Welcome to the Practical Soil Health Specialist Training Program! We have been working on designing a series of workshops to help you get an in depth understanding of what soil health is, how it can be measured and monitored over time, and how soil health can be improved through holistic, adaptive, and data-driven soil management.

Activities throughout all five workshops will include a mix of classroom training, hands-on field experiences and opportunities to network with a cadre of professionals that will assist farmers across New York State. You will learn about soil health principles, analysis, reporting, interpretation and management from experts across the state.

SOME NOTES ON LOGISTICS:

The folder is a working document and we will provide you with supplemental material to add as each session progresses. In addition, materials will be made available on the American Farmland Trust website (farmland.org) after each workshop. In the folder and online, we will include pdfs of the presentations, additional reference materials and some of the presenter’s recent work, if applicable.

Some parts of the training, including Workshops 1 and 2 will be held outdoors, rain or shine. September and October can be cool in the morning and warm in the afternoon. We recommend that you come prepared with layers for temperature changes, appropriate footwear for the field and for the “classroom”, and protection from sun or rain.

In general, you will be responsible for breakfasts, snacks, and dinners for all workshops. For Workshop 1 we can provide dinner with our social hour and, if you are staying at the Comfort Inn in Cortland, breakfast is offered with an overnight stay. We will also provide lunch on Tuesday afternoon. Workshop 1 is being conducted in conjunction with the New York State Conservation District Employees Association Conservation Skills Workshop, therefore coffee and snacks will be provided during breaks. You may want to bring a travel mug to take coffee/tea on the road for the field trip and for various beverage refills during breaks and travel to the field.

If you have additional time during Workshop 1, you may want to read through sections of the Cornell Comprehensive Assessment of Soil Health Training Manual (http://soilhealth.cals.cornell.edu/training-manual/) and the SARE publication “Building Soils for Better Crops” (https://www.sare.org/Learning-Center/Books/Building-Soils-for-Better-Crops-3rd-Edition). Links to these and other resources can be found in the Resources section at the end of this packet.

We look forward to meeting you and engaging with you over the course of the next five workshops! We hope that the training will surpass your expectations and prove useful to you for many years to come.

Sincerely,

Aaron Ristow and the Cornell Soil Health Team
Participant Commitment

In addition to attendance requirements, your participation will require several activities on your part to complete the training. It is essential that you are committed to completing the course and associated tasks. Please consider them carefully. They include:

- Pay a $100 participation fee
- Attend the first project orientation and introductory workshop on September 24 and 25 in Cortland
- Attend at least three of the four remaining workshops which will be held between October 2018 and December 2019 (tentative schedule attached).
- Administer at least one farmer soil health related event or provide one on one soil health technical assistance to at least five farmers by December 31, 2020.
- Complete initial and close-out surveys along with workshop evaluations
- Track and file quarterly reports on educational and technical assistance activities
- Develop an outreach plan (AFT format and assistance provided)
- Develop a teacher tool kit (AFT assistance provided)

We realize this is a significant commitment of your time, but this training is designed to give you an in-depth look at practical ways to help farmers manage for healthy soil in New York. You were selected as someone who is already helping farmers and clients with these issues, and we believe this training will take you beyond soil health and cover crops 101, both for your benefit and for your client’s, or your operation’s benefit.

Congratulations on your acceptance into the program!
Project Milestones

PERFORMANCE TARGET
Twenty (20) agricultural service providers trained in advanced soil health principles and practical methods for using crop rotations, cover crops, reduced tillage, nutrient management and other practices on diverse farms across New York will teach 400 farmers operating 80,000 acres about soil health techniques and how to successfully integrate them into their production systems.

Fifty (50) farmers informed by our beneficiaries will conduct a soil health assessment, develop a soil health plan, or implement a soil health practice such as cover cropping, reducing tillage, crop rotation, and/or nutrient management trial or demonstration.

PROPOSED END DATE: 2/28/2021

MILESTONES FROM THE PROPOSAL BY CATEGORY with REQUESTED REVISIONS or CLARIFICATIONS

RESOURCE DEVELOPMENT
1. Advisory committee of key members of New York’s soil health and agricultural service communities will compile an advanced soil health curriculum specific to New York’s agricultural industry, soils, and topography for agricultural service providers. It is our intention for this curriculum to be available beyond the life of this project for use by others seeking to provide soil health training either “right out of the box” or as a template to be adjusted as needed. April 2018 – December 2019

RECRUITMENT and PRE-TRAINING ENGAGEMENT
2. 30 agricultural service providers from organizations such as New York Agri-Business Association, NE Region CCA, Cornell Cooperative Extension, NY Soil & Water Conservation Districts, AEM Planner List-serve, NOFA-NY and others respond to recruitment materials that clearly state performance target and outline our expectations for our beneficiaries. The service providers complete the application process which will include a pre-training skills assessment and a requirement to identify interested farmers they currently advise who they can further assist on soil health issues if selected for training program. June 2018.

3. Twenty applicants will be accepted into the training program. Their acceptance notification will repeat our performance target and beneficiary requirements and expectations. Beneficiaries will develop their own training plans on a template provided, integrating the orientation workshop and at least 3 of the 4 workshops and field days into their training plan. Contact information will be provided for assistance in developing training plans. August 2018.
LEARNING DURING EDUCATION PROGRAM

4. Twenty (20) enrolled participants will attend Orientation Workshop #1: Program Orientation and Basic Soil Health Assessment- Orientation to include: project Performance Target, Milestones, Verification, and beneficiary training plans and expectations. Basic Soil Health Assessment to include principles of soil health, soil biology, soil physics, soil health assessment and measurement, and how to use soil health tests to guide recommendations. September 2018

5. The 20 enrolled participants will attend four or more of the remaining workshops:

- Workshop #2 and Field Day, November 2018: Cropping Systems and Cover Crops- covering crop rotation and the benefits of cover crops; cover crop characteristics and seed mixtures; adapting cover crop management for differing purposes, soils, and types of farms; planting dates and methods; and termination. The field day will cover similar topics at a farm or USDA Big Flats Plant Material Center with farmer and farm advisor participants giving our students the chance to hear questions and experiences from farmers and observe the workshop presentations and demonstrations.

- Workshop #3 and Field Day, February 2019: Adaptive Nutrient Management for Soil Health- covering nutrient cycling, how soil biology impacts nutrient management, cover crop scavenging of nutrients, sampling and fertilizer recommendations. A field day for farmers and their advisors covering similar topics will give our students the chance to hear questions and experiences from farmers and observe the workshop presentations and demonstrations.

- Workshop #4 and Field Day, August 2019: Eliminating, Reducing, and Modifying Tillage for Soil Health- covering the benefits of reducing tillage; no-till, planting green, and alternative tillage methods will be discussed with considerations for differing soil types and management schemes. The field day with farmers will focus on tillage and planting equipment potentially in conjunction with Empire Farm Day’s soil health programing and demo plots.

- Workshop #5 and Field Day, November 2019: Covering customizing soil health systems to the farm and farmer, the economics of soil health, and communication skills. An “indoor” field day on honing communication skills, utilizing social media, and helping farmers build their “emotional bank account” will be held for farmers, their advisors and students.

Forty (40) farmers and 100 additional farm advisors will attend the 4 field days associated with workshops. They will gain valuable information and provide real world situations for our students to observe, interact with, and gain experience.

The 20 beneficiaries (and the additional service provider and farmer participants) will complete post workshop and field day surveys/evaluations.
ENgAGEMENT TO SUPPORT aCTION

6. The 20 service provider beneficiaries will develop their own “Teacher Tool Kit” by the end of year 2. The “Tool Kit” will consist of presentations, slides, hand-outs, references, demonstrations, etc. introduced during workshops and field days. Beneficiaries will be encouraged to share what tools and resources they have or discover with each other. The “Tool Kits” will be used by beneficiaries to help prepare for their own soil health educational and technical assistance activities with their clients. Beneficiaries will be strongly encouraged to participate with organizations such as the New York Soil Health Work Group, Western New York Soil Health Alliance or other local/regional organizations promoting soil health to expand their knowledge and resource base. We will provide contact information and meeting dates for these organizations. In addition, we will encourage beneficiaries to consider forming farmer soil health discussion groups, especially in areas without existing organizations. December 2019.

7. 20 Beneficiaries will utilize activity stipends of up to $300 each on a reimbursement basis to support and/or enhance their local soil health related educational events to include presentations, workshops, field days, tours, demonstrations and on-farm technical assistance. Stipends may be used for, but not necessarily limited to the following: speaker expenses; demonstration materials; transportation for tours; meeting room expenses; portable rest rooms; field analyses/assessments; printing costs for hand-outs/resources, agendas, etc.; signage materials; and digging of soil pits. Beneficiaries will be required to complete a request form prior to their event outlining the activity, expected attendance, what the stipend will be used for with estimated cost. For reimbursement beneficiaries will submit a completion form itemizing expenses incurred with receipts provided, final attendance, a copy of the activity’s agenda, and photographs. February 2020.

VERIFICATION

8. The 20 service provider beneficiaries will complete a quarterly progress report template to assess what they have learned, experiences gained, and updates their training needs; and to track and report on their educational and technical assistance activities including: type of event or assistance, number of farmers/service providers attending, types of farms, acres farmed, and if the farmer conducts a soil health assessment, develops a soil health plan, and/or implements a soil health practice. February 2021

9. The 20 service provider beneficiaries complete a program exit survey to assess the impacts of the project on their work with farmers regarding soil health. February 2021
Tentative Workshop Outline Schedule

1. **Project Orientation and Soil Health Principles**: Orientation to the project and expectations. Soil health principles, functions, and indicators; assessment methods; soil biology and ecology; soil health demonstrations; and resource concerns. September 24 & 25, 2018. Cortland

2. **Cropping Systems and Cover Crops**: addressing field crops and vegetable systems on crop rotation; benefits of cover crops; cover crop characteristics and seed mixes; adapting cover crop management for differing purposes, soils, and farms; planting dates and methods; harvesting/grazing options; weed control/pest management; and termination. October 23 and 24 2018, Ithaca NY.

3. **Adaptive Nutrient Management for Soil Health**: nutrient cycling; how soil biology impacts nutrient management; nutrient scavenging; fertilizer recommendations; modeling and tools; manure management and application. Winter 2019, site TBD.

4. **Eliminating, Reducing, or Modifying Tillage for Soil Health**: benefits of less tillage; no-till systems; planting green; tillage equipment; manure application equipment; equipment field demonstrations. August 2019, tentatively at Empire Farms Days, Seneca Falls.

5. **Customizing Soil Health Systems to the Farm and Farmer**: the economics of soil health; grazing systems; communication skills and storytelling; preparation for participant education and technical assistance activities. November 2019, site TBD.
WORKSHOP ONE – PROJECT ORIENTATION AND SOIL HEALTH PRINCIPLES

SEPTEMBER 24 AND 25, 2018  •  CORTLAND, NY

Agenda

Day 1 – September 24
1:00 – 2:00  Welcome and Orientation – Jeff Ten Eyck and Aaron Ristow

2:00 – 2:30  Introduction to Soil Health – Paul Salon

2:30 - 3:15  Soil Health Principles and Functions – David Wolfe

3:15 – 3:30  Break

3:30 – 4:00  Soil Health Demonstrations – Amy Langner

4:00 – 5:00  Soil Biology and Ecology – Janice Thies

5:00 Adjourn session – Check-in to the Comfort Inn if applicable

5:30 – 7:00 Social hour at Hobo’s in Homer. 10 S West Street (Route 281)
WORKSHOP ONE – PROJECT ORIENTATION AND SOIL HEALTH PRINCIPLES

SEPTEMBER 24 AND 25, 2018  ●  CORTLAND, NY

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**Agenda**

**Day 2 – September 25**

8:30 – 9:45  Ecological Nutrient Management – Laurie Drinkwater

9:45 – 10:15  Soil Health Indicators and Constraints – Kirsten Kurtz

10:15 – 10:30  Break

10:30 – 11:00  Soil Health Planning Framework – Aaron Ristow

11:00 – 12:20  Soil Health Management Scenarios Field Exercises – Bob Schindelbeck

12:20 – 1:20  Box Lunch and Travel to Farm

1:30 – 2:15  Soil Health Management on Whey Street Diary (Marty Young)

2:15 – 4:20  Soil Pit and Soil Health Field Stations* (see page 3 for details)

*Group 1:* Inherent vs. Dynamic Soil Properties and Soil Field Assessment – Steve Page, Olga Vargas, Amy Langner

Soil pits: Comparison of soil health under differing management schemes utilizing assessment tools

*Group 2:* Soil Health Sampling Strategy and Considerations – Bob Schindelbeck

4:20 – 4:30  Evaluation and preview next Soil Health Specialist session