

# The Green Phoenix Farm

## A Social-Impact Case Study

### 2021

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July 18, 2022

**Cultivating People and Growing Community**  
**A sustainable approach to mitigating homelessness**

Salt Lake City, Utah

by Farmer Karl Ebeling, Executive Director, Eden Streets

**Executing the means indicated in this report will not necessarily yield the same results. It is recommended that every user of this report consult with stakeholders and heed their own own judgment. The author and case subject of this report assume no liability.**

## Report Introduction

This report is a case study addressed to city leaders who are open to consider alternative approaches to sustainably mitigate homelessness. Based on the five-year operating history of Wasatch Community Gardens' Green Phoenix Farm (GPF) and my detailed journal account of my ten-month, 1700-hour experience as an AmeriCorps assistant farmer at the Green Phoenix Farm in 2021, I am documenting this urban farm with a social mission to cultivate people and grow community with the permission of Wasatch Community Gardens based on the information they have released as "open source".

The information included in this report will serve as yet another data point of the more than 150 farms with social missions throughout North America. As Executive Director of Eden Streets, an association of farmers with social missions, I am writing this report to add to others like it that will enable farmers to design, build, and operate farms with social missions and improve upon social outcomes of using transitional employment and job training to effectively assist individuals to transition out of homelessness.

Wasatch Community Gardens is a nonprofit located in the Salt Lake Valley to foster a community where everyone values and has access to growing and eating healthy and local food. In addition to providing community garden space, they run adult and youth educational programs and operate the Green Phoenix Farm, a 1.4 acre urban farm just six blocks west of center city.

The Green Phoenix Farm employs women facing homelessness as part of a job training program with the outcome of each participant finding stable housing and employment by the end of the growing season. The women hired are collectively known as the Green Team.

The report is organized according to Eden Streets' model to measure the total impact of a farm with social mission. Developed by visits to and assessment of many other farms with social missions, this model assesses impact both at the individual and community level. It underscores the value of calculating a total social return on investment considering not only the economic impacts of newly employed individuals, but also the environmental, community, and healthy food-based outputs of the farm. My work at the Green Phoenix Farm helped inform and validate this model as an effective way to express the individual and community impacts of the farm. This report highlights some of these model elements.

This report is not intended to be an operating manual or blueprint for design, construction, or operation of a farm with a social mission. The information included, however, will assist those who desire to reproduce the outputs of this farm with a social mission elsewhere. Wasatch Community Gardens accepts no responsibility for the outcomes of any project modeled after the Green Phoenix Farm. While Wasatch Community Gardens has chosen to donate all produce to local food banks, other outlets for produce should be considered.

I recommend that farms with social missions like the Green Phoenix Farm be acknowledged by government, academic and civic leaders as viable and effective mechanisms to sustainably mitigate homelessness. My hope is that the reader will perceive the power and implication of this information so that the lives of millions who now experience homelessness will be positively impacted.

Sincerely,

"Farmer Karl" Ebeling, Executive Director - Eden Streets  
EdenStreets.org

## Executive Summary

Wasatch Community Gardens operates an urban farm with a social mission in downtown Salt Lake City. The end of 2021 represents the fifth consecutive year of its operation as a farm dedicated to building community and employing and training women who face homelessness. This report summarizes the impact of the farm not only on the women directly served but also on the community as a whole. The information contained in this report will be useful as a case study.

In 2021, the Green Phoenix Farm on 1.4 acres created \$111,000 of value in seedlings, produce, and seeds. It also employed nine women facing homelessness and two lead growers, past members of the team who have now assumed leadership roles. Of these nine women, 88% met the goal of leaving the program with stable housing and 78% ended the program with alternate employment aligned with their interests and life goals. **The 5-year SROI is 2.96. For every dollar spent over the course of five-year farm operation, \$2.96 returns to the local economy.** Furthermore, if estimating these women will work for at least 10 more years and assuming an employment fulfillment rate of 88% and a discounting yearly rate of five percent, the **five-year net present value** of just one year's farm investment is **\$5.7 million**. The farm **touched 4,700 people** in the Salt Lake community and delivered **42,000 organic food servings to 2,134 people** in 2021. **510 volunteers in 2021 that assisted for a total of 2,986 hours. These outcomes help describe the value this farm brings to the city and the community.**

Furthermore, the farm regenerated the local environment by producing 273 cubic feet of compost, generating 7526 kwh using an onsite solar array (99.9% of its electrical demand) and irrigating with just 63% of the water used by the average vegetable farm in the west. The farm served as a welcoming green space for many in the neighborhood. Supporting data are provided in this report as the basis of these outputs.

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### Acknowledgements:

It is because of this collective ownership and support of the urban farm that this program is able to deliver these results to the community. Eden Streets acknowledges Wasatch Community Gardens, its partners and donors for their significant, vital support. Eden Streets also acknowledges the Redevelopment Agency of Salt Lake for leasing the land to Wasatch Community Gardens.

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## Introduction

Farms operating with a social mission offer multi-dimensional benefits for the communities in which they operate. While the business world operates with the standard return on investment (ROI) metric, such farms can be measured for the social return on investment (SROI). SROI assesses the whole community impact of putting a person to work who otherwise would not be working. It assesses the costs to society of supporting that person without work and compares the savings of having that person work and produce and consume using their own income. It also considers the benefits of including volunteers and students in the process of creating a farm that serves not only as a green space but also as a viable source of local, fresh organic produce. Further, it adds the positive environmental impact of the project to the total social benefit. A model has been created to assess these impacts in four dimensions: individual, profit, environmental and community. The impact of Green Phoenix Farm will be measured across these indices so as to understand the return on investment not only to those donors and grantors but also to taxpayers, the individuals directly benefited as well as those from the community participating on the farm or receiving produce.

## Purpose

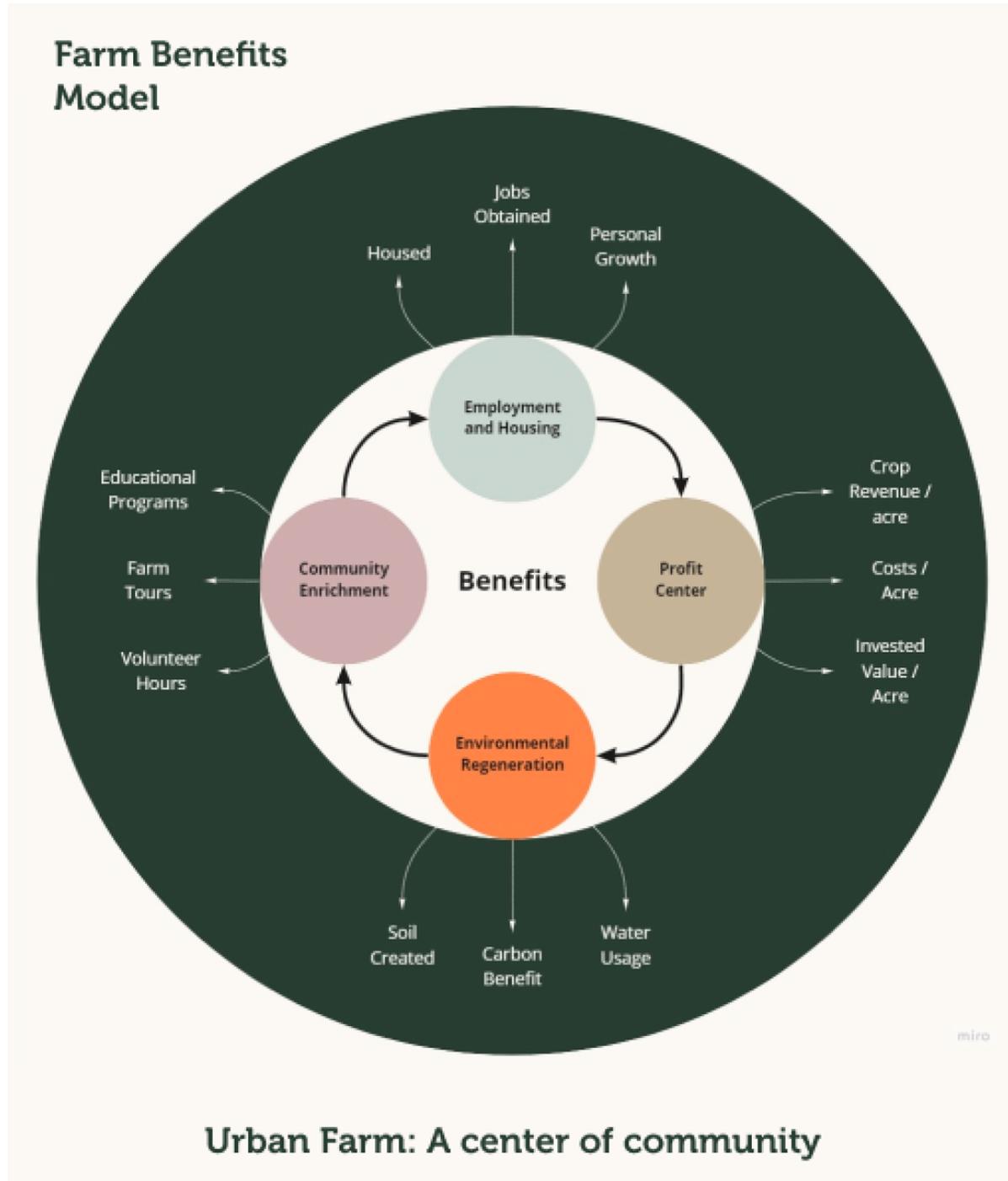
The purpose of this report is to summarize the record made of the 2021 growing season in a way that succinctly describes to prospective donors and grantors, partners and government leaders the benefits of building and operating a farm with a social mission. While the population of those directly served or employed may vary, the basic investment base, parameters for success and operations costs are likely to be similar and transferable.

## Farm Benefits Model

Eden Streets created a model to measure the individual, economic, environmental, and social outcomes of a farm with a social mission. Measured outcomes can serve as the basis for grant awards for community development funding. The model represents the positive outputs of the farm and their impact on the individuals served, those who operate the farm, farm volunteers, students, investors and the environment. This model is summarized by the graphic below which shows four quadrants of benefit with associated measures for each. The model shows the farm as a center of community which functions as a place to foster human interaction and natural connections. These interactions help grow and eventually transform a community of people engaged with the farm.

Eden Streets' urban farm benefits model includes four dimensions of impact:

1. Employment and Housing
2. Profit Center
3. Environmental Regeneration
4. Community Enrichment



Metrics associated with each of these dimensions of benefit are shared in this report.

### Impact

In the context of this farm with a social mission model, impact can be measured by assessing baseline measurements versus generation and production metrics and summing these increases across an entire year. The annual cycle of the farm and its growing season is repeated so that

these impacts can be consistently measured year over year. Measuring these key indicators annually allows not only the farm operation and program to identify improvement opportunities to create even greater economic and social value at an even lower cost basis but also to compare across similar farms.

The farm layout and space allocation contribute not only to the production of the farm but also its ability to develop the farm crew members and engage the community. The Green Phoenix Farm lot is 1.4 acres. The area under cultivation is 0.8 acres including walkways in between beds. Additional space is efficiently allocated to processing, instruction and storage.

### Farm Layout- Space Allocation

<b>GPF Farm Area</b>	(m) L	(m) W	(m2) Area	(sqft) Area	acre Area	3.28084 ft. per meter 43560 sqft per acre
<b>Total</b>	100	56	<b>5600</b>	<b>60278</b>	<b>1.38</b>	
<b>Total under cultivation</b>			<b>3290</b>	<b>35410</b>	<b>0.81</b>	
<b>% under cultivation</b>					59%	
<b>GARDEN PLOTS</b>						
<b>Plot SW</b>	45	29	1305	14047	0.32	
<b>Plot SE</b>	37	21	777	8364	0.19	
<b>Plot SE Bins</b>	8	17	136	1464	0.03	
<b>Plot NE</b>	28	15	420	4521	0.10	
<b>GH- North</b>	8	19	152	1636	0.04	
<b>GH- Main</b>	14.3	19	271.7	2925	0.07	
<b>Plot Central</b>	12	19	228	2454	0.06	
<b>TOTAL</b>			<b>3290</b>	<b>35410</b>	<b>0.81</b>	
					59%	
<b>PROCESSING</b>						
<b>Chicken</b>	8	4	32	344	0.01	
<b>Compost</b>	8	10	80	861	0.02	
<b>Trailers+Kitchen</b>	4	51	204	2196	0.05	
<b>Dining Area</b>	10	4	40	431	0.01	
<b>Drive/ Pathways</b>	91	8	728	7836	0.18	
<b>TOTAL</b>			<b>1084</b>	<b>11668</b>	<b>0.27</b>	
					19%	
<b>STORAGE</b>						
<b>Storage Area - Misc</b>			<b>1226</b>	<b>13200</b>	<b>0.30</b>	
					22%	

<b>Area Use</b>	<b>Sqft</b>	<b>%</b>
<b>Growing</b>	<b>35410</b>	<b>59%</b>
<b>Processing</b>	<b>11668</b>	<b>19%</b>
<b>Storage</b>	<b>13200</b>	<b>22%</b>
<b>TOTAL</b>	<b>60278</b>	<b>100%</b>

The donut chart illustrates the distribution of total farm area (60,278 sqft) across three main categories: Growing (35,410 sqft, 58.7%), Storage (13,200 sqft, 21.9%), and Processing (11,668 sqft, 19.4%). The Growing category is the largest, followed by Storage, and then Processing.

GH = Greenhouse - SE (South East, etc)

The table below of Green Phoenix Farm 2021 shows the community impact of the farm based on the four dimensions referred to in the model.

Farm Metrics

<b>GPF 2021-</b>	<b>Data Reporting Matrix</b>	1.4 acres total
AmeriCorps	Karl Ebeling: Assistant Farmer at Green Phoenix Farm, Wasatch Community Gardens, 622 W 100 S, SLC, UT 84104  <u>Supervisor: James Loomis</u>	0.8 acres cultivated
<b>Job Training</b>		<b>Units      Year End</b>
	Total program participants served	#            9
	Total individual program months delivered	#            38
	Total employee (crew) pay	\$            \$43,147
	Total crew hours worked	hours       4,902
	Number of Jobs Obtained with at least one month of farm employment	#            7
	Number of Participants with stable housing	#            8
<b>Farm Production</b>		
	Organic Food Value delivered	\$            63000
	Organic Food value grown on farm	\$            61000
	Number of people served	#            2,134
	Seedlings Sold (wholesale value)	\$            \$40,000
	Seedlings Sold (count)	#            44,000
	Varieties of Seeds produced	#            20
<b>Environmental Regeneration</b>		
	Varieties of plants stewarded	#            280
	The volume of compost produced (cubic feet)	Cu ft       273
	Water consumption as % of Utah Vegetable Farm	%            (67)
	Water Consumption	100 Cu ft   97.5
	Solar power generated (Utah average Households)	Household s   0.8
	Solar power generated. (kwh)	kwh           7521
	Ecological education time	person hrs   368
<b>Community Enrichment</b>		
	Number of volunteers	#            510
	Volunteer Hours	hrs           2986
	Number of adult visitors	#            ~250
	People given farm tours	#            ~100

In addition to these metrics, the Green Team job training program delivered additional benefits with participants including individual health and wellness, knowledge and technical job skills, and improvement in confidence. Due to the transient nature of the population Wasatch

Community Garden serves, these benefits can be difficult to measure, but are observed through participants' stories and interactions with the group. In coming years, the team will incorporate pre/post surveys into the onboarding and exit processes to obtain more reliable, objective data.

## Profit-Loss Statement

In any endeavor involving financial backing, a credible accounting system is required. The profit-loss statement summarizes profitability. The Income Statement / Profit-Loss statement for the farm is shown below. An expanded financial summary including societal costs for those served puts the benefits in context of community and society. This statement is shown in the section "Social Return on Investment (SROI)."

## Green Phoenix Farm Expenses

(removed- not open source)

## Farm-Related Income (value creation)

Plant Sale (Wholesale Rate)	\$40,000
Produce (Food and Flowers)	\$63,000
Seeds	\$9,456
TOTAL:	\$112,456

The Spring Plant Sale's wholesale value is estimated at \$40,000 based on the number of inputs as if they would have been sold wholesale to Wasatch Gardens.

## Employment and Housing

A primary goal of the Green Team program, which takes place at the Green Phoenix Farm, is to help women facing homelessness navigate community resources such that they leave the farm with stable housing and jobs. Wasatch Community Gardens knows that these goals are rarely achieved without additional skill-building, mentorship, and support. Wasatch Community Gardens farm-based curriculum supports participants with "bridging the gap" from poverty to self-sufficiency by helping them strengthen their social, emotional, and thinking skills. Wasatch Community Gardens measures the impact of these program goals in three dimensions: Those housed, those who have obtained jobs, and the personal growth of each participant.

## Housed Crew Members

In 2021, eight of the nine women achieved stable housing by the end of their work period at the farm. At the start of the program, this year's team was staying in a variety of locations - local homeless resource centers, "couch surfing" with family or friends, staying on the streets, or on the cusp of losing their apartments. At the end of the program, 88% of women were in a more stable housing situation, many of them having been connected to Salt Lake's housing resources by the program Advocate.

### Jobs Obtained for Crew Members

Seven of the nine women (78%) obtained jobs within one month of their farm employment. Drawing on the skills and strengths realized during their farm employment, jobs attained by participants include driving, housekeeping, horticulture, peer support, and garden maintenance.

### Social Return on Investment (SROI)

Social Return on Investment (SROI) is an organizational method of accounting for value creation, primarily social or environmental value. SROI enables organizations to measure how much change is being created by tracking relevant social, environmental, and economic outcomes.<sup>(1)</sup> Societal return on investment was an index suggested by studies completed by Queens University when assessing the value of Sole Food Street Farms in Victoria, British Columbia. The hidden costs of decreased or eliminated social services may include

- Medical services (emergency room, physician visits, prescriptions, or instant care)
- Employment services (Department of Workforce Services)
- Psychiatric services (Social work, counseling, mental health crisis resources)
- Food services (Food stamps, SNAP, WIC, food pantries)
- Homeless services (clothing donations, Department of Health, Police, emergency shelter)

Taking homelessness as an example, the Deseret News was quoted to say that **Salt Lake City spends \$15 million each year<sup>1</sup>** on services or management costs for those experiencing homelessness<sup>2</sup>. Salt Lake County reports 2314 individuals counted homeless in 2021. Assuming 70% of these reside in Salt Lake City, 1600 are homeless in SLC. That means the City of Salt Lake spends around **\$9,375** per individual experiencing homelessness for various programs to mitigate the problem. Charities like Catholic Services provide food for the homeless every day. The charity support line assumes \$2 food per day per individual.

Utah spent **\$315 million in 2020** to support 3000 homeless individuals. That means **Utah pays \$105,000 per individual per year. HUD reports 3000 individuals were homeless in Utah in 2021.**<sup>3</sup> See Appendix – Costs of Homelessness.

**The 5-year SROI is 2.96. For every dollar spent over the course of five-year farm operation, \$2.96 returns to the local economy.** Furthermore, if estimating these women will work for at least five more years and assuming an employment fulfillment rate of 88% and a discounting yearly rate of five percent, the **five-year net present value** of just one year's farm investment is **\$5.8 million**. Thus, the farm is a valuable asset to the city and the community.

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<sup>1</sup>

<https://www.deseret.com/utah/2021/2/14/22272705/does-cleaning-up-closing-homeless-camps-do-any-good-when-new-camps-just-pop-up-elsewhere>

<sup>2</sup>

<https://www.deseret.com/utah/2021/11/16/22785513/audit-utah-homelessness-spending-rose-but-problems-continue-to-grow-salt-lake-city-homeless>

<sup>3</sup> <https://jobs.utah.gov/homelessness/homelessnessreport.pdf>

<b>Social Return on Investment (SROI)</b>		<b>Green Phoenix Farm: Farm with Social Mission</b>		<b>SROI Ratio: 2.96 (Year 5)</b>		<b>NPV \$5,757,430 (Year 5)</b>		
Updated: 20220713 - Farmer Karl		<b>TOTAL BENEFITS AND COST BY YEAR</b>						
<b>Base Assumptions</b>		Farm yr	1	2	3	4	5	
Assumed Individuals Served per yr	8	Yr -1	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Impact - Benefits (Environmental, Society, Value)</b>								
<b>Number of Individuals now employed</b>			8	16	24	32	40	48
SLC's Cost per Homeless Individual	\$9,375 (Saved)	(no savings)	\$46,875	\$93,750	\$140,625	\$187,500	\$234,375	
Utah's Cost per Homeless Individual	\$105,000 (Saved)	(no savings)	\$525,000	\$1,050,000	\$1,575,000	\$2,100,000	\$2,625,000	
Fed Cost per Homeless Individ (SNAP,HUD)	(TBD) (Saved)							
Charities Cost per homeless Ind. (Food)	\$730 (Saved)	(no savings)	(no savings)	\$3,650	\$7,300	\$10,950	\$14,600	
Farm Produce Value (plants, food, seed)	(Produced)	\$106,456	\$110,714	\$115,143	\$119,749	\$124,538	\$129,520	
Income of Individuals Served	(Earned)	\$59,500	\$112,500	\$225,000	\$337,500	\$450,000	\$562,500	
Environmental Benefit (Assumed value)		\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	
<b>Total Benefits:</b>		<b>\$0</b>	<b>\$170,956</b>	<b>\$800,089</b>	<b>\$1,492,543</b>	<b>\$2,185,174</b>	<b>\$2,877,988</b>	<b>\$3,570,995</b>
<b>Investment - Costs (Operating, Depreciation)</b>								
Farm Operating Cost		\$290,213	\$301,822	\$313,894	\$326,450	\$339,508	\$353,088	
Farm Oversight Costs		\$0	\$32,167	\$33,454	\$33,454	\$33,454	\$33,454	
Farm Design and Build Costs		\$0	\$0	\$0	\$0	\$0	\$0	
Farm Capital Investment		\$0	\$0	\$0	\$0	\$0	\$0	
Income of Individuals Served (Farm Trainee Pay)		\$59,500	\$61,880	\$64,355	\$66,929	\$69,607	\$72,391	
SLC's Cost per Homeless Individual	\$9,375	\$75,000	\$75,000	\$78,000	\$81,120	\$84,365	\$87,739	\$91,249
Utah's Cost per Homeless Individual	\$105,000	\$105,000	\$105,000	\$109,200	\$113,568	\$118,111	\$122,835	\$127,749
Fed Cost per Homeless Individ (SNAP,HUD)	(TBD)							
Charities Cost per homeless Ind. (Food)	\$730	\$5,840	\$5,840	\$6,074	\$6,317	\$6,569	\$6,832	\$7,105
Farm Depreciation Cost (Replace in 15yr(7%))		\$0	\$0	\$0	\$9,345	\$9,345	\$9,345	\$11,935
<b>Total Costs:</b>		<b>\$535,553</b>	<b>\$589,142</b>	<b>\$612,708</b>	<b>\$645,223</b>	<b>\$669,320</b>	<b>\$696,971</b>	
<b>Cash Flow. (Revenue - Expenses)</b>								
Farm-Only		-\$183,757	-\$191,107	-\$198,752	-\$206,702	-\$214,970	-\$223,568	
Farm+Community+State		-\$364,597	-\$210,947	\$879,835	\$1,539,951	\$2,208,669	\$2,874,024	
<b>SROI- By Year</b>		<b>-\$364,597</b>	<b>\$200,902</b>	<b>\$798,036</b>	<b>\$1,330,267</b>	<b>\$1,817,077</b>	<b>\$2,251,873</b>	
		<b>Sum of Discounted Annual Cash Flows:</b>		<b>\$6,033,559</b>				

Addressing the state of homelessness is a complex challenge because of the unique mental, physical, emotional and spiritual needs of each individual. Confidence is often lost through community and support network disconnection. Most agree that success is realized when local government, academia, nonprofits and businesses work together to help remove barriers and connect individuals to others and employ them according to their capabilities and interests. Those who are succeeding in this work know that this cooperative effort and programming often takes years of consistent implementation to show credible results.

It is important to note that if this farm were driven by making a profit, the effectiveness of the housing and job training program objectives would be negatively impacted. Removing the profit motive allows staff and program participants to focus on the program and the individual. The farm is designed and operated to provide a safe space for reflection, and positive reinforcement. The farm's primary mission is a social outcome, helping on an individual level but resulting in a greater collective benefit. The "efficiency imperative" would effectively destroy the opportunity for interactions which help crew members feel good, inspired, and appreciated. Rather than worrying about production rates, the team's primary goal is to build confidence through small, daily wins.

However, the economic return comes in the years following a crew member's experience on the farm. Their relaunch, which builds stability back into their lives, enables them to retain their employment and housing. Their new incomes return money back to the economy.

## Capital Investment

Assuming the farm operates on the same scale as Green Phoenix Farm, listed below is what Eden Streets considers the minimum capital investment to both operate the farm and a job training program. Please note that the farm operates off grid using solar cell power generation. Sanitary services are provided for on a contract basis.

### Green Phoenix Farm - Capital Investment

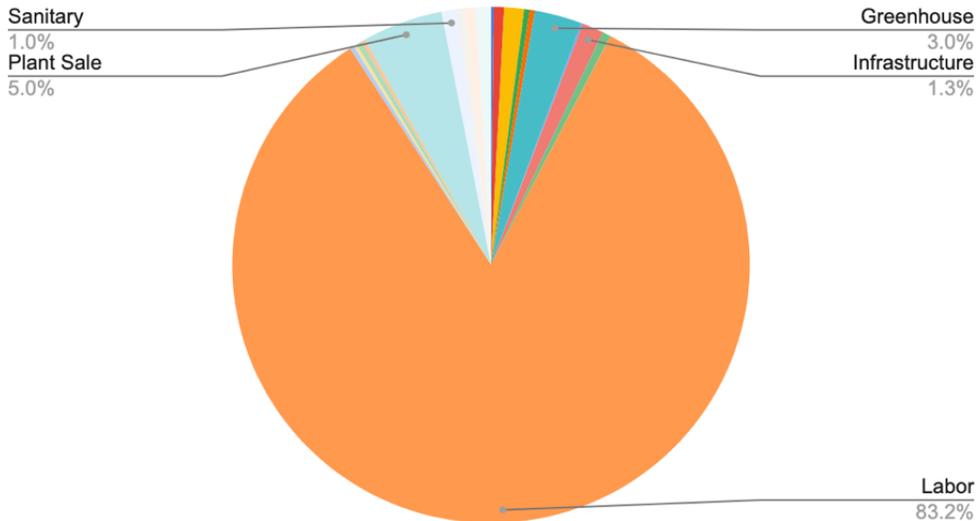
	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>CapEx Category</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Intensive Cultivated Acres	0.5	0.5	0.8	0.8	0.8	0.8
Farm Startup Investment	\$xx,xxx					
Greenhouse- Main		\$xx,xxx				
Processing Building			\$xx,xxx			
Kitchen			\$xx,xxx			
Idea Lab			\$x,xxx			
Storage / Locker Building			\$x,xxx			
Tool Building			\$x,xxx			
Solar Array					\$xx,xxx	
Cube			\$x,xxx			
Greenhouse 2						\$xx,xxx

(removed- not open source)

It is important to note that where possible, repurposed materials were used to build the farm. For example, shipping containers were remodeled for tool storage, cooler space, office, and produce processing areas. When these previously unemployed individuals now are able to increase their hourly wage by 56% and a network of cohorts who know and can support one another, the impact on society becomes positive.

## Operating Costs

### SUM of Expense



(removed- Not open source)

### Labor

Labor is the largest operating cost component of the farm. The mission of the farm (Green Team Job Training Program) is to provide employment, mentorship, and work readiness training for women facing homelessness. Its intention is to have a positive impact through an educational experience. Having profit as the primary objective does not serve the goals of the farm. The goal of the farm is to maximize the long-term potential of the women – to have a lasting impact that allows them to be sustainable in the long run. A for-profit farm would employ the most experienced labor it could hire. However, the purpose of the farm is to create meaningful work. It is through meaningful work in a supportive, team environment that a person’s confidence is built. Their self-image and self-esteem improve as they see the very tangible results of their labor. It is difficult to conceive of a product that has more intrinsic value than food which every human on this planet needs to have at least daily.

The farm’s leadership team consists of four designated roles, all of which work closely together to operate the farm and deliver the Green Team program. By working together to support the team, participants learn that there is a network of individuals in the community who are excited to support them along their journey to self-sufficiency. These are underpinned by the work of an human resource partner and Wasatch Community Gardens’ administrative and fundraising staff. The roles are as follows:

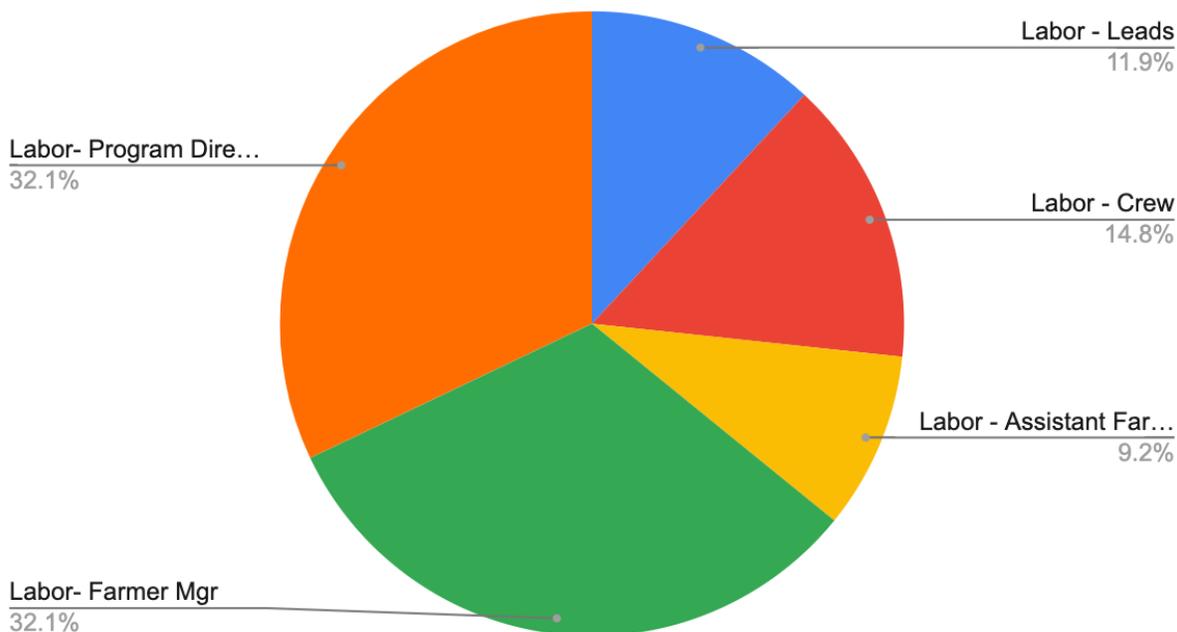
- I. **Farm Director (full-time, employed by Wasatch Community Gardens)** - Oversees the farm’s operations and serves as the work supervisor and farm education instructor for the Green Team. Additionally, the Farm Director is responsible for infrastructure

construction and maintenance and all the materials/tools needed for daily farm operations.

- II. Program Director (full-time, employed by Wasatch Community Gardens)** - Oversees major elements of the job training program including partnerships, recruitment, soft skills curriculum, employer relations, alumni engagement. The Program Director also supports other WCG initiatives and administrative tasks.
- III. Advocate (10 hours/wk, employed by a human resource partner)** - Supports the women in the program through weekly mentoring, individual advocacy, and working with the group once per week. The advocate supports each individual through crisis and challenges, prioritizes housing advocacy, and works with individuals to help build strong, transferable work and life skills.
- IV. Farm Assistant (1700-hour seasonal position, employed by AmeriCorps)** - Serves as the assistant to the Farm Director and assists with all aspects of farm operations. Occasionally oversees the team and volunteers on special projects.

There are three levels of labor pay: direct, operational oversight, and program. The labor pie chart breaks these out. Direct labor goes into the farm work of sowing, transplanting, weeding, harvesting, and packaging. While some of the Farm Director and the Program Director’s time is also involved in direct labor, it is only a small percentage. The crew members, the grow leads, and the assistant farmer fall into this category. The Assistant Farmer is nearly 90% dedicated to direct labor. The farm crew members and grow leads are about 60% dedicated to direct labor. The remaining time is spent in program and personal development.

Farm Labor Cost 2021 (Green Phoenix Farm)



**Total Green Phoenix Farm 2021 Labor Costs: \$253,700**

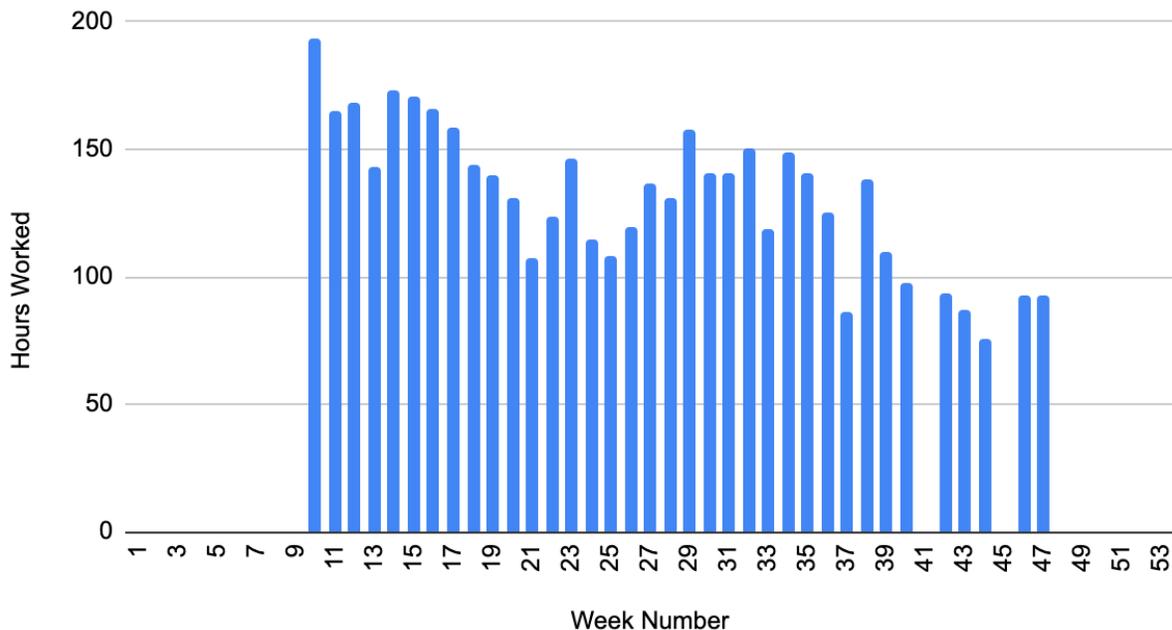
### Crew

Current farm labor rates in Utah are between \$8 to \$20 per hour<sup>4</sup> depending on the accompanying benefits. In 2021, the farm hired at \$8.50/ hour and provided regular performance-based raises. The women were aware that the farm offered not only employment but also job training. The farm’s two crew leads earned \$10/hour. Both crew members and leads are limited to work no more than 29 hours a week. Crew members worked Tuesday through Fridays for typically six hours per day. The benefits received for each participant also included:

- Free, farm-fresh lunch each day
- Two to four hours per week of group job training
- One hour per week of individual life and job coaching
- Two hours per week of farm training
- Regular opportunity to harvest and take home free farm produce
- Work hour flexibility to accommodate medical, legal, childcare appointments.

The labor hours by week chart below shows the impact of crew members leaving for reasons of health, job fit versus life situations, or next job during the season. Peak farm labor is required in March through August.

Green Phoenix Farm Crew Labor Hours -2021



Summarized crew contribution labor hours are shown in the table below:

<sup>4</sup> <https://www.indeed.com/career/farm-worker/salaries/UT>  
<https://www.careerexplorer.com/careers/agricultural-worker/salary/utah/>  
<https://jobs.utah.gov/jsp/utalmis/#/occupation/45-2092.02/report>

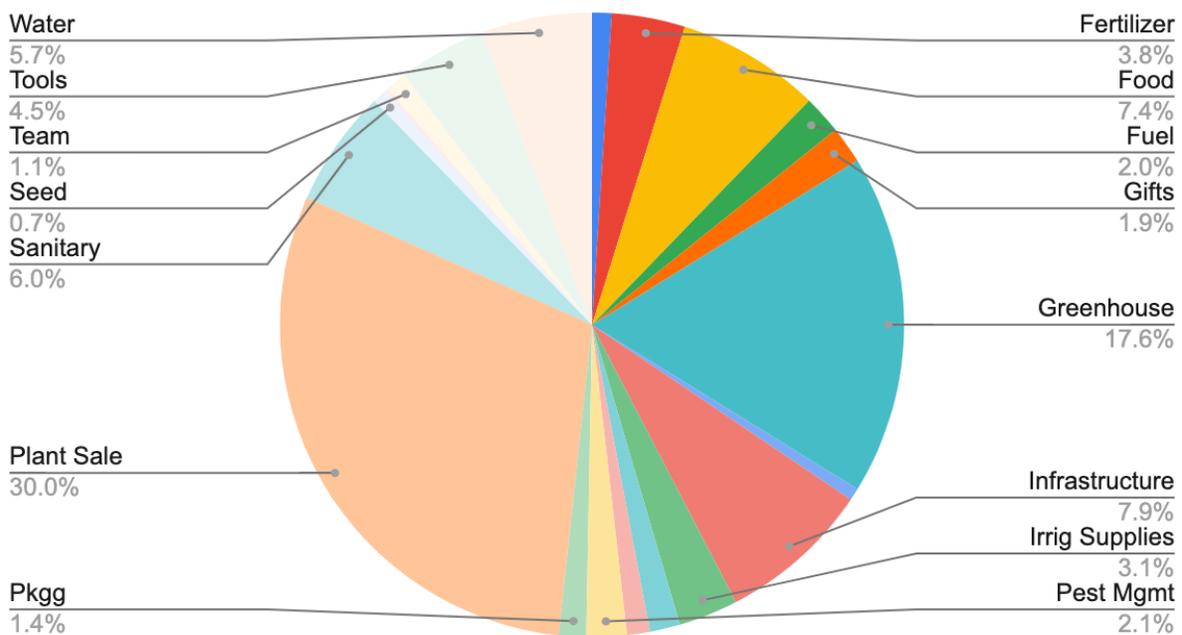
(Removed - not open source)

The farm assistant is employed for the full season from February through November. The assistant is employed by AmeriCorps and committed to complete 1700 hours during the growing season. AmeriCorps and Wasatch Community Gardens contribute to this employee’s salary. The benefits for the assistant farmer include

- Direct farm education from the farm director
- An experience of the program as its impact on the crew members
- Free lunches
- Free food to take home for personal use

### Non-Labor Costs

GPF Farm Cost-2021 (non-labor)



**Total Non-Labor Farm Cost – Green Phoenix Farm 2021- \$31,477.**

Plant sale, infrastructure, food, sanitation, water and tools make up 80% of the non-labor costs of Green Phoenix Farm. The plant sale costs include pots, potting soil, and trays, although most trays can be reused from year to year. The Green Phoenix Farm assumes the role as a wholesaler to Wasatch Community Gardens. The unsold remainder of the seedlings were divided into 40 shares to donate to local growers.

The food category covers the additional food purchased to supplement farm produce, used primarily for team lunches. It also includes the food purchased for three alumni celebration

events as well as canning and food preservation supplies. Infrastructure is part of maintenance and the purchase of the equipment that will last from year to year.

Contract labor is called for to repair electrical motorized or control systems as necessary. However, a bulk of the routine maintenance is done by the farm director and with occasional assistance from Wasatch Community Gardens' facilities manager.

### Water Consumption

Using drip irrigation, the farm conserves water needed for growing crops. Shown below is the graph of water consumption by month:

### Irrigation Water Monthly Consumption

<b>Irrigation Water</b>	<b>2021</b>	<b>Average Water Rate</b>	
<b>Green Phoenix Farm</b>	SLC, UT		
<b>1.38 acres</b>	<b>total land</b>		
<b>100 CuFt</b>	<b>CuFt</b>	<b>Gallons</b>	
<b>Jan</b>	1	100	748
<b>Feb</b>	2	200	1496
<b>Mar</b>	12	1200	8976
<b>Apr</b>	45	4500	33660
<b>May</b>	82	8200	61336
<b>Jun</b>	117	11700	87516
<b>Jul</b>	330	33000	246840
<b>Aug</b>	163	16300	121924
<b>Sep</b>	157	15700	117436
<b>Oct</b>	60	6000	44880
<b>Nov</b>	4	400	2992
<b>Dec</b>	2	200	1496
<b>TOTALS</b>	<b>975</b>	<b>97500</b>	<b>729300</b>

**Total Consumption**                      **2.24 acre feet of water per year**  
**Irrigation Rate:**                              **1.62 acre feet of water per acre per year**

On a per acre water consumption scale, 97,500 cubic feet (730,000 gallons) of water per year for 1.4 acres represents 70,652 cubic feet per acre or 1.62 acre-feet of water per year. This compares to Utah farmland irrigation rates for crop land in low valley, high water-loss areas of 5-acre feet of water per acre. 1 acre foot of water is equal to 325,851 gallons or 43,563 cubic feet.

Therefore, **Green Phoenix Farm consumes 68% less water than the average Utah farmer.** It should be noted that the total water consumed includes not only crop irrigation but also water for processing, cooking, and cleaning. This is around 63% of the average water use per acre for irrigating vegetable farms in the west (1,140,401 gallons of water based on 3.5-acre feet/year), while producing over nine times the average yield per acre for vegetables in the US.<sup>5</sup> (The

<sup>5</sup> [https://www.nass.usda.gov/Publications/Todays\\_Reports/reports/vegean20.pdf](https://www.nass.usda.gov/Publications/Todays_Reports/reports/vegean20.pdf)

Green Phoenix Farm output \$80,434 per acre leased in 2021 vs US vegetable farm average of \$5,966 per acre in 2020).

## Environmental Regeneration

Wasatch Community Gardens opts to share the farm program designed to restore the ecology on this urban log at the link below:

<https://wasatchgardens.org/job-training>

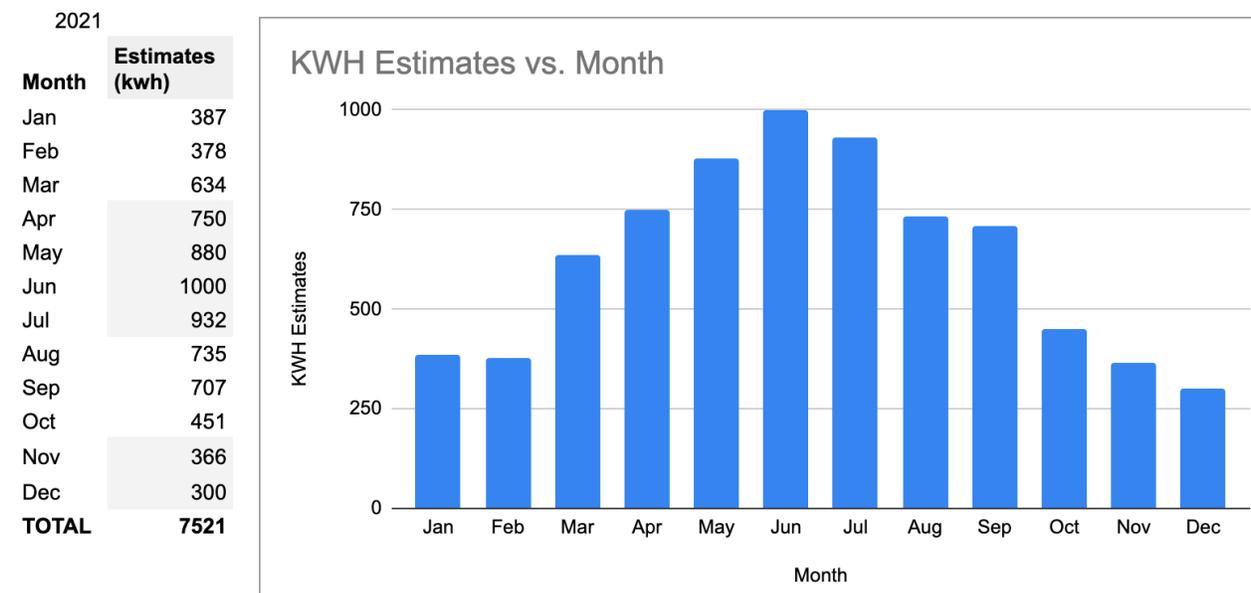
Farm operation details can be found on this page:

<https://docs.google.com/document/d/11ZQMSL1qyD8psF15TyN5B7iP9-fAEFgpW4UuvB68fXA/edit>

(removed- not open source)

### Green Phoenix Farm Solar Power Generation

(approximates a bell curve with peaks at June 21)



## Program

Wasatch Community Gardens opts to share their program information at the link below:

<https://wasatchgardens.org/job-training>

Program details can be found on this page:

<https://docs.google.com/document/d/1xRuwwZOXcMW9L9kDZUcVVImwU8xA8If04gp6VPU2Urc/edit>

## Community Enrichment

The dimensions of community enrichment enhanced by the Green Phoenix Farm include volunteers, students, and visitors. The farm offers work project opportunities for volunteers which have a specific endpoint that can be accomplished within a few hours. Groups of university or high school students have toured the farm as part of their environmental and social study classes.

The table below summarizes each sector of the community impacted by the Green Phoenix farm. The total number of people impacted by the farm is 4690 in 2021.

<b>Green Phoenix Farm - 2021</b>		<b>Wasatch Community Gardens</b>	
<b>Community Members Impacted</b>			
<b><u>Sector</u></b>	<b><u>Scope</u></b>	<b><u>Persons</u></b>	<b><u>Comments</u></b>
<b>Gardeners</b>	Salt Lake Valley	1,800	40,000 Seedlings
<b>Donors</b>	Wasatch Community Gardens	80	80 personal deliveries
<b>Food Recipients</b>	13 different organizations	2,134	includes shelters
<b>Farm Crew</b>	Women	11	100's of hours
<b>Volunteers</b>	unique persons	300	project-based
<b>Students</b>	High School , University & GULB	100	virtual and actual tours
<b>Visitors</b>	Donors, Neighbors, Interested	250	tours, education
<b>Farm and WCG Staff</b>	Support of peak work tasks	15	produce, experience
<b>TOTAL</b>		<b>4,690</b>	

These activities could not all be coordinated without the overarching support of Wasatch Community Gardens.

### Volunteers

Volunteers play a key role in both providing additional labor as well as opportunities for community engagement and funding. Volunteers are generally split into three categories; individual, groups, and community service volunteers.

Volunteers are recruited via Wasatch Community Gardens communications, social media, as well as posting in the courts for community service volunteers. Volunteers are registered through an

online signup system. As part of their orientation, they attend a brief online training about being sensitive and appropriate when working with a vulnerable population. Those qualified volunteers are then able to sign up for the volunteer projects posted.

A typical year sees hundreds of volunteers contributing thousands of labor-hours of work. The farm director is responsible for making sure their work is productive, enjoyable, memorable, and recognized. Particular detail is paid to making sure there is an education component to allow volunteers from a gardening background to deepen their understanding of techniques in use at the farm. Similar detail is paid to volunteer groups to ensure their experience deepens their connection to each other and their organization, as well as providing a project that demonstrably shows accomplishment. In all cases, showing adequate gratitude, particularly in social media, has a dramatic effect on retaining and recruiting volunteers.

This steady stream of volunteers has been critical to address the periods of peak farm labor demand when the women may not have been available or able to handle it by themselves. These critical tasks include planting, harvesting, weeding, and composting. Large groups of corporate volunteers have been able to accomplish large projects within a day.

The table below shows that 510 different volunteers at Green Phoenix Farm rendered 2986 hours of volunteer work. These volunteers come with enthusiasm and energy to work 2-to-4-hour sessions. They help model enthusiasm to the farm crew members.

### Visitors

It seems like the farm, although located in an obscure part of the city yet a few blocks away from the center city, attracts a constant stream of visitors. Wasatch Community Gardens uses the farm as an exhibition of the ideals of local organic produce and the experience of growing it.

Prospective and current donors are given personal tours of the farm. There are those neighbors who enter just to find out what is going on at the farm. Others visiting include horticulturalists or aspiring farmers. Those experiencing homelessness also visit the farm.

According to a daily log diary kept while working at the farm, a total of approximately 250 visitors came to experience the farm. Many were giving guided informational tours.

### Students

The farm serves as a demonstration site for the above approaches to ecologically-focused agriculture. The Green Phoenix Farm regularly hosts student groups, farmer trainings, corporate volunteer groups, and visitors strolling through the area. Before the pandemic the Green Phoenix Farm was the host to *Catalyst Magazine's* "Bee Fest," which saw as many as 1,600 attendees who learned about native pollinators, habitat, and conservation work. Giving guided tours provides an engagement point for the public to learn about the various techniques in action around the farm.

Each year The Green Phoenix Farm works with eight to ten college students engaged in research or thesis projects. These students are primarily studying civil engineering/city planning, environmental education, sociology, diet and nutrition, and biology. The farm and staff provide important context, direct support, and often a location for experiments and research projects.

In 2021, students from the following universities were involved at the Green Phoenix farm: Westminster College, Brigham Young University, and the University of Utah. One remote, online tour of the farm was hosted for two Manila, Utah high school social geography classes. The Green Phoenix Farm estimates that approximately 100 students have been impacted by the Green Phoenix Farm. The farm served as the laboratory and workplace for three student projects and three internships.

The Green Phoenix Farm, in partnership with the Green Urban Lunchbox (GULB), hosts a number of classes for the Small Farm Initiative program. Farm Director James Loomis teaches a number of classes to this group of aspiring farmers, including soil biology, composting and compost extracts, farm design, and compliance with food laws. The farm provides an ideal classroom for these students.

### Food Recipients Fed

Furthermore, the food from the farm goes out to support Wasatch Community Garden's Youth Garden Club, the Family Garden Club and Youth Summer Camp in a Box. Below is a list of 14 organizations that receive Green Phoenix Farm food and the value of the food they have received. The number of persons who were able to eat Green Phoenix Farm-grown produce is estimated at 2,134 people. At \$1.50 per organic food serving, this amounts to 42,653 servings. This figure does not count the 40,000 vegetable seedlings grown at Green Phoenix Farm sold to 1800 gardeners in the Salt Lake valley to grow their own produce.

47 different types of fruit- or vegetable-producing plants were stewarded on the farm this year. Please see appendix for the table of produce value by type. Various techniques were used to optimize the growth and productivity of these plants. A table was put together to summarize the produce grown at Green Phoenix Farm in 2021 with the value of each based on local pricing for retail and wholesale customers with peak and off-peak pricing.

(Removed- not open source)

### Community Support

The farm is one of five pillars of the Wasatch Community Gardens offerings to the community. Without the generous donations of community members, corporations, and the City of Salt Lake this program would not have been possible. The program and farm are reliant on the work of WCG's development team. This team consists of a part-time Individual and Corporate Giving Director, who focuses on individual donor relations plus a Director of Foundation Giving who manages grant funding for the organization.

It is because of this collective ownership and support of the urban farm that this program is able to deliver these results to the community. Eden Streets acknowledges Wasatch Community Gardens, its partners and donors for their significant, vital support.

### Headwinds

To consistently deliver this produce, the seed and seedling commitment, as well as the social benefits promised by this job training program requires a high degree of foresight, planning,

flexibility and coordination. Farming in the past years in Utah has been adversely affected by record-breaking extended heat waves. Paying close attention to the immediate and two-week forecasts enables the farmer to optimize planting, harvesting and watering times and rates.

Additionally, program participants face instability and a high degree of uncertainty in their lives as they work through issues like housing and job placement. Program participants often struggle greatly in meeting basic needs and maintaining the stability in their lives that enables ongoing participation in the program (transportation, childcare, healthcare services, housing, food access, clothing, and other resources). Many participants experience a shortened time horizon and are accustomed to focusing on their basic needs like where they will sleep or what they will eat after work. While the team works hard to support participants in these areas, the tumultuous nature of living in poverty is a daily challenge at the farm and the leadership team continually seeks out creative ways to support participants and increase stability.

COVID has been a health factor through which the whole community on and off the farm has been impacted. Vigilance in carrying out safety procedures has enabled the farm to continue to operate. In addition to operating challenges, COVID has adversely impacted recruitment and retention for the Green Team. The United Nations recognized that “the impacts of the COVID-19 pandemic are falling ‘disproportionately on the most vulnerable: people living in poverty, the working poor, women and children, persons with disabilities, and other marginalized groups’”<sup>6</sup>. Due to COVID restrictions, the Green Phoenix Farm had to scale back the Green Team program in 2019 and 2020 to ensure safety for participants and program staff. An additional challenge has been the economy-wide labor shortage which has posed additional challenges to our recruitment and hiring process.

Given these factors, the output of the farm has truly been outstanding and remarkable. The credit goes to the program director, the farm director and the executive director at Wasatch Community Gardens.

## Historical Development of the Farm

It is important to acknowledge that the Green Phoenix Farm just completed its fifth year of operation. As with any new program, it has taken several seasons for the farm and program to reach its current capacity. The table below summarizes the farm development with continued capital investment as the crew was able to fully utilize previous investments.

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<sup>6</sup> (<https://news.un.org/en/story/2020/06/1067502>)

## Green Phoenix Farm - Capital Investment

	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
<b>CapEx Category</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>
Intensive Cultivated Acres	0.5	0.5	0.8	0.8	0.8	0.8
Farm Startup Investment	\$xx,xxx					
Greenhouse- Main		\$xx,xxx				
Processing Building			\$xx,xxx			
Kitchen			\$xx,xxx			
Idea Lab			\$x,xxx			
Storage / Locker Building			\$x,xxx			
Tool Building			\$x,xxx			
Solar Array					\$xx,xxx	
Cube			\$x,xxx			
Greenhouse 2						\$xx,xxx

(Capital expenditures were removed- not open source.)

The farm has been planned in three segments that complement the three products of the farm: seedlings, food and flowers, and seeds. Building the necessary structures and infrastructure to support the production of these deliverables has been integrated effectively into the operating plan. While a comprehensive operating plan guides daily farm tasks, it is important to note that a high degree of flexibility and adaptability is required in the farm setting to adapt to weather, team needs, partner requests, and plant growth.

## Conclusion

The Green Phoenix Farm staff continue to deliver a strong, positive social return on investment. Each year Wasatch Community Gardens' Green Phoenix Farm has grown in the area cultivated as well as in its ability to serve those facing homelessness. At Green Phoenix Farm, staff are always striving to navigate a new set of variables and ever-changing headwinds. These inputs are a part of the Green Phoenix Farm transitional employment program. Social change, like farming, is a process of trying to thrive amidst a complex, ever-changing set of variables.

## Appendix

### Social Return on Investment

Social Return on Investment (SROI) is **an organizational method of accounting for value creation**, primarily social or environmental value. SROI enables organizations to measure how much change is being created by tracking relevant social, environmental, and economic outcomes.

#### SROI TERMS (SROI DEFINITIONS)

**Attribution:** An assessment of how much of the outcome was caused by the contribution of other organizations or people.

**Deadweight:** A measure of the amount of outcome that would have happened even if the activity had not taken place.

**Discounting:** The process by which future financial costs and benefits are recalculated to present-day values.

**Discount rate:** The interest rate used to discount future costs and benefits to a present value.

**Drop-off:** The deterioration of an outcome over time.

**Duration:** How long (usually in years) an outcome lasts after the intervention, such as the length of time a participant remains in a new job.

**Impact:** The difference between the outcome for participants, taking into account what would have happened anyway, the contribution of others, and the length of time the outcomes last.

**Income:** An organization's financial income from sales, donations, contracts, or grants.

**Inputs:** The contributions made by each stakeholder that is necessary for the activity to happen.

**Net present value:** The value in today's currency of money expected in the future minus the investment required to generate the activity.

**Outcome:** The changes resulting from an activity. The main types of change from the perspective of stakeholders are unintended (unexpected) and intended (expected), positive and negative.

**Outputs:** A way of describing the activity concerning each stakeholder's inputs in quantitative terms.

**Outcome indicator:** Well-defined measure of an outcome.

**Proxy:** An approximation of value where an exact measure is impossible to obtain.

**Scope:** The activities, timescale, boundaries, and type of SROI analysis.

**Social return ratio:** Total present value of the impact divided by total investment.

**Stakeholders:** People, organizations, or entities that experience change, whether positive or negative, as a result of the activity that is being analyzed.

According to a guide by the UK Cabinet Office, with methodology development supported by Social Value International, there are 7 key principles underlying the application of the SROI methodology.

SROI measures change in ways relevant to the people or organizations that experience or contribute to it, assigning monetary values to represent social, environmental, and economic outcomes.

As a result, this valuation produces a ratio of benefits to costs or investments (inputs). For example, a ratio of 3:1 indicates that every \$1 delivers \$3 of social value. To estimate the value of the outcomes, SROI uses financial approximations - or proxies - that may vary according to the stakeholder.

The seven SROI principles are:

- Involve stakeholders.
- Understand what changes.
- Value the things that matter.
- Only include what is material.
- Do not over-claim.
- Be transparent.
- Verify the result.

Here's how it is calculated:

Website Sopac.com

[https://www.sopact.com/social-return-on-investments-sroi#:~:text=Social%20Return%20on%20Investment%20\(SROI,%2C%20environmental%2C%20and%20economic%20outcomes.](https://www.sopact.com/social-return-on-investments-sroi#:~:text=Social%20Return%20on%20Investment%20(SROI,%2C%20environmental%2C%20and%20economic%20outcomes.)

## Homelessness Management Costs – Annotated Bibliography

**Culhane, D. P., & Metraux, S. (2008). Rearranging the deck chairs or reallocating the lifeboats? homelessness assistance and its alternatives. *Journal of the American Planning Association*, 74(1), 111-121. <https://doi.org/10.1080/01944360701821618>**

This paper analyzes the demographics of unhoused people who utilize shelters across the United States. The authors use this demographic analysis to critique the current methods of addressing homelessness, which consists primarily of emergency and transitional housing facilities. They critique these facilities by arguing that shelters have become highly institutionalized, which means that unhoused people remain reliant on shelters for long periods of time. They suggest that funds should be allocated instead to “community-based programs” that would provide more permanent solutions for people experiencing chronic homelessness. The suggested programs would not just focus on providing accessible and affordable housing, but would include a much broader support system that addressed the root causes of chronic homelessness. The goal of our project is to prove that the Green Phoenix program is cost effective, particularly because it reduces homelessness in the *long-term*. This article will be useful as the Green Phoenix Farm is a program that aids unsheltered women with complex interventions that go beyond simply providing housing, which is the type of intervention that the authors argue will be most effective at reducing homelessness.

**Evans, W. N., Sullivan, J. X., & Wallskog, M. (2016). The impact of homelessness prevention programs on homelessness. *Science*, 353(6300), 694-699. <https://doi.org/10.1126/science.aag0833>**

This paper analyzes the use of financial assistance programs for unsheltered people. The authors analyzed data from the Homelessness Prevention Call Center, which directs Chicago residents who are at risk of becoming homeless to financial assistance. The goal was to determine how effective the Homelessness Prevention Call Center is at helping people avoid homelessness. The biggest problem they found with the current funding structures was that people who did receive funds probably would not have become unsheltered even without the assistance. On the flip side, people who were already unsheltered did not have access to enough funds to help them find sustainable permanent housing. These authors suggest that the funding structure would be effective if funds reached the people who really need them to avoid homelessness. This article will be useful to us because it details the costs associated with homelessness including high mortality rates, learning disabilities, healthcare, and children without guardians. While these authors have a specific suggestion about reallocating funds from a specific call center, their broader arguments about the costs of homelessness will be helpful for us. It is possible to use their data to prove that community programs, like the Green Phoenix Farm, is a more cost effective method of preventing homelessness than traditional methods like shelters or emergency housing funding.

**Gubits, D., Shinn, M., Bell, S., Wood, M., Dastrup, S., Solari, C., Brown, S., Brown, S., Dunton, L., Lin, W., McInnis, D., Rodriguez, J., Savidge, G., & Spellman, B. (2015).**

***Family Options Study Short-Term Impacts of Housing and Services Interventions for Homeless Families.* U.S. Department of Housing and Urban Development Office of Policy Development and Research.**

**file:///C:/Users/alocalid/Downloads/SSRN-id3055272.pdf**

This paper studied the differences between three interventions for unsheltered people -- permanent housing subsidies, community-based rapid re-housing, and project based transitional care -- and how they compare to traditional intervention methods. The report compares these methods across several dimensions including “housing stability, family preservation, adult and child well-being, and self-sufficiency” (xvi). The authors present some important findings, including that traditional emergency shelter responses are the most costly (on average) but also the least effective at getting unsheltered people into permanent housing. This paper also analyzes the wellbeing of unsheltered people in each program, which will be important to consider in the final project. This paper will be helpful because it breaks down the explicit cost differences between different intervention programs. The authors outline the costs of each program per family and also include the financial assistance they need after the end of their program. There are many hidden costs of homelessness that need to be uncovered to effectively prove the value of the Green Phoenix Farm, and this paper does a good job of comparing different programs by cost.

**Kim, K., & Garcia, I. (2019). Why do homeless families exit and return to the homeless shelter? Factors affecting the risk of family homelessness in Salt Lake County (Utah, United States) as a case study. *International Journal of Environmental Research and Public Health*, 16(22), 4328. <https://doi.org/10.3390/ijerph16224328>**

This paper analyzes the risk factors for families returning to homeless shelters. The authors identify the “physical, social, and economic characteristics” that affect the chances that a family will return to a shelter. One important finding of this study, that confirms the results of several other studies, is that families who get support with finding permanent housing are more likely to stay housed and become more independent and financially stable. The authors argue that structural factors such as socioeconomic status are more relevant than individual characteristics, which are often deemed as risk factors for homelessness. This paper will be helpful in the project because it argues that programs must do more than just provide shelter to effectively help people escape homelessness. To prove the effectiveness of the Green Phoenix program, it will need to be demonstrated that multi-faceted programs are more effective than emergency shelters. This paper provides data-backed propositions for the most effective approaches to supporting unsheltered people that align closely with the work and objectives of the Green Phoenix Farm.

**State of Utah Annual Report on Homelessness. (2019). Workforce Services Housing and Community Development.**

**<https://jobs.utah.gov/housing/scso/documents/homelessness2019.pdf>**

This paper provides an overview of homelessness in Utah in 2019. The authors present Utah’s current approaches to addressing homelessness, display current data for the

homeless population by county, and lay out goals for the future. This paper contains important demographic information about Salt Lake City's homeless population and the number of people living in each type of subsidized housing. The final project will be heavily supported by data and cost comparison, this paper will be an important resource for us determining some of the up-front costs of homelessness for Utahns. Once the cost of each of the current programs is determined, it will be possible to determine how much Utah is spending per individual. This paper will also be helpful when it comes to comparing the outcomes of the Green Phoenix Farm programs to Utah's goals. The main goals the authors outline are to keep homelessness rare, brief, and non-recurrent in Utah. It can be argued that the Green Phoenix Farm program is helping the state to reach these desired outcomes.

**Greene, C. (2019). Food, Shelter, Hope: Examining the Possibilities of Agricultural Tiny Home Communities for the Homeless. *Georgetown Journal on Poverty Law & Policy*, 27(1), 3.**

<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edsgao&AN=edsgcl.611932542&site=eds-live>

This article discusses links between homelessness and food security. There are some great examples highlighted of uses of tiny home communities around the country and how community-based agriculture can help the homeless communities. This ties in great with our project because it is urban agriculture as well as providing shelter for unsheltered folks. We want to look at other alternative methods for providing the homeless populations with resources and this article is a great resource. It also brings in a legal component and what challenges are faced when trying to build a community such as the ones discussed in the article. That is also an interesting piece that is unique to this article, overcoming developmental barriers and the political/legal side of a project such as this.

**Lefebvre, E. (2018). First comes housing: Housing first models are an efficient and cost-effective way to help the chronically homeless, but they're just one part of the solution to end homelessness. *U.S. Catholic*, 2, 12.**

<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edsgao&AN=edsgcl.528075978&site=eds-live>

This article targets the need for affordable housing and it highlights why the government should invest in that. Lack of housing has been found to only increase medical, mental health, substance abuse, and employment problems, so getting a solid plan for affordable housing should be on pretty high priority for the city and state governments. It is something that is easy to invest in, and will provide the city with more tax revenue as well as having to spend less on the homeless population. This article gives a lot of insight towards more logistical issues and solutions to the housing crisis, as well as some key insight from housing projects in other cities like Philadelphia. In addition, there are some good statistical data given on Salt Lake City specifically. Overall, this paper can be used quite often whether it is with referencing housing examples to other areas, using

statistical data, quoting experts, or suggesting ideas on ways to create affordable housing and alleviate other issues.

**Prall, D. (2015). Homes for the homeless in Utah. *American City & County Exclusive Insight*, 3.**

<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edb&AN=100384766&site=eds-live>

This article is about the Housing First initiative in Utah and that focuses on getting people sheltered and secure regardless of any mental illness or substance abuse or any problems they may be facing that is causing their homelessness. This article argues that providing an individual with a place to stay or a home is the first step to “stabilize” some of the medical, addiction, or employment issues that individual may be having. This article also offers some statistical figures on what a housing project like this might cost, which can be very useful when doing a project such as ours. These figures can be used to compare to other initiatives potentially being done in other areas to try and find the most effective and efficient solution. This article will be very useful to us with this project because it ties in a few different avenues of issues and links them all back to being unsheltered. It especially helps that this is from Utah.

**State of Utah Annual Report on Homelessness. (2020). Workforce Services Housing and Community Development.**

<https://jobs.utah.gov/housing/scso/documents/homelessness2020.pdf>

This is the stated annual report on homelessness. There will be tons of good figures and data that can be pulled from this report that can be used in potentially finding the average cost per unsheltered person. It can also provide a lot of information that others may not be aware of, some of the acts and initiatives that Utah has enacted surrounding the homeless population. Assuming the data is accurate, this will be a tremendously important thing that will be constantly referred to when doing this project. It would be very interesting to chat with someone who helped create or collect data for this report.

**Torres, K. (2015). Linking the Needy to the Needed. *Library Journal*, 140(17), 22.**

<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=lfh&AN=110530183&site=eds-live>

This article is about Project Uplift, which is basically a resource fair for the local homeless population. It is a way to connect social services, non-profits, education services, and all sorts of other organizations can come together and meet with people who are experiencing homelessness. This article is a little bit dated, so doing some more research and finding out more about Project Uplift in the more recent years will help the project by looking at what organizations are helping alleviate this issue and what resources are being made available by the city and state governments. It will be an interesting piece to tie in with this project because it can be added into the cost that the city is willing to spend on the problem with homelessness in Utah. It is cool to see an

event like this being organized by the city, however. Project Uplift will be something to look more into throughout this project.

#### Additional resources

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<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=cat06217a&AN=glc.94221&site=eds-live>

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DeMarco, A. L., Hardenbrook, R., Rose, J., & Mendoza, D. L. (2020). Air pollution-related health impacts on individuals experiencing homelessness: environmental justice and health vulnerability in Salt Lake County, Utah. *International Journal of Environmental Research and Public Health*, 17(22), 8413. <https://doi.org/10.3390/ijerph17228413>

García, I., & Kim, K. (2020). “I Felt Safe”: The role of the rapid rehousing program in supporting the security of families experiencing homelessness in Salt Lake County, Utah. *International Journal of Environmental Research and Public Health*, 17(13), 4840. <https://doi.org/10.3390/ijerph17134840>

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Matthew M. Mars. (2016). A Story of Urban Farming and the Cultivation of Community and the Human Spirit. *Journal of Agriculture, Food Systems, and Community Development*, 7(1).

<https://doi-org.ezproxy.westminstercollege.edu/10.5304/jafscd.2016.071.004>

<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=edsdoj&AN=edsdoj.3827cab481e4311b30ab038b2a35dd3&site=eds-live>

Metraux, S., Roman, C. G., & Cho, R. S. (2007). *Incarceration and Homelessness* [Paper presentation]. National Symposium on Homelessness Research. <https://www.huduser.gov/portal/publications/pdf/p9.pdf>

Moxley, V. B. A., Hoj, T. H., & Novilla, M. L. B. (2020). Predicting homelessness among individuals diagnosed with substance use disorders using local treatment records.

*Addictive Behaviors*, 102, 106160.

<https://doi-org.ezproxy.westminstercollege.edu/10.1016/j.addbeh.2019.106160>  
<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=cmedm&AN=31841870&site=eds-live>

Nelson, R. E., Suo, Y., Pettey, W., Vanneman, M., Montgomery, A. E., Byrne, T., Fargo, J. D., & Gundlapalli, A. V. (2018). Costs associated with health care services accessed through VA and in the community through Medicare for veterans experiencing homelessness. *Health Services Research*, 53(S3), 5352-5374. <https://doi.org/10.1111/1475-6773.13054>

Rose, J. (2019). Unsheltered homelessness in urban parks: Perspectives on environment, health, and justice in Salt Lake City, Utah. *Environmental Justice*, 12(1), 12-16.  
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Strongo, K., Smith, M., Gwilliam-Bell, M., Merrill, C., Coombs, C., LeBlanc, H., LeCheminant, J., & Richards, R. (2020). P153 A Homeless Health and Wellness Study. *Journal of Nutrition Education & Behavior*, 52(7), S88-S89.  
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<http://ezproxy.westminstercollege.edu/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eft&AN=144527525&site=eds-live>

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Additional links sharing costs of homelessness:

<https://www.urbanlibraries.org/innovations/project-uplift>  
<https://www.sfchronicle.com/archive/item/What-S-F-can-learn-from-Salt-Lake-City-30428.php>  
<https://www.slc.gov/hand/homeless-services/>  
<https://familypromisesaltlake.org/homelessness-in-salt-lake/>  
<https://www.scoop.co.nz/stories/HL2007/S00052/housing-first-utah-ends-homelessness-and-provides-shelter-for-all.htm#:~:text=In%20Utah%2C%20the%20state%20has,up%2011%2C000%20dollars%20per%20person.>  
<https://www.sltrib.com/news/politics/2020/04/23/state-allocates-million/>  
<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2748596> (good resource for setting up a cost analysis)  
<https://www.deseret.com/utah/2021/7/28/22597041/salt-lake-city-how-utah-is-succeeding-and-falling-short-with-homelessness>

Earth Day 2021 on the Green Phoenix Farm

DRAFT: March 31, 2021 - Karl Ebeling

Target: WCG's Monthly Newsletter

Sub lines:

**The Green Phoenix Farm, a job training center in downtown Salt Lake City, not only grows its own food. It generates its own energy from the sun. An “off-grid site”, the farm does much to teach environmental stewardship while donating high-value, good quality food to the city food banks.**

The Green Team, a crew of eight women, on Green Phoenix Farm will be celebrating Earth Day on April 22nd. Taking care of the earth means a lot of things to Farm Director James Loomis. It's been fundamental to the design of the farm since its creation in 2016. “We do things according to the highest organic farming standards here at Green Phoenix.”

“Given the farm's mission to employ and train women and otherwise support them so that they can be placed in housing and better-paying jobs, we have a lot of energy demands a farm of this size wouldn't have. While productivity is important, education is our primary goal. That education includes environmental education.”

In 2018, Wasatch Community Gardens was awarded a grant to purchase and install 12 solar panels (a total of 288 square feet) to generate its own electricity and not need to rely on the public electric grid for its power. “To a large extent, we have realized that goal each year since then”, said James. Those panels generate on average 700 kWh of power each month. That's approximately 20% shy of what a normal Utah household consumes. This power goes into keeping our seed germination heat mats warm in the spring and our walk-in food storage room cool in the summer. The power also goes to drive our greenhouse climate control system with motors to open vents and run a swamp cooler. Every day we serve lunch to our crew of 10 people. Left-overs and groceries are cooled in our refrigerator. Power tools needed for construction and repair products are also fed by our solar power system.

Sunlight is such an amazing resource. We are doing our best to harvest it and minimize the consumption of non-renewable fuels. Our 40,000 plant-sale plants harvest it every day. The \$27,000 worth of food we grow feeds not only our team but many in need in our community. That food all comes from the sun. Knowing we can be self-reliant on our own solar power system provides an important lesson on our stewardship of the earth for our team members.

## Produce Pricing and Record Keeping

A log was kept in the produce palace so that every delivery from the farm was tracked. Rather than just measure weight, the value of the produce (food and flowers) were calculated based on a standard grocery store pricing table by the appropriate quantity (bunch, oz, pound, or each) and whether the produce was sold retail or wholesale. The peak season was allotted for by an increase of 30%.

Based on these certified prices for local organic produce, a lookup table was built to calculate the market value for the produce.

(removed- not open source)

## Crew Member Farm Tenure and Placement

(removed- not open source)

## Outgoing Employment

(removed- not open source)

## Program Months Delivered

(removed- not open source)

## Irrigation Water Information

Included below are water rates for local Utah agriculture to be used for comparison to water consumption at Green Phoenix Farm.

### Water Bill for the farm:

(removed- not open source)

<https://www.waterrights.utah.gov/wrinfo/policy/wateruse.asp>

[https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=3129&context=extension\\_curall](https://digitalcommons.usu.edu/cgi/viewcontent.cgi?article=3129&context=extension_curall)  
[https://extension.usu.edu/irrigation/ou-files/ez-plug/uploads/Irrigation\\_in\\_Utah\\_Feb2017.pdf](https://extension.usu.edu/irrigation/ou-files/ez-plug/uploads/Irrigation_in_Utah_Feb2017.pdf)

## Produce Value Grown at Green Phoenix Farm

(Removed- not open Source)

## Produce Value Delivered

(Removed- not open Source)

## Carbon Impact Calculations

The generator runs on average 2 hours/day for 40 days/year = 80 hr/yr  
80 hr/yr divided by 8760 hrs/year = .009%. hr/year the generator is running

2.23 lbs of carbon per kWh for utility producing with primarily coal power (utah) minus .11lb of carbon for production of solar panel = 2.12 lbs C/ kWh).

A tree offsets 44lbs of C/yr on average.

$7,521 \text{ kWh} \times 2.12 \text{ lbs C / kWh} = 15,944.52 \text{ lbs of carbon} / 44 \text{ lbs C per tree} = 362 \text{ trees}$

As a comparison, the average Utah household of 2.8 people where electric consumption is 9324 kwh. Through efficient design, the farm requires only 80% of the electricity of a typical Utah household. In 2021, 99.9% of the farm power consumption was generated from the solar array.

## Solar Power Calculations

### REFERENCES:

<https://8billiontrees.com/carbon-offsets-credits/reduce-co2-emissions/how-many-trees-offset-carbon-emissions/>

<https://www.statista.com/statistics/183648/average-size-of-households-in-the-us/#:~:text=The%20average%20American%20household%20consisted%20of%202.53%20people%20in%202020.&text=As%20shown%20in%20the%20statistic,their%20usual%20place%20of%20residence>

<https://gosolargroup.com/solar-community/what-is-the-average-household-energy-usage-in-utah/#:~:text=The%20US%20Energy%20Information%20Administration's,for%20Utah%20was%20742%20kWh>

[https://www.nass.usda.gov/Publications/Highlights/2019/2017Census\\_Irrigation\\_and\\_WaterManagement.pdf](https://www.nass.usda.gov/Publications/Highlights/2019/2017Census_Irrigation_and_WaterManagement.pdf)

<https://www.electricchoice.com/blog/electricity-on-average-do-homes/>