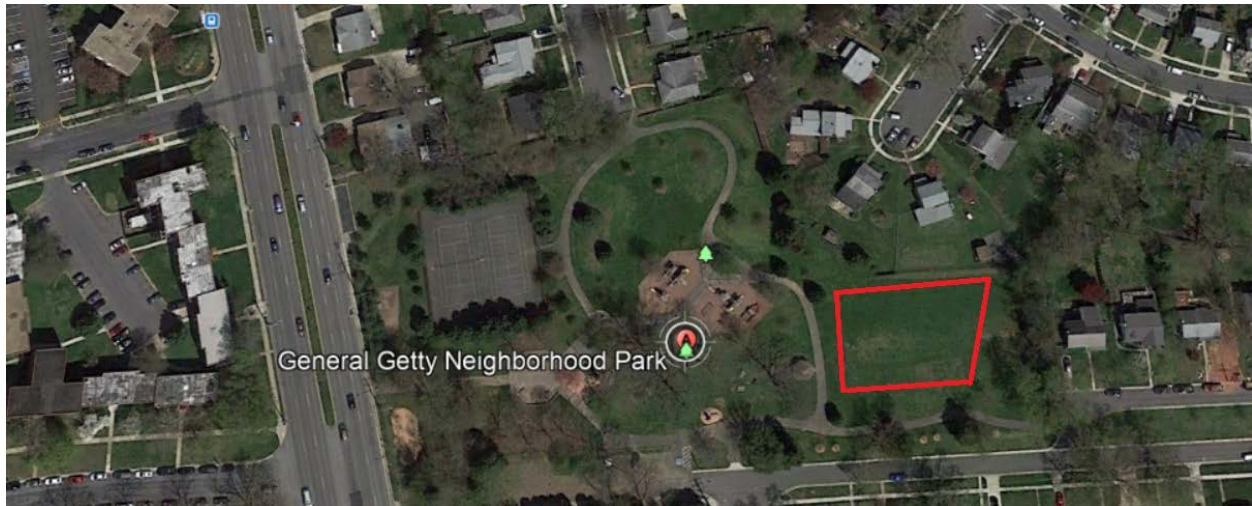
Blueberry Hill Local Park is located at 16617 Bethayres Road, Derwood, MD 20855. It has about 6,000 square feet of available space and is one mile from the Shady Grove Metro Station. Plenty of walkways access open spaces. There is an adjacent parking lot with van-accessible spaces. The park receives full sun with no tree coverage.





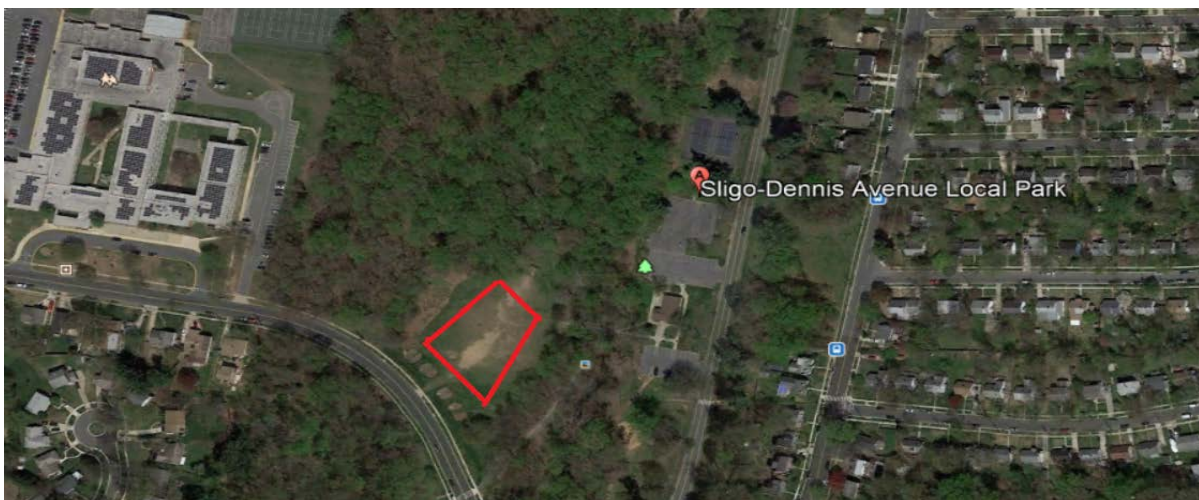
### General Getty Neighborhood Park

General Getty Neighborhood Park is located at 10000 Woodland Drive, Silver Spring, MD 20902, and has about 8,000 square feet of available space. The park is about one third mile from the Forest Glen Metro Station and within the same distance from at least ten bus stops. Walkways provide access to open spaces. A small adjacent parking lot exists and there is also street parking within the neighborhood. There is full sun with no tree coverage.



### Sligo Dennis Local Park

Sligo Dennis Local Park is located 10200 Sligo Creek Parkway, Silver Spring, MD 20901. It has more than 20,000 square feet of available space. The park is approximately one mile from the Forest Glen Metro Station and is approximately a half mile from at least ten bus stops. There is an adjacent parking lot. Part of the park has areas with partial shade, but there is plenty of space with full sun.



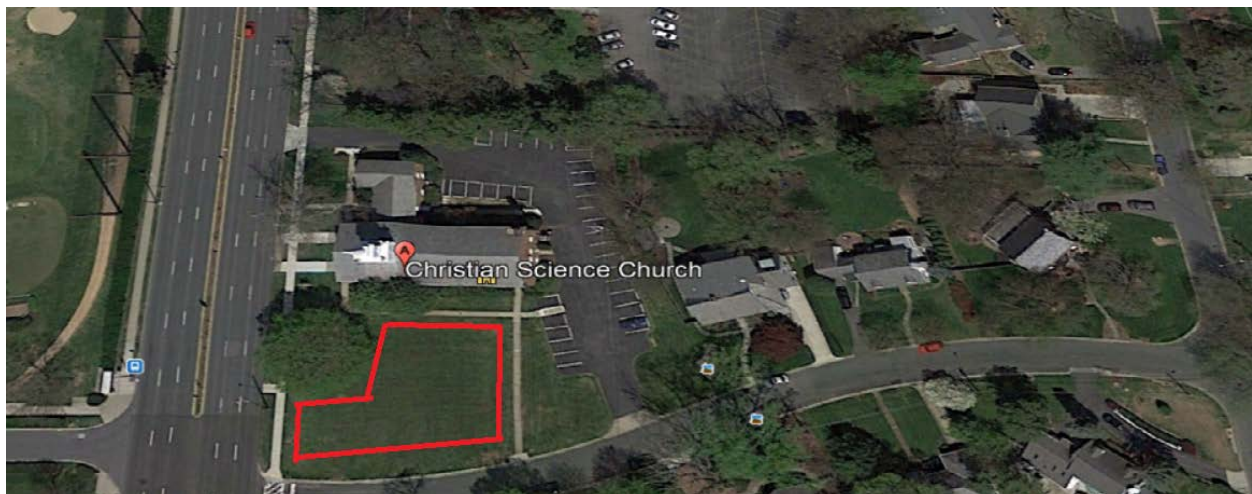
### First Korean Presbyterian Church

The First Korean Presbyterian Church is located at 1011 Maple Avenue, Rockville, MD 20851 and has approximately 5,300 square feet of available space. The church is about one mile from the Rockville Metro Station and is within .9 miles of three bus stops. There is a large adjacent parking lot. The church enjoys full sun with no tree coverage. A community garden may already exist, however a partnership expansion could be pursued.



### First Church of Christ, Scientist

The First Church of Christ, Scientist is located at 7901 Connecticut Avenue, Chevy Chase, MD 20815. It has approximately 5,200 square feet of available space. The church is one mile from the Bethesda Metro Station and is half a mile from at least seven bus stops. There is also an adjacent parking lot. It has partial shade but enough sunlight for a community garden.





### Silver Spring Assembly

The Silver Spring Assembly is located at 12805 Georgia Avenue, Silver Spring, MD 20906. The church has about 10,000 square feet of available space. It is about one third of a mile from both the Glenmont Metro Station and at least three bus stops. The church has an adjacent parking lot and the has full sun with no tree coverage.



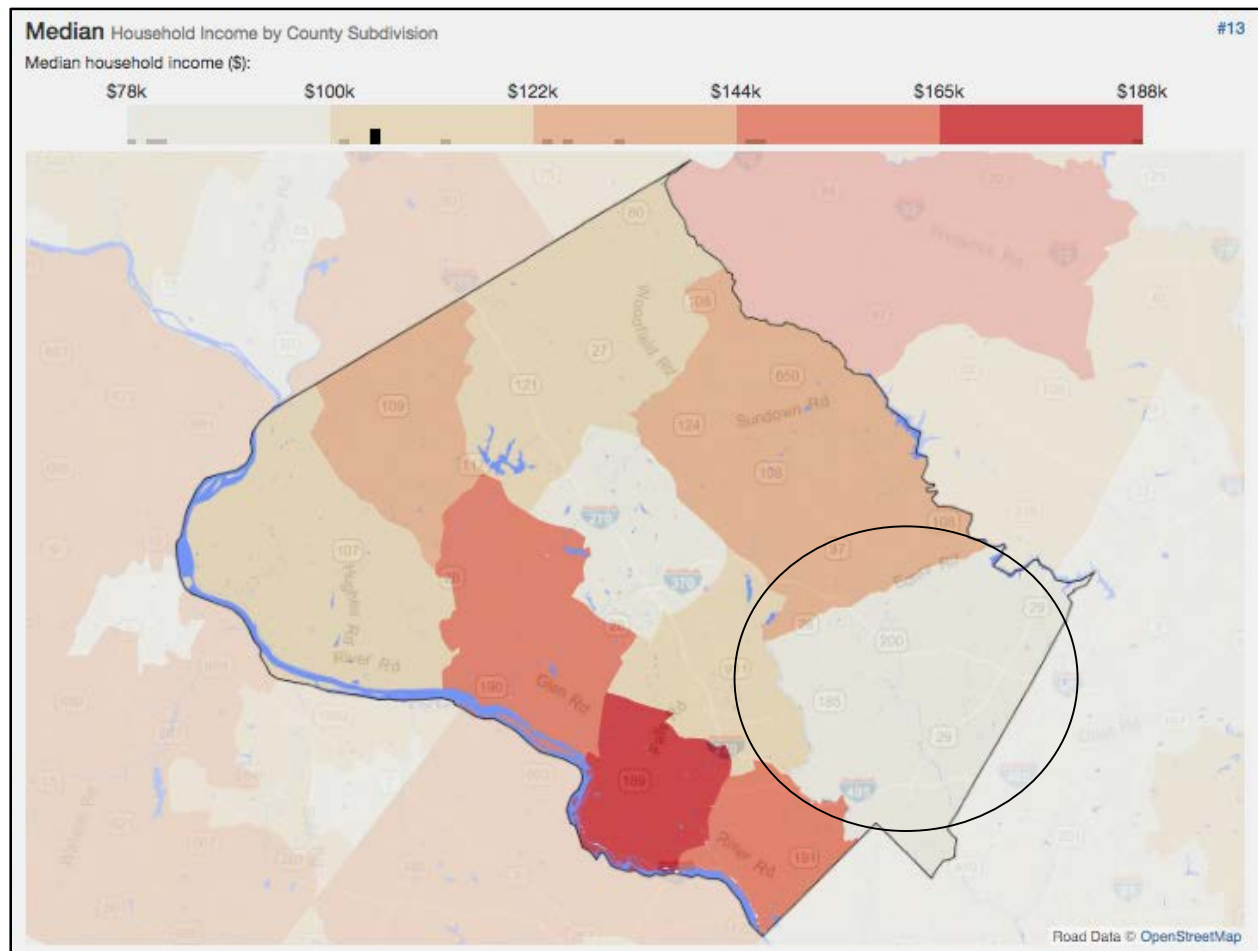
Other potential community garden sites are listed in Tables 1 and 2 in the Appendix.

# Demographics

## Introduction

Research shows that demographics influence the success of a community garden. The two most important factors are race/ethnicity and household income. Studies show that populations of minority and low-income individuals are the most likely to both maintain and benefit from community gardens.

## Median Household Income by County Subdivision



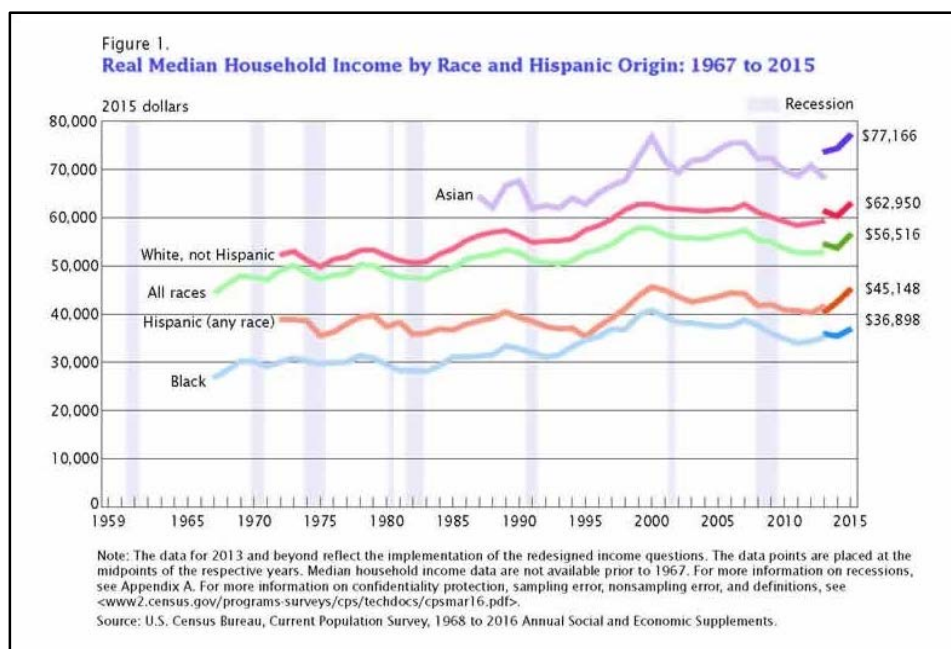
On this map the paler shades are areas with a lower average income and darker areas have higher average incomes. The black circle encompasses District 5 and District 13 in Montgomery County. These were two of the lowest earning districts that were also metro accessible. The areas, zip codes, and the average income of the two districts are also listed in the chart below for reference.

## Districts 5 and 13; Income and Location

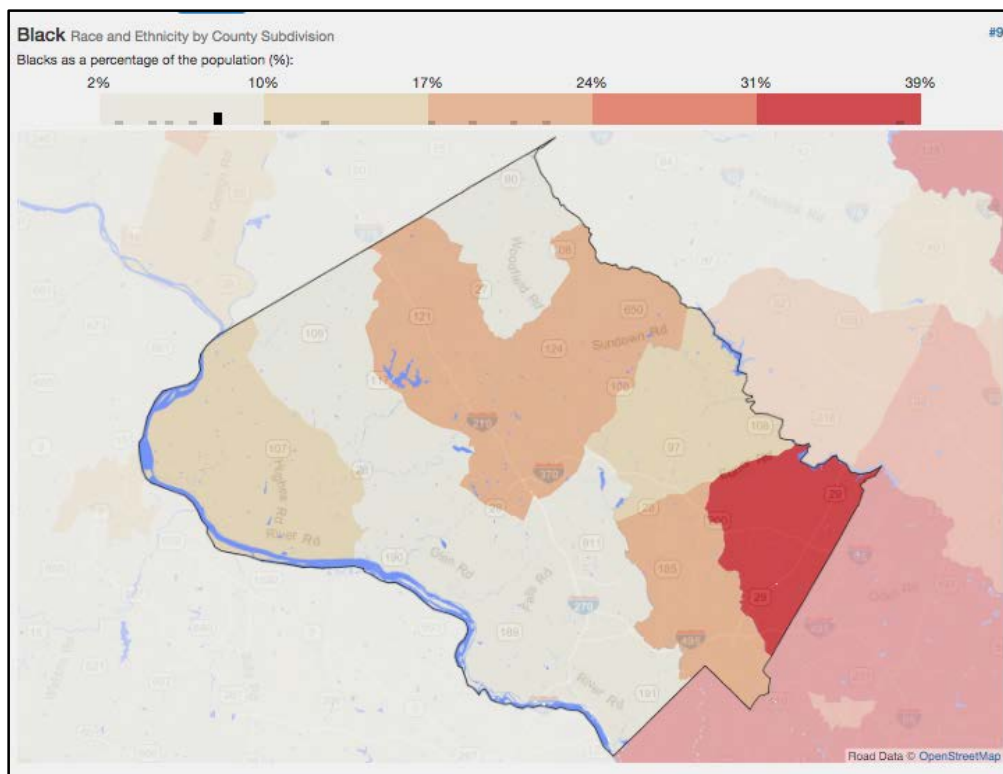
District	Notable Locations Within District	Zip codes Within District	Average Income/Year
5	<b>Areas:</b> Ashton-Sandy Spring, Burtonsville, Calverton, Cloverly, Colesville, Fairland, Hillandale, Layhill, Silver Spring, Spencerville, White Oak	20705, 20707, 20866, 20868, 20901, 20903, 20904, 20905, 20906	\$78,762 *6.0% on food stamps
13	<b>City:</b> Takoma Park <b>Towns:</b> Chevy Chase View, Kensington  <b>Other areas:</b> Aspen Hill, Forest Glen, Four Corners, Glenmont, Kemp Mill, Layhill, Leisure World, North Kensington, Silver Spring, South Kensington, Wheaton, White Oak	20814, 20815, 20851, 20853, 20895, 20896, 20901, 20902, 20903, 20906, 20910, 20912	\$81,410 *6.8% on food stamps

## Race/Ethnicity in Montgomery County

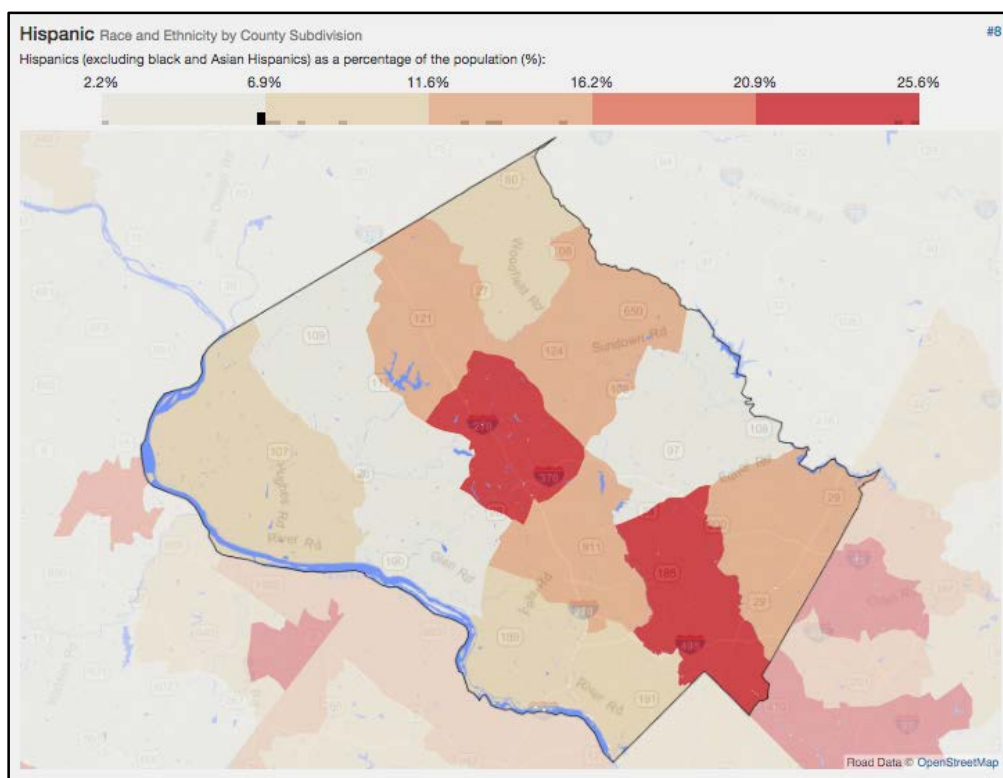
The following graph depicts the collective trend in median household income of each race within the United States from 1967 to 2015. Blacks and Hispanics are shown to be the two lowest earning groups and are often subject to systematic discrimination in American society. Because of this, we specifically looked for locations in Montgomery County with large populations of these two groups. Some evidence has also shown that community gardens are more likely to be successful if their caretakers are of a minority race, ethnicity, or cultural background.







*Above: Black Population in Montgomery County, MD.*



*Above: Hispanic Population in Montgomery County, MD.*

## Race and Population Size by District and Tract Location

District	Race and Population Distribution	Tracts (Black)	Tracts (Hispanic)
13	Black - 22.1% of district Hispanic - 22.5% of district	703214 (46.2%) 701800 (45.8%) 702500 (42.9%) 701703 (40.7%) 703213 (40.3%) 703212 (38.4%) 702402 (38.0%)	702000 (64.6%) 703404 (61.8%) 703701 (59.5%) 702301 (50.7%) 703402 (50.3%) 703302 (48.2%) 703403 (44.8%) 702101 (40.7%)
5	Black - 38.2% of district Hispanic - 15.3% of district	701422 (81.2%) 701421 (77.9%) 701508 (66.7%) 701417 (54.1%) 701509 (50.7%) 701423 (48.9%) 701414 (48.7%)	701602 (56.2%) 701601 (42.5%)

This chart shows Census tracts in Districts 13 and 5, with high percentages of Black and Hispanic populations. Even if there aren't viable locations within these tracts, it would still be beneficial to located a community garden nearby. Census tracts are small in size when compared to cities or districts. They usually represent a portion of a neighborhood.

The table below shows the demographics for the priority park and church garden locations. Demographics for other somewhat promising community garden sites follows.

### Average Income and Race/Ethnicity in Priority Park Sites

	<b>Name</b>	<b>Location</b>	<b>Average Income/ Year</b>	<b>Race and Ethnicity</b>	<b>Food Stamp % by Tract</b>
1	Evans Neighborhood Park	Silver Spring, 20902 Tract: 703902	76.6k	Hispanic: 33.8% Black: 17.9%	7.6% (200)
2	General Getty Neighborhood Park	Silver Spring, 20902 Tract: 703901	76.6k	Hispanic: 33.8% Black: 17.9%	0.0% (<30)
3	Carroll Knolls Local Park	Silver Spring, 20902 Tract: 704000	76.6k	Hispanic: 33.8% Black: 17.9%	6.2% (167)
4	Civic Center Park	Rockville, 20851 Tract: 700903	82.2k	Hispanic: 28% Black: 9.5%	12.3% (87)
5	Sligo Dennis Local Park	Silver Spring, 20902 Tract: 703901	93k	Hispanic: 24.4% Black: 22.3%	0.0% (<30)
6	King Farm Park	Rockville, 20850 Tract: 701211	101.5k	Hispanic: 9.2% Black: 11%	10.3% (237)
7	Mattie JT Stepanek Park	Rockville, 20850 Tract: 700718	101.5k	Hispanic: 9.2% Black: 11%	3.0% (60)
8	Blueberry Hill Local Park	Derwood, 20855 Tract: 700711	120.6k	Hispanic: 9.8% Black: 12.5%	9.6% (197)

### Average Income and Race/Ethnicity in Priority Church Sites

	Name	Location	Average Income/ Year	Race and Ethnicity	Food Stamp % by Tract
1	Silver Spring Assembly	Silver Spring, 20906 Tract: 703403	72.4k	Hispanic: 29.5% Black: 27.6%	7.5% (72)
2	First Korean Presbyterian Church	Rockville, 20851 Tract: 701101	82.2k	Hispanic: 28% Black: 9.5%	2.3% (34)
3	Christian Science Church	Chevy Chase, 20815 Tract: 705100	132.2k	Hispanic: 8.9% Black: 2.9%	2.5% (49)

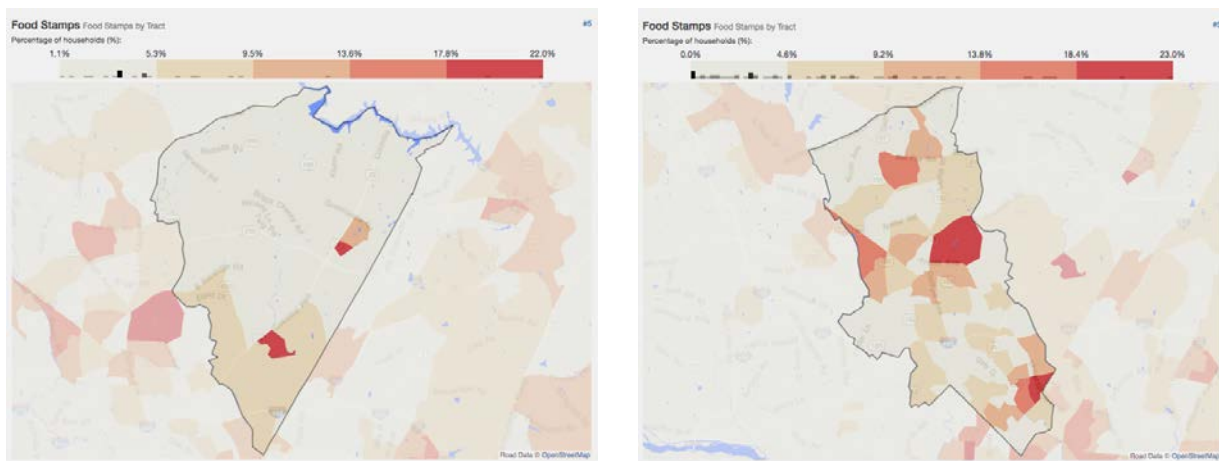
### Demographics of Additional Locations

	Name	Location	Justification
1	Church / Weller Road Elementary	3001 Weller Rd Silver Spring, MD 20906	Located in tract 703402 - 50.3% Hispanic
2	Highland Elementary School/ The Brethren Church of All	3100 Medway St. (Highland E.S) Silver Spring, MD 20902	Located in tract 703701 - 59.5% Hispanic 123 households on food stamps (11%)
3	Our Lady Queen of Poland Parish	9700 Rosensteel Avenue, Silver Spring, MD 20910	Located in tract 704000 167 households on food stamps (6.2%)
4	God Glorified Church	111 Geneva Ave, Silver Spring, MD 20910	Located in tract 701800 - 45.8% Black Median income: \$62k 209 on food stamps (11%)
5	Silver Spring Intermediate Neighborhood Park	7801 Chicago Avenue Silver Spring, MD 20910	Located in tract 701800 45.8% Black Median income: \$62k 209 on food stamps (11%)

6	Wheaton Forest Local Park	1700 University Boulevard W Silver Spring, MD 20902	Located in tract 703902 200 households on food stamps (7.6%)
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### Food Stamps in Districts 5 and 13

These charts include the percentage of households on food stamps, which serves as another statistic to consider aside from average household income. For example, even though Blueberry Hill Local Park is located in the highest average income area on the list of priority park sites, 9.6% of total households in that area depend on food stamps; the third highest on this list, indicating that even in areas with a higher average income, there may be people in greater need of a garden. The following graphs show the locations in Districts 5 and 13 where the percentage of households on food stamps is highest.



*Above: Percentage of Households on Food Stamps in Districts 5 and 13, Montgomery County, MD*

A note about the maps:

All the visual maps with red coloring in this section were retrieved from <https://statisticalatlas.com>, a website based on US Census data run by Cedar Lake Ventures, Inc., a small software development company based in San Francisco, California. They develop, own, and operate interactive web-based tools, desktop software, and web APIs. It is a user-friendly website that may useful for the Parks Department's further research.

# Americans with Disabilities Act Regulations

## Introduction

This section discusses how the Americans with Disabilities Act (ADA) applies to gardens to design them as inclusively as possible. From a literature review, we found seven principles that set the modern framework for urban planning through the lens of disability studies (Haimraie, 2013). The seven principles are equitable use, flexibility in use, simple and intuitive use, perceptible information, tolerance for error, low physical effort, and size and space for approach and use. Because there are several types of disabilities, planning and development must anticipate how garden spaces and structures will be used by people with different abilities.

## Site Visits

### *Bradley Hills Community Garden*

The Bradley Hills Community Garden is easily accessible because the garden and parking lot are at the same level, and very close together. The aisles are covered with engineered wood chips that facilitate the operation of wheelchairs, so moving from one part of the garden to another is smooth and simple. Because the garden is relatively small, its paths are easy to navigate. In case of emergency, exiting the garden would be quick and easy. Bradley Hills has maximized its allotted space, but in future gardens more space should be allocated specifically for garden tables as well as access to the plots from more than one entrance.

One area that needs to be improved is access to water and tools. Cisterns are designed with the faucets at the lowest possible height so that the water can flow. The cistern's main faucet needs to have a hose attached with the open end hanging or on a table within 15 to 48 inches off the ground.

### *Parklawn Community Garden*

This park has an abundance of space, which allows full mobility, easily accessible pathways, and the space to customize garden plots. Main paths through the garden had more than enough space for three people walking shoulder to shoulder. Also, 16 of the 45 plots are corner plots, which are especially valuable for access because they double the surface area between the garden and the path while limiting the area soil to reach across.

A large slope separates the community garden from the park's gated entrance, which makes full ADA compliance unfeasible. However, there is "leftover" space between the pavilion and the playground that would be ideal for a raised bed. Fortunately, there is still space adjacent to the pavilion that is also close to the cistern, tools, and entrance that could be utilized for more garden tables or raised beds.

## Structures

### *Raised Beds*



*Above: This shape of these raised bed enables people to easily reach all areas of soil without excessive reaching (yellowstonehighlandgames.us, 2017).*

Raised beds are great options for plots within a garden. They increase access for people who cannot bend or reach to the ground in a traditional garden plot. They also prevent overuse injuries by reducing the use of the back, hips, and knees to plant and harvest. They are best placed at corners where pathways around their perimeter enable full access to the plot within their mobility. Because raised beds can be modified plots, they have two added benefits: increased square footage for those with disabilities and inclusion. Raised beds are significantly larger than the garden tables used by Montgomery Parks for ADA compliance. The depth of the beds also increases the volume and variety of produce. Raised beds also can strengthen community ties between those of varying abilities by encouraging intermingling. Structures like garden tables, which are usually isolated from the other plots, increase the otherness of those who use them and can lead to social anxiety. However, with raised beds, all community gardeners are together and on the same level.



## *Invisible Trellises*



*Above: These “invisible” trellises enable people to use the garden’s vertical space without cumbersome infrastructure (Patrick, 2009).*

“Invisible” trellises are worth including because they can be scaled up to be as high or higher than garden tables, but with greater square footage of growing space. They do not have to be set up close to the ground, thereby reducing overuse injuries and accommodating those with joint injuries. They are much less expensive than wall trellises and therefore could be implemented throughout more of a garden. The “invisible” trellis idea could also be extended to the deer fencing that surrounds the Parks’ gardens. Although it would be unwise to do so on the complete perimeter of the fencing, some vertical plants such as tomatoes, grapes, or cucumbers could be grown. This is especially advantageous because many weeds grow on the fencing anyway.

## *PushKey Locks*



This PushKey lock is sold on Master Lock's website. Two keys come with an extra grip for easy use at all levels of fine motor skills (masterlocks.com, 2017).

PushKey locks are alternatives to alphanumeric locks and padlocks used to secure the garden. Alphanumeric locks and padlocks require a high level of fine motor skills, which places some individuals at a severe disadvantage.

These locks take standard keys, but instead of twisting the key to release the lock, the handle slips off. Pushkey locks are great tools for people with limited fine motor skills because there is a guide for keys and only five lbs. of force is needed. Two of the keys in the set also come with wide grips. The lock, a box of blank keys, and a cable to hold the gate costs around \$50.

## *Engineered Wood Fiber*

For flat walking areas, Wood fiber is an alternative to concrete. It creates a smooth, slip-resistant surface that doesn't create run-off. It is cheaper and less invasive to install than concrete sidewalks and can be filled over gravel to create a porous surface. Wood fiber does have attrition and would require refilling after three to four years, depending on foot traffic.

## *Pressure-treated Wood*

Aside from its aesthetics, pressure-treated wood is practical because its coating protects against termites, fungus, and weather damage. It is highly durable and can last for decades. Measures to ensure slip resistance should be taken to ensure safety when the wood is wet. This type of lumber is typically treated with Alkaline Copper Quaternary (ACQ) which has been found to be safe to humans and leaks into soil in only trace amounts. Because of its safety, this wood could be used to build ramps as well as raised beds. Despite its durability, at some point, likely years after installation, the wood will have to be replaced.

## *Concrete*

Concrete is the most durable flooring option. Its permanence enables it to endure harsh weather and accidents, but that durability can become an obstacle, causing injury from falls and being expensive to demolish.

What makes concrete ADA compliant is its smoothness and firmness. However, it is not supportive, so standing or walking on it for extended time periods could cause overuse injuries. In addition, the runoff it creates must drain away from the ground it covers, which could cause drainage problems.

Concrete ramp installation is expensive, requiring over 30 inches (the maximum length for an individual run) of rise for a ramp. ADA requires 30-inch landings with guards in addition to the handrails. Additional runs of concrete exponentially increase the cost. Still, in situations where there is a steep rise, concrete ramps are superior because of their load bearing capability. In community gardens where only a few people with disabilities may use them, they are not advised.

### *Modular Ramps*

Modular ramps are good choices for small changes in rise (<15 inches). Also called suitcase ramps, they are sold in parts that can be built and installed on site. Some have attachments, so that pieces can be added to extend the ramp's distance. They work best for small changes in elevation, such as curbs, because they are expensive (\$200-\$2,500 depending on length) after two feet of ramp run. At that cost, it would be best to create customized ramps for the unique situation.

## **Funding and Partnerships**

### **Findings for Funding**

The community gardens program could benefit from a stronger relationship with the Montgomery Parks Foundation. As a registered nonprofit, it can accept grants and form partnerships that government actors cannot, which would open many more garden funding opportunities. Funding is usually site-specific for grants or through non-profit partnerships instead of general funding for the community gardens as a program. Therefore, it is best to select one of the potential sites and then apply for funding for the specific site. There are legal implications associated with in-kind contributions, so usually it would cost more money to sustain them, resulting in losing money. Partnerships are more successful than in-kind donations in lowering the budget. Public-private partnerships could open up possibilities for fundraising, grants, information sharing, and collaborations. A land trust to conserve land for future gardens is also an option for Montgomery County, and have been effective for many other government-operated community gardens.

### **Grants and Montgomery Parks Foundation**

Although the community gardens are operated by a government entity, the Montgomery Parks Department, the gardens may be able to receive funding from different grant opportunities via the Montgomery Parks Foundation. There are funding opportunities that meet Park guidelines to receive the funding via the Foundation, and could help meet the goal of creating a new community garden each year. Through governmental and nongovernmental groups, there are several grants available for the gardens.

#### *Project Orange Thumb Grant*

Fiskars, a private organization, offers a grant opportunity to nonprofit entities to build community gardens. It “has provided over \$1.6 million to more than 210 community groups since the program started in 2002” (Project Orange Thumb). This opportunity is clearly ongoing, now in its 15<sup>th</sup> year of providing grants. Each group selected is awarded \$3,500. The Montgomery Parks Foundation would be the conduit for this grant because it is a 501(c)(3). 2018 applications open January 1.

#### *USDA’s Community Food Projects Competitive Grants Program*

Of the federal grants available, the USDA's Community Food Projects Competitive Grants Program is the most viable and largest opportunity for the gardens. It funds two types of programs: community food projects and planning projects. Under the first project type, other community gardens have received funding, so there is a precedent to provide funding. There is no specified award limit, but the maximum amount of funding for community food projects is \$125,000. The other grant sources are much smaller (between \$1,500 - \$10,000), making this grant even more appealing. One drawback is the extensive amount of requirements and goals in terms of food security and assisting low income populations. Although federal grant opportunities are much more complex, this grant could have a significant impact because of the sizable potential award. The deadline for this year is December 4th, 2017, but the program continues annually.

#### *GRO1000 Grassroots Garden Grants*

This grant opportunity is in its last year as an initiative through the Scotts Miracle-Grow Foundation. The goal of the GRO1000 program is to fund and help create 1,000 greenspaces/ gardens with an emphasis on urban areas and in collaboration with communities to affect change. It is only open to 501(c)(3) organizations, so the Montgomery Parks Foundation would have to apply for the grant; “any non-profit organization that is helping to foster community spirit and public service is eligible to apply” (GRO1000). The grant award is \$1,500 for each initiative. Application period runs from January 2 to February 19, 2018.

#### *KEEN Effect Grant*

This grant is an opportunity if the community gardens program decides to add a new youth involvement program, potentially in partnership with another organization. To apply for this grant, the gardens need to have a program related to youth education and the environment, which opens the potential to expand the gardens' services. The Parks Foundation would need to apply because this grant is targeted to nonprofits. The grant awards vary from \$2,500 to \$10,000. Online applications begin in May 2018, open for submission on August 1 until September 30 (KEEN).

## **Partnerships**

Partnerships are an important part of successful community gardens programs. They provide vital support through funding access outside of the government's scope. For example, non-profit partnerships can apply for grants targeted to 501(c)(3) groups, but still use those funds in conjunction with the Montgomery Parks' programs. Partnerships also offer the potential for information sharing, and furthering connections in the community focused around the organization. This creates mutually beneficial relationships that can help further the garden goals. Research on potential partnerships with other government entities, nonprofits, religious institutions, and working with a land trust follows.

## **Youth, Community, and Senior Center**

### *Edible Gardens*

In-school programs and after-school programs partnerships for community gardens are further funding sources. Partnering to target age-groups, increases the possibility for more grants and increased federal funding. Incorporating classroom lessons with hands-on gardening activities is a proven outdoor environmental education program. Schools have integrated these "edible gardens" as a new learning technique with lesson plans covering a range of subjects including math, science, social studies, health, literacy, and career awareness. There have been a number of successful edible gardens in Montgomery County Schools including at Cedar Grove Elementary School, Francis Scott Key Middle School, and Sherwood High School. Another suitable partnership opportunity is the Bradley Park Community Garden, located adjacent to an elementary school.

### *4-H*

Another potential partnership with Maryland Extension is 4-H and Youth. This nationwide program focuses on youth development. Focusing on youth programs will open the opportunity for more grants and community involvement.

### *Club Adventure*

One existing program for youth called Club Adventure could expand to hold after-school educational programs at the community garden at the Long Branch Community Garden at the community's recreation center.

### *Community Programs*

Master Gardeners and Grow It, Eat It, run by the University of Maryland Extension, are existing partnerships that provide gardens along with gardening tips and labor. Master Gardeners are trained to educate citizens about sustainable and effective horticultural practices. They offer landscaping information, demonstration projects, partnerships with other organizations, and public outreach activities. All Master Gardeners are volunteers, which lowers the costs for creating a community garden. Grow It, Eat It creates a network of food gardeners that share ideas, experiences, and recipes. They also teach intensive, low-cost, organic techniques that maximize food production, protect and improve natural resources, and improve human health. These two programs are low-cost resources for generating fundraising events, educational programs, and garden workshops.

### *Senior Centers*

The Long Branch Community Garden is located behind the community's recreation center and has the possibility to set up programs for senior citizens, as well as youth, particularly working with the Long Branch Senior Center, creating garden workshops and classes. Targeting both youth and senior citizens would not only lower the budget with incentive programs, but also benefit the community as a whole.

### **Nonprofit**

These entities can aid government programs in information sharing, as well as receiving funding and grants from outside sources. Many funding opportunities focus on helping nongovernmental entities. Nonprofit partnerships can bridge this gap and provide mutually beneficial relationships for partners.

### *A Wider Circle*

This nonprofit organization in Silver Spring, MD works to end poverty by providing resources such as furniture, clothing, and books. They accept and sort donations, and provide them to people who request assistance. Along with physical resources, they provide community support through events and programs. A Wider Circle supports neighborhood partnerships to help communities in need. One mission of the community gardens project is to provide food security to low-income residents, to help those in poverty with nearby garden options throughout Silver Spring. Several of the potential garden sites are located in the area where this nonprofit already functions.

### *Everybody Grows*

Everybody Grows is a Washington D.C area based nonprofit that provides gardens in areas of need, typically through churches, assisted living homes, and even through the Fire Department. Their goal is to help people access fresh, healthy food. As with the Parks Department's community gardens, they aim to assist in overcoming "income and mobility so that

everybody can experience the joy of growing food” (Everybody Grows). The organization’s website includes a page emphasizing their willingness to form partnerships, and the groups they have already partnered with. This would be a great opportunity to work with another entity that has shared goals and expertise, but with different connections and knowledge of communities. This information could be useful for the development of future gardens.

### *Senior Connection*

Senior Connection is a County-based nonprofit that supports senior citizens including transportation via volunteers, along with assistance programs for errands such as grocery shopping and taxes. The organization wishes to form partnerships with other entities in the community to further their goals of inclusion and mobility for the older people of the community. A partnership with this organization could provide direct access for elderly citizens in the community to the gardens in Montgomery County, and even support potentially within the gardens through volunteers. This type of partnership would specifically attempt to help those with mobility issues and make the gardens more accessible to all people wishing to utilize them (The Senior Connection).

## **Religious Institutions**

This form of partnership could make significant connections to communities with the potential for fundraising, finding new funding sources, and other types of support. Our team discovered several potential garden sites on land owned by religious organizations. There are many nonprofit groups that have been funded through religious partnerships but are not directly related to the religion. Some religious groups themselves offer grant opportunities however, more research into the legal implications of these partnerships, particularly receiving money directly from religious institutions, is necessary given to the separation of church and state.

### *Presbyterian Church Self Development of People Grant*

This grant program through the Presbyterian Church works to help those in poverty take control and build community by working on projects related to “core strategies to promote justice, build solidarity, advance human dignity, advocate for economic equity” (Presbyterian Church). Those affected must be directly involved in working on the program and must benefit from the project, e.g. a community garden. This would be different from anything the Montgomery Parks Department community gardens has ever done because the garden site would have to be specifically for people in poverty; however, aiding those in poverty is one of the goals of community gardens.

Further evaluation of this program is necessary to determine whether or not this is a viable option due to the religious affiliation and the requirement to help a specific group. One nonprofit listed above, A Wider Circle, would be a group that could easily apply for this grant and build the garden in partnership with the community gardens program. It would be a complex relationship, though one worth exploring. There is no grant deadline, but it takes six months to receive a response. It is unclear what the amount of the award would be.



## **Land Trust**

A land trust is usually a nonprofit or non-governmental organization that works to obtain and conserve land for future use. In many cases, land trusts work with other groups to save the land for a particular purpose or goal. Research on fundraising for community gardens, found that other government controlled community gardens in the United States use land trusts to secure land for garden sites. The P-Patch Trust in Seattle is one example and was founded specifically for the purpose of saving land for the program (Hou, 59).

Land trusts offer a number of advantages. because they are not government actors, they do not have to go through a lengthy process to buy land; they can move as quickly as an individual or business and thus be more competitive in the market. They can also offer a range of resources. These entities often have access to GIS specialists and legal knowledge about buying and conserving land. Their most significant contribution is the ability to save land for the future. Working with a land trust, the Parks Department could have secured properties, instead of conducting land surveys every couple of years (Shaw 2003).

### *Urban Ecosystems Restoration*

Urban Ecosystem Restorations, a land trust in the D.C. region, works to save land for conservation purposes for species and habitats. This nonprofit attempts to establish “Eco-Functioning Spaces,” which they define as areas that “serve multiple, integrated ecosystem functions” (Urban Ecosystems Restoration). A land trust like this is a potential option for the community gardens, but it may be better to attempt to establish a separate land trust specifically for the gardens. It is worth looking into this trust, but further research needs to be conducted

## **Research Findings:**

Understanding how to build and maintain partnerships is critical. Research and literature review has uncovered the importance of certain characteristics of partnerships, as well as actions that can be taken to ensure they are fully realized relationships, particularly for nonprofit and partnerships for land trusts.

Essentially, the two parties must have a shared understanding, a foundation of trust, commitment to the project, and strong communication throughout the relationship. To make the partnership concrete, rather than just a “peaceful coexistence,” partners can collaborate through regular meetings and a shared decision making process (Shaw 2003).

## **Recommendations**

### **Selecting New Community Garden Sites**

Start by examining the top eleven sites, as well as the list of potential sites in the Appendix. Conduct site visits to ensure a fit with the community gardens program's scope. For sites in County parks, contact the park ranger or manager to begin discussion about converting open space into a community garden. For the houses of worship, contact the institution's leader to gauge their interest unity and draft a memorandum of understanding for the transformation of the location into a community garden.

## **ADA Compliance**

### *Selecting gardens*

Choosing gardens that would require partnerships with outside organizations for their facilities is a good option. Facilities outside of the parks system (schools, churches, etc.) are required to comply with the 2010 version of the ADA in the same ways as Montgomery Parks, so partnerships with them would generally require less effort to enter in compliance.

Gardens should also be as flat as possible, at least between the park and garden entrance. Choosing areas with more than 30-inch changes in elevation is not advised because the cost of compliance will likely outweigh the garden's use.

Locations with parking lots are preferred over those that rely on on-street parking as the main source of parking. The Courts have generally agreed that while the ADA does not mandate technical specifications for on-street parking, those spots still should offer some level of accessibility. Because accessibility is not well defined in this sector of compliance it is suggested that those spots are directly adjacent to sidewalks.

### *Optimizing Design*

Open space is vital to a community garden's success. When the ratio of the number of plots to the total area of the garden is high, their design can be much more innovative. Wide areas not only facilitate passage generally, but also increase accessibility via wheelchairs and other assistive devices. Further, connecting paths enables independence and freedom. Creating only one path to an area creates a sense of restriction and discourages interaction.

The space dedicated to aisles and accessible pathways within the gardens should be no less than 10 percent of the garden's total space. This minimum ensures that all parts of the garden can be easily accessed in an emergency.

Many gardeners in the parks are seniors who have full mobility, but eroding endurance. Including at least one bench with back support would make gardens more usable by seniors.

Avoiding the use of concrete pathways is ideal, because alternatives are cheaper and can be very durable. On flat surfaces, when replacing concrete sidewalks, (for paths to and within the garden) choose wood fiber over concrete.

## **Funding**

As mentioned, site and project specificity can be an important aspect in receiving funding. After reading many grant options, it is apparent that each had the goal of funding new or specific projects, not the overall operation of the community gardens. Parks Department should select a site first and then apply with specific details for funding,.

Using the Montgomery Parks Foundation could expand grant opportunities and bring in immediate funding for new gardens within the next few years. However, a more sustainable option is forming partnerships and collaboration with a land trust. Partnerships with the various organizations and entities presented can last years and provide options for sustained funding and resource sharing. A land trust is the best option for the community gardens; it can buy, manage, and preserve land for future gardens, making land surveys each few years unnecessary. The land will already be selected, helping the program meet its goal of creating one new garden every year.

## **Future Research**

While there is a lot of data on the demographic and community aspects of community gardens, much more research can be done to understand the biological and ecological factors of these gardens. A literature review of gardens in New York City and Toronto, suggests the County Parks should begin an inventory of what produce people are growing in the gardens. Ensuring that people are growing things compatible with the soil is very important. Along with this, Parks officials should interview and educate gardeners to better understand gardening challenges. For example, a volunteer in the garden system, pointed out that many gardeners try to use winter cover crops, as the EPA recommends, but have trouble managing these crops. We also learned that the most popular vegetables grown in gardens, tomatoes, are difficult to grow due to changing climatic conditions. This type of information should be noted and explored by Park employees.

## Appendix

**Table 1: Other Potential Community Garden Locations in Parks**

Name	Address	Notes
Maryvale Park	812 1st Street Rockville, MD 20850	Approximately 7,000 square feet behind basketball courts
Wheaton Forest Local Park	1700 University Boulevard W Silver Spring, MD 20902	Approximately 8,000 square feet behind tennis courts
Timberlawn Local Park	108000 Gloxinia Drive North Bethesda, MD 20852	Approximately 8,000 square feet in triangular area next to parking lot
South Four Corners Neighborhood Park	900 Forest Glen Road Silver Spring, MD 20910	Approximately 7,000 square feet of available space next to parking lot
Silver Spring Intermediate Neighborhood Park	7801 Chicago Avenue Silver Spring, MD 20910	Approximately 7,000 square feet of available space near parking lot
McKenney Hills Neighborhood Park	Brunswick Avenue, Hayden Drive, Churchill Road Silver Spring, 20902	Approximately 6,000 square feet of available green space behind parking lot and tennis courts
Fleming Local Park	9929 Fleming Ave Bethesda, 20814	Approximately 8,000 square feet of available space between tennis courts and baseball diamond

**Table 2: Other Potential Community Garden Locations in Houses of Worship**

### Religious Institutions

Name	Address	Notes
Our Lady Queen of Poland Parish	9700 Rosensteel Avenue, Silver Spring, MD 20910	Approximately 8,000 square feet of available space in large field in the back.

Georgia Avenue Baptist Church	12525 Georgia Avenue, Silver Spring, MD 20906	Approximately 5,300 square feet of available space in adjacent field
Montrose Baptist Church & Christian School	5100 Randolph Rd, Rockville, MD 20852	Approximately 5,300 square feet of available space behind church
Unitarian Universalist Church of Rockville	100 Welsh Park Dr, Rockville, MD 20850	Approximately 5,300 square feet of available space behind church
God Glorified Church	111 Geneva Avenue, Silver Spring, MD 20910	Approximately 5,800 square feet of available space next to church
Yeshiva of Greater Washington	1216 Arcola Avenue, Silver Spring, MD 20902	Large field behind building which meets the 5,300 square foot limitation for community gardens

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