# Vertical Innovations
# Roadmap to Redevelopment

*Prepared for:*
Vertical Innovations

*Prepared by:*
Council of Development Finance Agencies

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# Contents

# About the Roadmap to Redevelopment

The *Roadmap to Redevelopment* is a product of the CDFA Brownfields Technical Assistance Program, which is funded through a grant from the U.S. Environmental Protection Agency. The program provides technical assistance to brownfields communities on redevelopment finance. For communities that require detailed, hands-on assistance for their redevelopment efforts, CDFA Brownfields Project Response Teams comprised of CDFA staff and technical assistance partners are available to conduct site visits and provide recommendations. The goal of these visits is to offer communities specific, actionable advice that can transform brownfields into economically-productive sites in accordance with the goals and plans of the community. CDFA will coordinate 36 Brownfields Project Response Teams over the life of the program.

The *Roadmap to Redevelopment* was developed through a two-day process that included interviews with numerous stakeholders from the government, business, and non-profit sectors. The plan provides a framework for the financing of the cleanup and redevelopment of the former MFA silos situated on the Missouri State University Campus.

The *Roadmap to Redevelopment's* recommendations combine the input of development finance experts, CDFA staff, and the interests of stakeholder groups gathered during the Project Response Team site visit.

# Background & History

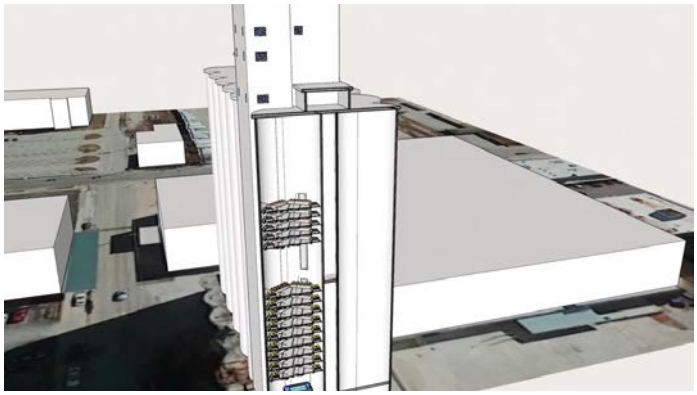
**Background & History:**

*MFA Grain Silos. Photo Courtesy of Vertical Innovations*

Vertical Innovations is an urban farming startup founded in 2014 in Springfield, Missouri. Vertical Innovations' primary purpose is to provide locally grown and pesticide-free food through vertical farming systems. Vertical farming is the practice of producing food in vertically stacked layers using controlled environments. Many vertical farming operations are located inside of repurposed warehouses or multi-story buildings using large growing racks to accommodate multiple levels of produce. As an innovative agricultural method, the vertical farming industry shows promise due to two major advantages: 1) more food can be grown per horizontal area due to stacking and 2) food can be grown during all seasons. The drawback of traditional vertical farming operations is the large amount of energy needed to maintain an optimal growing environment.

Vertical Innovations is looking to repurpose the former Missouri Farmer's Association (MFA) grain silos located in downtown Springfield for the purpose of supplying leafy greens, mushrooms, and other produce to consumers at market price. Grain silos were chosen as the ideal growing medium because they provide a controlled environment in which the temperature and humidity can be regulated efficiently, providing the opportunity to produce high quality food year-round while consuming far less energy than traditional vertical farming operations. Vertical Innovations hopes that this initial project can become a sustainable model for the adaptive reuse of abandoned silos across the country.

Vertical Innovations is currently leasing the MFA silos from Missouri State University (MSU), which acquired the silos as part of a greater land purchase from the City of Springfield. The silos have been vacant since 2000. The University has no plans to redevelop the silos and has considered demolition; however, many in the community feel that that silos represent an important icon of the city's agricultural past and wish to see them preserved. MSU currently has 37 silos on their property, of which Vertical Innovations has leased 21. The initial pilot phase calls for three silos to be engineered for vertical farming. If the pilot phase is profitable, then Vertical Innovations will expand to additional silos on the site. Once operating, the estimate for pilot phase production is over 3,000 pounds of lettuce per day.



*Rendering of one silo. Photo Courtesy of Vertical Innovations*

Vertical Innovations has been working with Borton, the contractor who originally constructed the silos, to begin remediation of the site, primarily removal of lead paint and asbestos. A phased redevelopment plan for the site includes completion of environmental cleanup and removal of water in the lower levels to prepare the facility for food processing. The cleanup, along with construction costs, equipment, and working capital needs is estimated to result in a $5.5M financing gap for the pilot phase of the project. Vertical Innovations believes that they are having difficulty in obtaining financing due to a lack of collateral for the loan. Although taking ownership of the land would provide collateral, MSU does not wish to pursue the sale of the property at this time.

# Recommendations

## Part I: Leveraging Collateral

One of the issues that Vertical Innovations has faced in obtaining financing is a collateral shortfall that limits its ability to secure the financing needed to initiate the project. Vertical Innovations will have to be creative in identifying resources. It is recommended that Vertical Innovations investigate the following options for increasing the chances of obtaining financing:

i. Explore partnership opportunity with MSU

As the land owner, MSU has an interest in seeing the project succeed. Vertical Innovations should explore whether a more involved partnership with the university could benefit the project's financing options. MSU may be able to provide collateral or a guarantee for the loan. At the very least, the lease terms could be modified to provide a longer term lease (e.g. 50 years or more) that could be treated as ownership (fee simple) value versus leasehold value in a loan transaction. In return, the vertical farming project opens up opportunities for future collaboration between the Vertical Innovations operation and MSU agricultural and business students.

ii. Count costs incurred to date as equity

While assisting with the remediation of the grain silos, Borton has spent over $500K in lead paint removal and asbestos material disposal. Vertical Innovations should investigate whether the money spent on the remediation of the property thus far can be counted as equity in the project.

*Prototype of Hydroponic beds rotate under grow light in basement of grain silo*

iii. Quantify value of the patent

Vertical Innovations has a patent on the proprietary technology needed to successfully farm in grain silos. Efforts should be made to quantify the value of the patent so that it could be used and leveraged in the financing of this project. Perhaps letters of intent from other communities and/or silo owners regarding this adaptive reuse would support the valuation.

iv. Acquire purchase orders

Vertical Innovations needs to focus on obtaining orders to sell the produce that is harvested from within the vertical farms. Although still in the developmental phase of the process, initial purchase orders from customers at the price point and volume stated in their business plan will help to ease concerns of potential investors and funders.

v. Monetize the real estate

The prominent presence of the silos in downtown Springfield is a prime location for billboard marketing, utility infrastructure, solar panels, or potentially a cell tower location. By creating cash flow at the site, Vertical Innovations can begin to generate growth capital and increase project attractiveness for investors.

## Part II: Conducting a Project Feasibility Analysis

Vertical Innovations does not wish to incur the cost of a third party feasibility study. Both investors and lenders will want to see an independent feasibility study that 1) documents that the farming technology will work and 2) the product will sell at price points sufficient to make the project economically viable. Investors and lenders will also want to see a detailed business plan outlining how the business will operate. The following resources provide predevelopment financing and should be explored for the potential to fund the analysis:

i. MSU Partnership

As mentioned previously, MSU has an interest in seeing the project succeed. MSU may consider a partnership in which its graduate business students are tasked with conducting the project feasibility analysis as part of their curriculum. The MSU Small Business Development Center may have the capacity to provide this service.

ii. Crowdfunding

Crowdfunding may be an alternative way for Vertical Innovations to raise money to fund a project feasibility analysis. Crowdfunding pools together small amounts of funding from a large number of people who want to support a specific cause, business, or product. Many crowdfunding platforms are reward based, in which an investor receives a reward in return for pledging, such as a branded t-shirt or other product; sometimes the reward is the product being funded and is received after the successful financing is realized. Vertical Innovations may be able to offer future produce to investors in exchange for their pledge. Hundreds of platforms for crowdfunding exist, and some have a local or regional focus. CDFA can provide a list of reputable platforms.

iii. Partners for the Common Good (PCG)[1]

PCG is a national intermediary that works with local lending partners in providing pre-development financing.

[1] Partners for the Common Good. (n.d.). Retrieved April, 2017, from http://www.pcgloanfund.org/

iv. Local Initiatives Support Corporation (LISC) – Kansas City

LISC's main mission is to be a civic leader for community development. In partnership with residents and stakeholders, LISC invests resources that grow community pride and revitalize neighborhoods into healthy, sustainable communities. Among LISC's target activities are "creating systemic change" and "transforming the environment", both of which align with Vertical Innovations vision for the project.[2] Loan applications are available online.

## Part III: Considering Alternative Legal Structure

Currently Vertical Innovations is operating as a for-profit entity and sole owner of the company. This structure can be effective if Vertical Innovations can obtain the needed investments to begin operation. However, to maximize access to federal programs and resources, the company should consider an alternative legal structure to open up financing options.

i. Private- Limited Purpose Non-profit

Although the intent of Vertical Innovations has been to expand their model nationwide and profit from the patenting of the specific vertical farming system, the pilot project could benefit from a non-profit legal structure. Nonprofit entities qualify for certain federal programs and resources, including Economic Development Agency (EDA) and some USDA programs, that for-profit entities are not eligible to receive. Additionally, non-profit corporations are exempt from tax on revenue related to their non-profit purpose. A non-profit structure would not require Vertical Innovations to forgo profits altogether. A non-profit entity could be formed to contract with Vertical Innovations to develop and manage the facility. The non-profit entity could hold the patents for the vertical farming system and license the technology to the profitable entity of Vertical Innovations.

ii. Joint Venture

Vertical Innovations may consider pooling resources with a like-minded company or mission-driven organization to access the capital needed for the pilot project. The joint venture could take on any variety of legal forms. Due to the project themes of sustainable food supply, food security, and innovative agriculture, visionary investors may be interested in having a long term stake in the company.

[2] About Us. Retrieved, 2017, from http://programs.lisc.org/kansas_city/about_us/index.php

## Part IV: Financing the Pilot Project

Vertical Innovations is pursuing a phased strategy: The first phase is to develop the pilot project as a demonstration the viability of the technology and market. The second phase is to pursue future projects in other communities based upon the credibility established by the pilot phase. We recommend Vertical Innovations aggressively focus on financing for the pilot project at this time. Once viability has been proven, there are a variety of additional financial resources available.

The following resources should be investigated for their potential to finance the project in combination with or in place of traditional financing. The complexity of the Vertical Innovations project would require that these financing tools be pursued in tandem, as there is great opportunity to leverage private investment through the tax credit and public sector programs.

i. Federal Financing Sources

**New Markets Tax Credit (NMTC) Program**
The NMTC Program provides tax credits to attract private investment in economically distressed areas to incentivize community development and economic growth. The silos are located in a NMTC eligible census tract. As a food supply chain solution, the project would score favorably in regards to community impact. Vertical Innovations should establish relationships with Community Development Entities who have received allocations in order to attract future investors. NMTC is a tool used for gap financing and is typically the last money into a project. Part of the process of pursuing New Markets Tax Credits includes reaching out to potential investors and lenders who might have an interest if their funds were leveraged by New Markets.

**U.S. Economic Development Administration – Public Works Program**
The EDA offers 50/50 matching grants up to $3M through its Public Works Program. The program helps distressed communities to revitalize, expand, and upgrade their physical infrastructure, attract new industry, diversify local economies, and generate or retain private sector jobs and investment.[3] While the grants are not offered for private enterprises, the allocations can be routed through non-profits or government agencies. Qualifying match sources can include USDA loans, New Markets Tax Credit, or in kind services.

**USDA – Business & Industry (B & I) Loan Guarantees**
This program bolsters the availability of private credit by guaranteeing loans for rural businesses.[4] Vertical Innovations' pilot project qualifies as a regional food program. The program requires at least 20 percent tangible equity at loan disbursement, and will consider collateral pledged by institutional organizations. Loan to value ratio cannot exceed 100 percent. The USDA B & I program could be used as a way of providing further support for the private investment required as parts of New Markets.

[3] Programs and Initiatives. (n.d.). Retrieved, 2017, from https://www.eda.gov/programs/eda-programs/
[4] Business & Industry Loan Guarantees. (n.d.). Retrieved, 2017, from https://www.rd.usda.gov/programs-services/business-industry-loan-guarantees

**Department of Homeland Security (DHS)**
The Department of Homeland Security distributes grant funds to enhance the ability of regional authorities to prepare for, prevent, and respond to terrorist attacks and other disasters. Localities use grants for planning, equipment, training and exercise needs.[5] The grain silos are constructed of eight inch thick concrete walls reinforced with steel bar, and provide an extremely well protected indoor food production facility. In the case of a natural disaster or emergency resulting in food scarcity, Vertical Innovations grain silo structures could serve as a reliable food source for the region. One DHS program in particular, the Small Business Innovation Research (SBIR) program, encourages small businesses to provide quality research to develop new processes, products, and technologies in support of the missions of the U.S. government. [6]

**Small Business Administration (SBA) 504 Loans**
The SBA 504 Loan is a real estate and equipment loan for small businesses, and is a good option for Vertical Innovations if they choose to maintain their current legal structure as a for-profit enterprise. This long-term, fixed-rate financing is available only to for-profit companies whose net worth is less than $15M and average net income less than $5M after taxes for the preceding two years. The SBA 504 program also requires a private lending partner (bank) and 10% equity from the business. Both business and personal resources will be taken into account when applying for a SBA 504 Loan. SBA 504 could also be used to leverage funds for the New Markets program.

ii. State Financing Sources

**Missouri Department of Economic Development (DED) – Brownfield State Tax Credits**
As a means to redevelop contaminated commercial and industrial sites, this program provides financial benefits for remediation purposes. The project must result in the creation of at least 10 new jobs or the retention of 25 jobs. The DED may issue tax credits for up to 100% of the cost to remediate the project property.[7]

**Missouri Department of Economic Development (DED) – Missouri Works**
The Missouri Works program is an incentive tool for expansion and retention. The program helps businesses access capital through withholdings or tax credits to embark on facility expansions and create jobs. The program can also help businesses purchase equipment to maintain their facilities in the state. Missouri Works is available to both for-profit and non-profit businesses.[8]

[5] Find and Apply for Grants. (n.d.). Retrieved, 2017, from https://www.dhs.gov/how-do-i/find-and-apply-grants
[6] Small Business Innovation Research Program (n.d.). Retrieved from https://www.dhs.gov/science-and-technology/sbir
[7] Brownfield Remediation Program. (n.d.). Retrieved, 2017, from https://ded.mo.gov/programs/community/brownfield-redevelopment-program
[8] Missouri Works. (n.d.). Retrieved, 2017, from https://ded.mo.gov/programs/business/missouri-works

**Missouri Department of Agriculture (MDA)**
The MDA offers grants, loan guarantees and tax credits, all of which have varying eligibility requirements. The Urban & Non-Traditional Agriculture Matching Grant Program awards grants of up to $7,500 for reimbursement of expenses associated with urban and non-traditional agriculture, which can cover costs of equipment and marketing. The Missouri Value-Added "Farm to Table" Grant Program supports small businesses in processing locally grown agricultural products for distribution within the state. Grant amounts are limited to $200K and require value-added services; consideration would be given to activities like washing and bagging leafy greens for consumers.

iii. Local Financing Sources

**Tax Increment Financing (TIF)**
The City of Springfield has existing TIF districts downtown. Though the silos are not currently located in an established TIF district, the City can redraw the boundaries of an existing TIF district to include the property. The generated district increment could be used to cover eligible redevelopment project and infrastructure costs.

**Brownfield Revolving Loan Fund (RLF)**
The City of Springfield has an existing Brownfield RLF and is willing to make a loan to Vertical Innovations to cover the remaining cleanup needed at the site, currently estimated at $1M.

**Community Development Block Grant (CDBG)**
As an entitlement community, the City of Springfield receives an allocation of CDBG funds to use toward preserving affordable housing, providing services for residents, and creating jobs. Typically each activity under the CDBG program must be qualified either by benefiting low- and moderate-income persons or preventing or eliminating slum or blight. The Vertical Innovations project could receive CDBG funds under the elimination of blight criteria.

**Housing and Urban Development (HUD) Section 108 Loan**
HUD Section 108 offers state and local governments the ability to transform a small portion of their CDBG funds into federally guaranteed loans large enough to pursue physical and economic revitalization projects. Loans typically range from $500K to $140M, depending on the scale of the project or program. According to HUD data, Springfield has just under $1M in Section 108 capacity (as of December 2016). Under Section 108, project costs can be spread over time with flexible repayment terms, and borrowers can take advantage of lower interest rates than could be obtained from private financing sources.

# Additional Resources

CDFA Brownfields Financing Toolkit |
http://www.cdfa.net/cdfa/cdfaweb.nsf/ord/201502_BF_Toolkit/$file/CDFA%20Brownfields%20Financing%20Toolkit%2002.02.15.pdf

CDFA Online Resource Database |
http://www.cdfa.net/cdfa/cdfaweb.nsf/ordsearch.html

Department of Homeland Security Grants|
https://www.dhs.gov/how-do-i/find-and-apply-grants

SBA 504 Loan Program |
https://www.sba.gov/offices/headquarters/ofa/resources/4049

USDA Business & Industry Loan Guarantees |
https://www.rd.usda.gov/programs-services/business-industry-loan-guarantees

Missouri Department of Agriculture Financial Assistance |
http://agriculture.mo.gov/abd/financial/

Missouri Department of Economic Development Missouri Works |
https://ded.mo.gov/programs/business/missouri-works

Missouri Department of Economic Development Brownfield Remediation Program |
https://ded.mo.gov/programs/community/brownfield-redevelopment-program

Community Development Block Grant Programs |
https://www.hudexchange.info/programs/cdbg/

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The *Roadmap to Redevelopment Plan* was authored by the Council of Development Finance Agencies (CDFA), a national association dedicated to the advancement of development finance concerns and interests. Learn more about CDFA at www.cdfa.net.

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