



Building Healthy Soils Through Regenerative Practices

February 1st, 2024

Challenge Grant Implementing the Commonwealth's

Healthy Soils Action Plan

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Hampden-Hampshire Conservation District
195 Russell St, Suite B6
Hadley, MA, 01035
(413) 362-4720

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PROJECT DESCRIPTION

Background

Launched in 2023, Hampden-Hampshire Conservation District's (HHCD) Healthy Soils Program provides farmers with resources to encourage and facilitate the adoption of regenerative agriculture practices, with the goal of building soil health on Massachusetts farmland. Healthy soil is an invaluable resource for farmers, supporting nutritious and bountiful crops, increasing water holding capacity, sequestering carbon, and providing resilience from extreme weather caused by climate change. The main components of the Healthy Soils Program (HSP) are equipment rentals, no-till mentorships for farmers, soil analysis, and public outreach.

The Healthy Soils Program was made possible by a grant from the Massachusetts Executive Office of Energy and Environmental Affairs (EEA). With this grant, HHCD purchased an Esch 5605 No-Till seed drill, which allows farmers to sow cover crops and pasture land without disturbing the soil ecology, and a BCS walk-behind tractor, suited for "market-garden" scale farms, high-tunnel production, and urban farmers, with three attachments designed to reduce tillage and mitigate compaction. The remainder of the EEA grant was used to purchase soil sampling equipment, and subsidize the cost of soil analysis.

Goals and Objectives

HHCD seeks funding through the Challenge Grant to grow the Healthy Soils Program, and to help sustain the success from the first year into the future. This funding will allow the District to add equipment to the rental program, provide free soil analysis services to farmers and residents in our region, conduct outreach events, and support increased staff capacity.

The ultimate goal of HHCD's Healthy Soils Program is to encourage and facilitate the adoption of regenerative practices that achieve the four principles of soil health, as defined by the USDA: to minimize disturbance, maximize living roots, maximize soil cover, and maximize biodiversity. We focus on practices that reduce tillage to achieve these four principles, while promoting a full suite of conservation practices, including cover cropping, nutrient management, crop diversity, and crop rotation. Among other benefits, these activities increase Soil Organic Carbon, which, as stated in the Healthy Soils Action Plan "improves both the availability and holding capacity of both nutrients and water, creating a beneficial feedback system where increased soil health builds overall ecosystem productivity resulting in even greater soil capabilities"(p.5).

Conventional tillage depletes soil organic matter, releases carbon into the atmosphere, decreases water infiltration and water holding capacity, reduces biodiversity, harms soil biology, and causes erosion and runoff that conveys excess nutrients and sediment into nearby water bodies. Reducing tillage is essential to maintaining a healthy soil ecosystem that can provide nutritious and bountiful crops to support our growing communities, while minimizing the environmental impacts of agriculture. Despite increasing recognition of the negative impacts caused by conventional tillage, only 16% of Hampden County and

17% of Hampshire County farmers responded to the USDA's 2017 Agricultural Census as practicing "reduced" or "no-till" methods.

While many farmers may be interested in trying no and low-till methods, the equipment can be cost-prohibitive, and there are economic risks with implementing new practices that may result in reduced crop yield. As stated in the Healthy Soils Action Plan, "because many farms operate on thin margins, the potential burden of implementing soil health practices... can be a significant financial hurdle" (p.68). The Healthy Soils Program seeks to reduce barriers to practice adoption by making equipment available at affordable costs and providing access to mentors with extensive no-till experience. We also provide soil analysis so that farmers can assess the current state of their soil, add amendments and implement practices to improve the fertility of their land, and track the impact of management practices over time.

Three factors are taken into consideration to determine the equipment we add to HHCD's rental program: 1) desirability, as expressed directly from farmers and service providers in the region, 2) lendability, taking into consideration transportation, operation, maintenance, and storage, and 3) efficacy in reducing tillage and promoting soil health practices. Taking these factors into account, HHCD plans to purchase a Checchi & Magli Unitrium vegetable transplanter, with a water tank and no-till attachment, and a BCS spreader that attaches to our BCS walk-behind tractor, and can be used for compost and other soil amendments. The Unitrium transplanter allows producers to place plant plugs directly into the ground with minimal soil disturbance. This piece of equipment complements the Esch No-Till Seed Drill the District owns. Used in succession, farmers can sow a healthy cover crop with the Esch Drill, terminate the cover crop, and then use the Unitrium transplanter to place their cash crop into the ground, without having to till the earth and disturb the soil ecology. We will also purchase a trailer to transport the Unitrium, a quick hitch set for loading and unloading the transplanter.

HHCD offers soil analysis services, since collecting and involves a considerable investment of time and money, which is why we started offering and we currently offer this service at a subsidized cost.

Funding through this challenge grant will allow HHCD to offer soil analysis through Cornell University and UMass Amherst, free of charge. HHCD staff are available to conduct In-Field Soil Health Assessments (IFSHA), collect and process soil samples, deliver or ship them to the labs, help interpret the results, and make soil management recommendations. The Comprehensive Assessment of Soil Health (CASH) through Cornell provides a detailed assessment of many physical, biological, and chemical components. The CASH analysis is especially useful for assessing organic matter content, which includes measurements of Soil Organic Carbon, Total Carbon, and Active Carbon. As stated in the Healthy Soils Action Plan, "soil organic carbon (SOC) is one of the few universally agreed-upon indicators of soil health" (p.20).

A crucial component of HHCD's Healthy Soils Program is hosting educational workshops and events. We have planned four farm-specific workshops for 2024. Funding through the Challenge Grant will allow us to compensate hosts and presenters for their valuable time, which will strengthen these relationships & ensure collaborations continue into the future. The workshops we have planned are:

1. Introduction to the Healthy Soils Program - A virtual webinar that provides an overview of the Healthy Soils Action Plan, HHCD's Healthy Soils Program, benefits of reduced and no-till systems, and funding opportunities to support conservation agriculture practices.
2. Planting into a Living Mulch & Equipment Field Day - A recreation of a successful event from 2023, in which Lincoln Fishman (Momentum Ag) showcases his ongoing research into planting vegetable crops into a living mulch of Dutch white clover. HHCD will have our equipment on display, with a live demonstration of the Esch 5605 No-till seed drill. Partners include Berkshire Conservation District, Lincoln Fishman (Momentum Ag), and UMass Extension.
3. Climate Adaptations & Agroforestry - This workshop will be hosted at the Food Bank of Western Massachusetts (Hadley, MA) as part of their community education series. HHCD will provide a presentation on climate adaptation techniques for agriculture, with a focus on various agroforestry practices. As part of this presentation, we are planning to offer a tour of Big River Chestnuts to see agroforestry practices in person.
4. Composting - This workshop will focus on compost systems for the home and garden, how to establish and manage a compost system.

Lastly, money from the Challenge Grant will be used to increase HHCD staff capacity, providing 10 hours per week for the Conservation Outreach Coordinator, who is currently limited to 30 hours per week. Additional funds will compensate no-till mentors, an essential component of the Western Massachusetts No-Till Equipment Rental Program, of which HHCD is a partner with Berkshire (BCD) and Franklin Conservation District (FCD). Access to mentors by farmers new to the approach can be the determining factor in successful transition by a farmer to regenerative practices.

The public outreach component of this grant is a 3-part workshop series on the topics of Residential Composting, Lawn Alternatives / Organic Lawn Care, and Climate Resiliency in the Landscape for Homeowners. Additionally, technical assistance will be available to residential landowners in the form of free soil testing, results interpretation and recommendations, and additional resources to implement recommendations. HHCD is partnering with FCD to coordinate delivery of these workshops in our neighboring counties. Each workshop will be offered twice in our respective Districts and supplemental resource materials will be shared on each District's website. Recordings of the webinar versions of each program will be made available for free public viewing through the support of the Massachusetts Association of Conservation Districts (MACD). Through its own Challenge Grant proposal, MACD is providing supplemental support to the partner Districts in the form of additional program coordination, who have only 10 hours of administrative support each week. This is much needed capacity building for these projects. In order to extend the reach of District-provided public programming, MACD will coordinate delivery of the programs in areas of the state where Conservation Districts are inactive, mainly in eastern Massachusetts. This will close the gap in delivery of Healthy Soils educational programming that would have been provided by an active District. We will further partner with MACD to enter baseline soil test results into a database to which subsequent test results from on the same sites will be entered, thereby allowing analysis of sites using BMPs over time.

Areas of Alignment with HSAP

“Accelerated protection of farmland, adoption of healthy soils practices, and support for Massachusetts’ farmers should all be ongoing priorities... Indeed, a commitment to farmers and farming that supports resilient landscapes and healthy soils in rural, suburban, and urban communities, may help to strengthen the role of MA agriculture in the regional food economy, and meet some of the goals laid out in The New England Food Vision” ~ HSAP, P. 76

This proposal aligns with the goals of the Healthy Soils Action Plan in the following areas:

- Promote Soil Health
- Sustainable Land Management (in both agricultural and residential settings)
- Community Engagement

HHCD’s Healthy Soils Program achieves several of the principles and recommendations outlined in the Healthy Soils Action Plan, through programs, services, technical assistance, and outreach events. In particular, our program seeks to “reduce economic barriers that make it difficult for farmers to implement healthy soil practices” and “eliminate technical and knowledge barriers to adoption of practices which increase soil health”. Specific areas of alignment, from the Agriculture Recommendations section of the HSAP (p.76-78), are:

- A4 - Increase farmer enrollment and participation in existing programs that provide technical assistance, educational opportunities, and material support.
- A5 - Increase economic support in order to incentivize implementation of healthy soils practices.
- A6- Eliminate technical and knowledge barriers to adoption of practices which increase soil health.
 - B.ii. Increase support for educational programs, technical service, and targeted outreach efforts on the benefits, costs, and details of implementing healthy soils practices.
 - B.iii. Ensure that sufficient resources are provided to institutions and organizations that provide technical, educational, and other support to farmers in healthy soil practices including... Conservation Districts...
 - C.ii. Farmer-to-Farmer: Encourage farmer-to-farmer events...that promote use of best practices

HHCD’s Healthy Soils Program promotes several conservation agriculture practices incentivized by NRCS, including Cover Cropping (340), Residue and Tillage Management, No-Till (329), and Residue and Tillage management, Reduced Till (345). HHCD’s Conservation Outreach Coordinator works directly with NRCS, and is able to connect farmers with the incentives provided by NRCS.

Methodology

“Soils are dynamic ecosystems that exist in relation to their plant communities, so soil organic matter has some limitations as a sole metric for evaluating soil health. Therefore, most soil health assessment involves some level of physical indicators and measure of soil characteristics and plant community” (p.70).

The tools and protocols HHCD employs for measuring soil health align with Tier 2, Cost Effective Soil Carbon Quantification, as described on p. 71 of the HSAP: “Field-level decision support tools plus lab verification of soil organic carbon for research purposes and for basic soil health and soil carbon enhancement / incentive programs. Tier 2 involves conducting Tier 1 methods with the addition of... lab-verified soil carbon testing to an agreed-upon depth... taken from multiple soil samples using a stratified sampling design. *This level can be achieved using a stratification tool and the Cornell Comprehensive Assessment of Soil Health (CASH)*” (emphasis added).

HHCD’s Conservation Outreach Coordinator (COC) has received training in In-Field Soil Health Assessment and CASH sampling procedures through American Farmland Trust (AFT) and the Natural Resources Conservation Services (NRCS). HHCD provides farmers and other community members the option of sending samples to Cornell University for CASH analysis, and/or UMass Amherst. Direct technical assistance is available to farmers, provided by the COC, in conjunction with HHCD’s farmer mentors.

Soil Organic Carbon measurements will be compiled in a dataset, and used as a baseline for future measurements to help assess the influence of conservation agriculture practices.

Outcomes and Deliverables

1. 20-25 Equipment Rentals
2. 80-100 Acres of improved land management
3. 4 Agricultural Soil Health Specific workshops
4. 6 Public Outreach Workshops in District Area
5. 3 Public Outreach Workshops sponsored in areas without active Districts
6. Sets of authoritative books topically aligned with outreach programming
7. Development of additional web-based resources stemming from outreach workshops
8. 20-40 Soil Analysis participants
9. 70-100 Soil Samples
10. 100 participants (renters, workshop participants, presenters, etc...)
11. Dataset containing Soil Organic Carbon measurements
12. Bi-annual Report

ORGANIZATIONAL CAPACITY

Personnel and Roles

Staff

Matthew Karas, MPA - *Outreach Coordinator, Hampden-Hampshire Conservation District, board member of Ashfield Conservation Commission.*

Matthew was raised on a farm in South Deerfield, Massachusetts, where his family grew a variety of cucurbits, decorative flowers, hay and straw. Matthew studied conservation biology, botany, and sustainable agriculture as an undergraduate. During his Masters of Public Administration program, he studied water law and policy, the human water cycle, food insecurity among SNAP-Ed participants, and environmental justice. Matthew started working from Hampden-Hampshire Conservation District in September of 2022, and is primarily responsible for developing and managing the Healthy Soils Program, conducting outreach and administration, providing technical assistance to farmers, and assisting with conservation plans. Matthew started receiving Conservation Planner training through NRCS in 2023, and is expecting to become a certified Conservation Planner Level III in 2024. He is also a member of the Diversified Agriculture and Agroforestry cohort of the Climate Adaptation and Mitigation Fellowship.

Meghan Siudzinski - *Administrative Coordinator*

Meghan Siudzinski has nearly 25 years of experience working in educational and nonprofit contexts in administrative, communications, and outreach capacities. Developing and coordinating collaborative partnerships is her favorite means to accomplish impactful outcomes. Meghan joined the Hampden-Hampshire Conservation District in November of 2021 as Administrative Coordinator to manage the District's grants and deliver public outreach programming for ages pre-K through adults. Meghan and Matthew have worked closely to design the project described in this proposal. Through the development and incremental growth of a western Massachusetts regional program based on key partnerships, the Healthy Soils Program provides much needed programs and services designed to improve soil health in the region.

Healthy Soils Action Plan Coordinator - MACD's Challenge Grant-proposed staff position would provide the additional administrative coordination support that HHCD needs to deliver this ambitious public outreach plan, both within our District and beyond to areas without the benefit of an active Conservation District. Uniquely exciting is MACD's development of a database to receive and organize the data resulting from soil tests prior to implementation of BMPs in multiple land cover settings. Aggregating statewide soil test data prior to interventions is an important step for accurately measuring improvements later.

Board of Supervisors

Leon K Ripley - *Chair of HHCD Board of Supervisors, Owner of Maple Corner Farm*

Leon Ripley owns and manages Maple Corner Farm with his wife Joyce and three sons. Maple Corner Farm was founded in 1812 by John Ripley, and is currently managed by the eighth generation. The farm produces maple syrup, blueberries, hay, grass fed beef and provides cross country skiing and snowshoeing in the winter months. Leon has had a conservation plan for the farm since the 1960's. In 1986, he won the

National Endowment for Soil and Water Conservation award. Leon also has had a Forest Management Plan for the farm's 640 acres since 1972. He won the Massachusetts State Wide Tree Farmer of the Year award in 2000. The farm hosted the Massachusetts Maple Tree Tapping Celebration on March 3, 2023 which brought the MA MDAR Committee, 3 television stations, radio and newspaper coverage. Leon started volunteering with the Hampden Conservation District in 1982 and is currently serving as the Chair. He is also Chair of the Granville Conservation Commission and Chair of the Hampden County Farm Bureau. Leon received the Farm Bureau's John Ognowski Award in 2007. Along with Connie Adams, and the rest of the Board of Supervisors, Leon guides program development and decision making.

Connie Adams, *co-owner of Yellow Stonehouse Farm, Vice President MACD, Vice Chair HHCD*

Connie is co-owner of the USDA certified organic Yellow Stonehouse Farm in Westfield, MA, along with her husband John Keilch. Both had successful business careers before starting their farming operation in 2011. This new venture provides Connie plenty of opportunity to pursue interests in environmental conservation, herbalism, native plants, and sustainable agriculture. Connie enjoys feeding her local community through their Organic Vegetable CSA, and is thrilled to be included in the SNAP-HIP program. A Master Gardener and enthusiastic cook, Connie shares her knowledge of cooking, herbalism, and horticulture through farm recipes with CSA members, a blog, a popular Facebook page, and frequent appearances on the Local Channel 22 program Mass Appeal. Connie has been on the HHCD board since 2018. She is also an environmental advocate and one of the founders of WRAFT – Westfield Residents Advocating for Themselves – a group founded at the beginning of the investigation into PFAS pollution in Westfield.

Contractors

Frank Karas - Equipment delivery driver, maintenance and storage.

Frank Karas is a retired farmer who previously managed a 140 acre produce farm in the Connecticut River valley. Frank still resides on the farm property, where HHCD's equipment is stored. The farm is conveniently located in South Deerfield.

Dave Tepfer - Co-owner and operator of Simple Gifts Farm, Amherst, Massachusetts. Dave serves as “no-till mentor” for the Healthy Soils Program, offering his expertise and guidance to both farmers and service providers. Dave earned a degree in Animal Science from South Dakota University in 1985, then studied agricultural economics at Colorado State University, seeking to comprehend the problems with conventional farming and to explore alternatives. In 2006, Dave joined Jeremy Plotkin at Simple Gifts farm, in Amherst, Massachusetts. Since farming together, they have actively experimented with a variety of methods to improve the health of the soil and the viability of their farm operation. Over the years, Dave has become increasingly committed to no-till agriculture practices and has learned a great deal from his experimentation, which he joyfully shares with the farming community.

Lincoln Fishman - Founder and Director of Momentum Ag. Lincoln Fishman is the Director and Trials Coordinator at Momentum Ag. Momentum helps farmers “grow knowledge,” by funding on-farm trials of innovative climate-smart practices. Lincoln has 15 years of farming experience, successfully coordinated trials at seventeen farms in 2023, and has helped knit those farmers into a tight community. Lincoln will also serve as a “no-till mentor” and equipment advisor for the no-till equipment program.

Details of Previous Achievements

The mission of HHCD is to provide educational outreach, technical assistance, and financial support to communities and landowners to protect the soil, air, forests, and water resources on which we all depend. The District brings together community members, agencies, and organizations, to work collaboratively on preserving the ecological integrity and economic vitality of the Hampden-Hampshire region for many generations to come. Conservation Districts have a long legacy of working with farmers and other community members to address conservation needs. There are decades of farming experience among our board members.

HHCD was one of the first Districts in Massachusetts to offer a no-till seeder for rent to farmers. Our initial program ended in 2012 due to inadequate staffing to coordinate the rental program. This program was revived with a grant from the EEA in 2023, which was used to purchase an Esch no-till seed drill, BCS tractor with attachments, a trailer for transporting equipment, soil analysis equipment and materials, and to compensate the District's delivery driver and no-till mentors. There were some delays in receiving the funds and insuring the equipment, but the first year was successful and generated a lot of new connections and an increased presence in the region. In developing our program, we were inspired by Cheshire County Conservation District (New Hampshire), who have grown their program incrementally over 10 years.

PROJECT TIMELINE

March 2024

- Esch 5605 and BCS 779E Tractor available for rent
- Purchase and Insure Checchi & Magli Unitrium Transplanter, BCS Spreader, trailer, and quick hitch set.
- Create rental procedures, protocols, and operations manuals, for new equipment.
- Equipment Purchase Total: \$33,725.00
- Soil Analysis Total: \$6,000.00

April 2024

- Event: Introduction to Healthy Soils Action Plan and Healthy Soils Program (virtual)
- Begin soil analyses (if soil conditions are suitable)
- Checchi & Magli Unitrium Transplanter and BCS Spreader available for rent
- Public Outreach sessions begin/ aligned web resources posted

June 2024

- Conduct soil analyses
- Public Outreach sessions begin/ aligned web resources posted

July 2024

- Event: Planting into a Living Mulch & Equipment Field Day (on-farm)
- Public Outreach sessions begin/ aligned web resources posted

August 2024

- Event: Climate Adaptations & Agroforestry Workshop (Food Bank of Western Mass)
- Public Outreach sessions begin/ aligned web resources posted

Fall 2024

- Progress Report on Healthy Soils program
- Event: Composting for home, garden, and farm.
- Resume soil analyses
- Public Outreach sessions begin/ aligned web resources posted

Spring 2025

- Resume soil analyses
- Continue Public Outreach sessions

June 2025

- Final Report

*****Please see aligned budget and timeline provided separately*****

PROJECT EVALUATION & MONITORING

Performance metrics

HHCD will evaluate program performance based on the following metrics.

Quantitative

1. # of Equipment Rentals
2. # of acres under Improved Management
3. # of Soil Analysis conducted
4. # of Farmers reached
5. # of Participants in all Activities (workshops, rentals, soil analysis)
6. Collect and compile data on Soil Organic Content

Qualitative

1. Survey for participants to assess experience renting equipment, likelihood of subsequent rentals, likelihood of purchase, likelihood of practice adoption
2. Survey for participants to assess workshop experience
3. Survey for participants to assess Soil Analysis usefulness

Reporting

HHCD will compile the quantitative and qualitative metrics throughout the program, and report to EEA as frequently as is required. In addition, we will regularly post updates on the Healthy Soils Program through social media, the quarterly newsletter, and the HHCD website.

SUSTAINABILITY PLAN

Post grant project sustainability assessment

HHCD consulted with other Conservation Districts who operate similar programs, before launching our Healthy Soils Program in 2023. In particular, the Cheshire County Conservation District, located in New Hampshire, was immensely helpful in establishing the foundation of the program and creating a plan for sustained growth over the years. As more farmers are reached through on-farm demonstration programs, we envision increased demand for the Healthy Soils Program continuing well into the future.

HHCD is continually seeking grant opportunities to sustain the program and services offered to the community, and support staff costs. We seek ways to diversify our funding streams so as not to be overly reliant on grants. We charge security deposits and rental fees to help cover some of the costs of maintenance and replacement. We seek to make the equipment affordable and accessible to all farmers in the region. With that said, HHCD is dependent on grants to sustain our programs and services, and our staff budget.

Partners involved and role

HHCD is part of a growing regional coalition of organizations, service providers, and farmers, who are actively seeking solutions to the climate crisis and its impact on our shared natural resources. We work with adjacent Conservation Districts to host workshops and continue developing our regional equipment share program. Our equipment is available to farmers in adjacent districts, as is our soil analysis service.

Partners who are integrally involved in this proposal are:

- Berkshire Conservation District (BCD) and Franklin Conservation District (FCD), whom we will partner with on outreach events and collaboratively work towards a regional Healthy Soils Program, that includes equipment rentals, soil analysis, and outreach.
- Regenerative Design Group (RDG), who is partnering with us on developing and delivering outreach programs within and outside of our district area.
- Lincoln Fishman, Momentum Ag, who is serving as a no-till mentor, and coordinating with HHCD and FCD to research and develop a strip-tiller that will be added to the HHCD equipment rental program.
- Dave Tepfer, who has served as a no-till mentor and consultant since HHCD launched the Healthy Soils Program.

Additional partners who we plan to collaborate on outreach events include:

- Community Involved in Sustaining Agriculture (CISA)
- UMass Extension
- Food Bank of Western Mass

Community Engagement

Conservation Districts serve the community to give voice to natural resource concerns and pursue projects and initiatives that restore and protect resources. As such, community engagement is a fundamental component of our daily work. We connect with farmers and residents directly in the community, and

through social media and the HHCD website. HHCD is launching a quarterly newsletter in 2024 that will include original content, and highlight news, programs, and services from our many partners in the region. As part of our Community Engagement plan, HHCD staff and Board members frequently attend workshops and events hosted by other organizations, with the purpose of networking and building meaningful relationships with other organizations, and assessing the concerns and needs of our constituents.

Identification of risk considerations

Risk: Lack of participation and interest. It can take time to develop interest and participation in a new program. Though an extensive amount of research went into choosing the equipment for our rental program, rental activity may be slow in the first few years as it can take time for word of mouth to spread among the farming community.

Mitigation Strategy: If after several years with low interest in renting a particular piece of equipment, we have the option of selling that equipment to a farmer. Money from that sale will go directly to supporting maintenance and repair costs for other equipment, and/or toward the purchase of a more suitable piece of equipment.

Risk: Equipment doesn't perform as well as expected - We have conducted extensive research selecting this particular no-till vegetable transplanter, but we have learned that there are no perfect pieces of equipment. They all have unique limitations, generally being better suited to some crops over others.

Mitigation Strategy: We expect that the transplanter may require some modification to improve its performance under a range of applications. We have contracted with farmers who have mechanical knowledge and skills, who are available to improve design limitations on the equipment. This is the cutting edge of no-till organic production - equipment is a limitation that requires research and development, and any work in this area contributes to the collective knowledge.

Risk: Equipment is damaged - We charge a security deposit of \$150 for rental of all equipment. There is a likelihood that equipment will be damaged due to negligent use, and the cost of repair or replacement exceeds \$150. In that case, we would seek money from the renter to cover the cost, if they are deemed responsible. However, there is a chance that the renter will not oblige that request, and the District is left with the bill.

Mitigation Strategy: If we are unable to produce the funds to cover the cost of a damaged piece of equipment, we will keep it stored until we have the money, or salvage what parts we can.

Risk: Weather - "Extreme" weather is becoming a frequent challenge with farming and farm-related events. There is a likelihood that at least one of our on-farm events will need to be postponed, due to inclement weather. Additionally, weather can impact the scheduling and performance of our equipment. While these destructive weather patterns can be a nuisance and an obstacle, they are also an integral part of learning how to farm during a time of climate crises. Learning how to navigate these weather-related challenges is an educational opportunity, in itself.

Mitigation Strategy: All of our on-farm field events are scheduled with an inclement weather date, in case we need to postpone. The safety and comfort of our participants is a top priority, and we build in a degree of flexibility to all of our programming.



Bardwell Farm

49 Main Street

Hatfield MA 01038

January 29th, 2024

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, 9th Floor
Boston, MA 02114

Re: Letter of Support “*Building Healthy Soils Through Regenerative Practices*”, *Hampden-Hampshire Conservation District*

To whom it may concern:

I am a ninth generation farmer who owns and operates Bardwell Farm, a diversified operation that produces over 100 varieties of vegetables year-round, on more than 30 acres along the Connecticut River. I am writing to express my support for the Hampden-Hampshire Conservation District’s Challenge Grant application, to assist farmers in the adoption of regenerative agriculture practices, with the goal of building soil health and climate resilience.

As a ninth-generation farmer, I have experienced firsthand the impacts of climate change on agriculture in our region. Extreme weather events are making it difficult for us farmers to maintain our livelihoods, which our communities depend on. We must change the way we farm to ensure that farmers can sustain their operations into the future. Since taking over the family farm, I have worked tirelessly to implement regenerative practices that will build soil health, minimize the environmental impact of farming, and make our operation truly sustainable, so that I may continue to produce nutritious food for my community for many years to come. Some of these practices include crop rotation, reduced tillage, cover crops, and crop diversity.

HHCD’s Healthy Soils Program educates farmers on regenerative practices that can improve the viability of their farms, and provides access to valuable resources, such as no-till equipment and soil analysis. I fully endorse HHCD’s grant proposal and am confident in the District’s ability to reach their stated goals and objectives.

Please contact me if you have any questions.

Sincerely,

Harrison Bardwell,
Bardwell Farm



Berkshire Conservation District

78 Center Street Suite 102 Pittsfield, MA 01201
Phone: 413-443-1776 x102
berkshireconservationdistrict@gmail.com
www.berkshireconservation.org

January 29th, 2024

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, 9th Floor
Boston, MA 02114

Re: Letter of Support “Building Healthy Soils Through Regenerative Practices”, Hampden-Hampshire Conservation District

To Whom It May Concern,

This letter expresses the Berkshire Conservation District's (BCD) support of and participation in the Hampden-Hampshire Conservation District's (HHCD) application to the Challenge Grant Implementing the Commonwealth's Healthy Soils Action Plan, to continue developing their Healthy Soils Program. Through the generous fiscal support of your organization, both districts propose to cooperatively enhance their ability to provide farmers with affordable access to no-till equipment, technical assistance, and educational resources. The collaborative nature of this proposed program builds upon our mutual agreement to share resources and equipment, therefore, increasing our regional impact.

The BCD established a no-till equipment rental program in 2019 and it has become a valuable resource for local farmers in promoting sustainable agriculture practices, reducing soil erosion, and protecting water quality. HHCD's proposed project will have cross-district benefits for both the environment and the agricultural community by supporting the long-term sustainability and economic viability of local farms. BCD's participation in the development and growth of HHCD's no-till equipment rental program will support both districts' mutual goals to reduce soil erosion, improve soil health, and prevent nutrient pollution and sediment runoff into nearby waterways.

This proposed program aligns with the goals and objectives of the Challenge Grant by promoting sustainable agriculture practices, building soil health, sequestering carbon, reducing nutrient pollution, improving stream and river health, and enhancing wildlife habitat in the region. Thank you for your consideration.

Sincerely,

Adam Galambos
Chairperson
Berkshire Conservation District
berkshireconservationdistrict@gmail.com



Franklin Conservation District

55 Federal Street
Greenfield, MA 01301

January 29th, 2024

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, 9th Floor
Boston, MA 02114

Re: Letter of Support “*Building Healthy Soils Through Regenerative Practices*,” Hampden-Hampshire Conservation District

To Whom It May Concern:

The Franklin Conservation District (FCD) supports Hampden-Hampshire Conservation District’s (HHCD) application for the Challenge Grant Implementing the Commonwealth’s Healthy Soils Action Plan, to assist farmers in the adoption of regenerative agriculture practices, with the goal of building soil health and climate resilience on farmland in western Massachusetts.

There is active communication and collaboration between FCD and HHCD, as both Districts are working together to continually develop a regional Healthy Soils Program that includes equipment rental, soil analysis, technical assistance, and outreach. HHCD’s Healthy Soils Program extends into Franklin County, and is a valuable resource for farmers in our region. FCD is collaborating with HHCD, Lincoln Fishman (Momentum Ag), and Gideon Porth (Atlas Farms), to research and develop a strip-tiller that is suited for organic vegetable production, which will be added to HHCD’s equipment rental program. Through our separate Challenge Grant proposals, FCD and HHCD are collaborating to provide educational programming and technical assistance for residential landowners and landscape industry professionals to give people information, tools, and practical support across land management scenarios.

We strongly endorse the *Building Healthy Soils Through Regenerative Practices* project that HHCD is seeking funding for, and we are confident in HHCD’s ability to achieve their stated goals. This project reflects the founding mission of Conservation Districts – to protect the soil and water resources on which we all depend. The referenced project will not only support our shared goals of protecting natural resources and supporting farmers in Massachusetts, but a successful project will also increase the overall presence and impact of Conservation Districts in the state. A successful project of this nature will be mutually beneficial for all stakeholders involved.

Sincerely,

Caroline Ness, FCD Chair

January 29th, 2024

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, 9th Floor
Boston, MA 02114

**Re: Letter of Support “*Building Healthy Soils Through Regenerative Practices*”, Hampden-Hampshire
Conservation District**

To whom it may concern:

It is my understanding that Hampden-Hampshire Conservation District (HHCD) is applying for a Challenge Grant Implementing the Commonwealth’s Healthy Soils Action Plan, to facilitate the adoption of regenerative agriculture practices, with the goal of building soil health and climate resilience. This letter is written to express my support for HHCD’s proposal, and my intent to participate in their project.

Our organization, Momentum Ag, is conducting no-till trials on farms across the region. I anticipate that many of these farmers will rent no-till equipment from HHCD over the duration of the project period. Having access to no-till equipment through HHCD’s Healthy Soils Program will allow these farmers to experiment with no-till practices, without having to make a large financial investment up front. Matthew and I have been actively discussing no-till practices since the fall of 2022. We are both passionate about the potential of no-till, but recognize the challenges that hinder widespread adoption. HHCD’s Healthy Soils Program will address some of these challenges by providing access to no-till equipment at a minimal rate, and mentorships from farmers with no-till experience. In addition, we will work together to host an on-farm outreach event that showcases the research that Momentum Ag is engaged in, as well as HHCD’s Healthy Soils Program.

There are robust partnerships forming in Western Massachusetts of individuals who are working tirelessly to improve the way we farm. With the right practices in place, farming can be a climate solution, working in harmony in nature, while providing nutritious and bountiful crops to our communities. HHCD is emerging as a principal partner within this collective, and I am excited to continue to collaborate with them into the future.

Please contact me if you have any questions regarding our involvement.

Sincerely,



Lincoln Fishman, Director
Momentum Ag



Hatfield Agriculture Advisory Commission
59 Main Street
Hatfield MA 01038

January 29th, 2024

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, 9th Floor
Boston, MA 02114

Re: Letter of Support “*Building Healthy Soils Through Regenerative Practices*”, *Hampden-Hampshire Conservation District*

To whom it may concern:

The Hatfield Agriculture Advisory Commission supports Hampden-Hampshire Conservation District’s application for the referenced project within the Pioneer Valley of Western Massachusetts, to assist farmers in the adoption of regenerative agriculture practices, with the goal of building soil health and climate resilience.

As a retired farmer, and a member of the Hatfield Agriculture Advisory Commission, I have experienced firsthand the impacts of climate change on agriculture in our region. Extreme weather events are making it difficult for farmers to maintain their livelihoods, which our communities depend on. In order to ensure that farmers can sustain their operations into the future, we need to change the way we farm. HHCD’s no-till mentors and public outreach events will help farmers learn about new practices that can improve the viability of their farms. Having access to no-till equipment through the Healthy Soils Program will allow farmers to experiment with regenerative practices, without having to make a large financial investment up front, and the free soil analysis is a service that many farmers will take advantage of.

The Hatfield Agriculture Advisory Commission fully endorses HHCD’s proposed project and is confident in the District’s ability to reach their stated goals and objectives.

Please contact me if you have any questions regarding our involvement. You may reach me by phone at (413) 247-5870, or by email at Johnpease1954@gmail.com

Sincerely,

John Pease

John Pease,
Hatfield Agriculture Commission



Massachusetts Association of Conservation Districts

319 Littleton Road, Suite 205
Westford, MA 01886

January 29, 2024

Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
Division of Conservation Services
100 Cambridge Street, 9th Floor
Boston, MA 02114

Re: Letter of Support “*Building Healthy Soils Through Regenerative Practices*,” Hampden-Hampshire Conservation District

To Whom It May Concern:

The Massachusetts Association of Conservation Districts (MACD) supports Hampden Hampshire Conservation District’s (HHCD) application for the referenced project within the Pioneer Valley of Western Massachusetts, to assist farmers in the adoption of regenerative agriculture practices, with the goal of building soil health and mitigating issues such as erosion, nutrient pollution, and sedimentation, caused by conventional tillage.

MACD represents the 13 Conservation Districts of the Commonwealth. We support our member Districts in their efforts to provide education, outreach, technical assistance, and other activities designed to promote sustainable stewardship of natural resources for all members of our communities. We strive to do this by increasing public visibility, access to funding, connections to government activities, opportunities for fruitful collaborations, and overall technical and financial capacity. There has long been active communication and collaboration between MACD and HHCD.

In addition, HHCD is a member of a regional partnership organized by MACD and supported by MassDEP 319 funding. This partnership is working collaboratively to address nonpoint source pollution from agricultural sources through coordinating programs and activities, identifying priorities for agricultural BMP implementation, garnering farmer support, and offering technical assistance. The overall goals of this partnership are to improve coordination among agricultural entities, develop a comprehensive database of priority sub basins, work with the agricultural community to scope and design high-priority BMP projects, secure funding for these projects, and take steps to restore impaired waters and protect at-risk watersheds.

We strongly endorse the *Building Healthy Soils Through Regenerative Practices* project that HHCD is seeking funding for, and we are confident in HHCD’s ability to achieve their stated goals. This project reflects the founding mission of Conservation Districts – to protect the soil, water, and other natural resources on which we all depend. The referenced project will not only support our shared goals of protecting natural resources and supporting farmers in Massachusetts, but a successful project will also increase MACD’s presence and impact in the state. A successful project of this nature will be mutually beneficial for all stakeholders involved.

Sincerely,

Michael Leff, MACD Executive Director



1089 North Pleasant Street P.O. Box 9631
North Amherst, MA 01059

January 30th, 2024

Executive Office of Energy and Environmental Affairs
100 Cambridge Street, 9th Floor
Boston, MA 02114

Re: Letter of Support “*Building Healthy Soils Through Regenerative Practices*”, Hampden-Hampshire Conservation District

To whom it may concern:

This Letter is written to state my support for, and intent to collaborate with, Hampden-Hampshire Conservation District (HHCD), on the project: *Building Healthy Soils Through Regenerative Practices*, for which they are applying to the Challenge Grants Implementing the Commonwealth’s Healthy Soils Action Plan. I started working with HHCD as a “no-till mentor” in 2023, and will maintain this role throughout the project period. As a no-till mentor, I educate farmers on the processes and equipment necessary to transition to no-till farming systems. In addition, I am available to guide farmers through challenges they encounter, and will participate in outreach events related to no-till agriculture.

I was raised on a family farm in Minnesota, earned a degree in Animal Science from South Dakota University in 1985, and went on to study agricultural economics at Colorado State University, where I sought solutions to issues with conventional farming. In 2006, I joined Jeremy Plotkin in managing Simple Gifts Farm in Amherst, Massachusetts. We managed Simple Gifts as a holistic ecological system, and continuously experimented with new methods to support the land and minimize the ecological impact of our farm operation. This year, Jeremy and I are stepping away from crop production at Simple Gifts, and we have both accepted new roles as agriculture specialists. Starting this year, I will be working with All Farmers, located in Springfield, which focuses on lowering barriers to enable refugee and immigrant farmers to grow resilient community farms through access to land, training, and advocacy.

Through my experience as a farmer, I have grown aware of the benefits and challenges associated with no-till farming. I feel strongly that no-till systems are essential components of a sustainable and regenerative farm system. The goal of HHCD’s project is to introduce farmers to these practices, and ensure that the experience is positive and leads to practice adoption. Having mentors available is crucial for ensuring such a positive experience.

If you have any questions regarding my involvement, you may reach me at (413) 687-0657, or dave.tepfer@gmail.com.

Sincerely,

Dave Tepfer

	Item	Distributor	Quantity	Challenge Grant	Cash Match	In-Kind	Total	Date Expended by
	Checchi & Magli Transplanter	Brookedale Farm Supplies	1.00	17,095.00	N/A	N/A	22,893.00	June 30, 2024
	International freight	Brookedale Farm Supplies	1.00	2,500.00	N/A	N/A	2,500.00	June 30, 2024
	Car Mate Trailer	Tri State Truck n' Trailer	1.00	5,400.00	N/A	N/A	5,400.00	June 30, 2024
	BCS Compost Spreader	Boyden & Perron	1.00	2,382.00	N/A	N/A	2,382.00	June 30, 2024
	Pat's Quick Hitch	Pat's Quick Hitch	1.00	550.00	N/A	N/A	550.00	June 30, 2024
	Insurance	Smith Bros Insurance	1.00	362/year	N/A	N/A	362.00	June 30, 2024
	Equipment storage	Frank Karas	12.00	50/month	N/A	N/A	600.00	June 30, 2025
	Soil Sample (UMass)	UMass Extension Amherst Campus	40.00	20.00	N/A	N/A	800.00	June 30, 2024
	Soil Sample (CASH - Standard)	Cornell University	40.00	130.00	N/A	N/A	5,200.00	June 30, 2024
	CASH Shipping*	USPS	20.00	22.80	N/A	N/A	456.00	June 20, 2025
	Salary - Program Manager	HHCD	520.00	32.00	N/A	N/A	16,640.00	June 30, 2025
	Mentorship	HHCD	20.00	50.00	N/A	N/A	1,167.00	June 30, 2025
	Workshop Host Stipend	HHCD	3.00	250.00	N/A	N/A	750.00	June 30, 2025
	Presenter Fee	HHCD	3.00	250.00	N/A	N/A	750.00	June 30, 2025
	Public Outreach Programs	HHCD	6.00	7050.00	N/A	N/A	7,050.00	June 30, 2024
	Web-based resources & enhancements	HHCD	1.00	3500.00	N/A	N/A	3,500.00	June 30, 2024
	Materials and supplies	HHCD	1.00	2000.00	N/A	N/A	1,000.00	June 30, 2025
	Overhead	HHCD	10%	8,000.00	N/A	N/A	8,000.00	June 30, 2025
				Funds expended by June 30, 2024			50,637.00	
				Funds expended by June 30, 2025			29,363.00	
				TOTAL			80,000.00	

Dual 12 Gold/Compact, one row unit for planting 2 rows. Will have horizontal racks not the rotary style



Horizontal racks like above will be on the unit

Unitrium 2 row unit for planting 2 rows. Will include horizontal racks and water tank like show above

