

MODEL STATE-LEVEL HEALTHY SOILS LEGISLATION: AN OUTLINE

- Overview. This is a working draft of the chief provisions a state may consider including in “healthy soils” (HS) legislation. HS legislation is aimed at reducing greenhouse gas emissions in the agricultural sector and increasing the amount of carbon stored in agricultural soils. Other benefits, as described more fully below, include enhancing the economic vitality of farms and ranches, making farms and ranches more resilient to extreme weather events, and mitigating water pollution.
- Menu approach. Understanding that the legislation will need to accommodate the specific geo- and socio-political landscapes of the implementing state, the goal of this model legislation is to provide a menu of options for states to choose from. We have pulled many of the provisions, as indicated in the footnotes, from existing state-level HS legislation and programs. We have used brackets ([]) to highlight provisions and language that will likely be less appealing for certain state legislatures—language and provisions, for example, that focus on climate change and greenhouse gas emissions. For those states, we suggest focusing instead on the co-benefits of healthy soils practices (e.g., resilience from extreme weather events, reduced water pollution). Appendix A includes a chart summarizing the status and key provisions of existing state-level HS legislation across the United States.
- Key issues. In addition to combing through and identifying the most promising components of existing state-level HS legislation, we have also attempted to address a number of other key issues, including without limitation: various ways to structure financial incentives; ensuring access to viable markets; innovative funding mechanisms; and managing expectations related to the evolving science on decarbonization in the agricultural sector.
- Synthesis.
 - *Findings* – The ideal findings section should emphasize the existential threat that climate change poses, especially to the agricultural sector. It should also underscore the way agriculture works as both a GHG source (via operational emissions) and a carbon sink (via the carbon sequestration potential of soils). Reducing operational emissions while simultaneously increasing soil carbon content presents the agricultural sector with an opportunity to create a double win on the climate mitigation front. Healthy soil legislation should focus on this unique opportunity. Further, the implementation of healthy soil practices offers other environmental and economic co-benefits while concurrently shielding agricultural operations from extreme weather events, soil erosion, and changing climate patterns.
 - *Objectives* – The legislation’s central objective is to create a program that incentivizes the implementation of healthy soils practices among farmers and ranchers across a given state. The objectives should also account for the challenge of impermanence—namely, that the benefits of many of the practices being incentivized can quickly be undermined or reversed by a future land use change (e.g., plowing a field, clearing a forest).
 - *Producer education and technical assistance* – Key to the success of the program is a robust educational and technical assistance program dedicated not only to spreading word about the existence of the program, but also streamlining the participant application process for a demographic (farmers and ranchers) less prone to speedy change.

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- *Research, monitoring, and measurement* – Improving the ability to quantify the amount of carbon sequestered in a farm or ranch’s soil over time will be critical to the continued viability of a healthy soils program. This section should focus on that long-term goal while also unpacking practice-based quantification methods for the state to use in the interim.
- *Payment program* – States have two basic payment programs to choose from: practice-based programs and outcome-based programs. Practice-based programs (like the upfront payment and grant programs outlined below) pay participants for the implementation of particular HS practices based on the premise that those practices typically create beneficial outcomes. With practice-based programs, the state certifies the successful implementation of the practices themselves (e.g., the timing and type of cover crop implementation)—not the outcomes of those practices (e.g., amount of carbon sequestered per acre of soil). By contrast, an outcome-based program would measure the amount of carbon sequestered and GHG emissions reduced, awarding payments based on a pre-determined amount. While outcome-based programs are better for obtaining the end goal of decarbonizing the agricultural sector, they depend on accurate quantification methodology. Until that methodology has improved from where it is today, states will likely need to employ practice-based programs or a mix of practice-based and outcome-based programs.
- *Funding* – The ideal program would be funded by something akin to California’s cap and trade program, where a portion of the funds from an established revenue source are earmarked for the state’s healthy soils legislation. In addition to drawing on this existing pot of money for grants and incentive payments, the state should also use tax credits and fertilizer/pesticide fees to incentivize farmers to adopt healthy soils practices. Once established, the state may also consider implementing certain parts of the program as a loan system (as opposed to a grant system), with program participants paying a small interest fee that helps grow the program’s funds over time.
- *Task force* – Ideally, the legislation will not lay the bulk of the program in the lap of the task force (as most existing legislation has done) by leaving large portions of the program’s details for the task force to figure out at some later date. The legislation should shield the task force from industrial agriculture’s influence as much as possible, which means close attention should be paid to the composition of the task force and the member selection process. Further, the task force should ensure that the program remains current with the latest science and soil carbon quantification measures.

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I. FINDINGS – The general assembly finds that:

A. Climate change is a threat to the state, particularly the state’s agricultural sector.¹

1. The Fourth National Climate Assessment by the United States Global Change Research Program and the Fifth Assessment Report of the United Nations Intergovernmental Panel on Climate Change both conclude that climate change is one of the major challenges of our time. The impacts of climate change are global in scope and unprecedented in scale. The assessment and report maintain that without action now, adapting to these impacts in the future will be more difficult and costly.²
2. For [insert state], temperatures over the past century show the state’s average surface temperature is rising. Since the 1970s, nights, winters, and summers have become warmer, growing seasons longer, and high-rainfall events more common. Average temperatures in the state are projected to increase, resulting in more heat waves. Average summer rainfall is projected to decrease and become more variable in the future, resulting in the soil becoming drier. While [insert state]’s weather is highly variable from year to year, these climatic trends are confirmed by data from many sources worldwide.³
3. Long-term increasing average temperatures and the increased occurrence of drought, heat waves, flooding, high winds, pests, and other abnormal climate events in the state and elsewhere will progressively impact the economy of the state and quality of life. Many sectors and resources will be impacted including agriculture, water, public health and health care, energy generation and usage, ecosystems, forestry, rural and urban communities, transportation, and commerce and industry. Climate change is especially critical for the state’s agriculturally dominant economy. [Insert state]’s life-giving water and soil resources continue to be subject to new stressors and risks.⁴
4. While the state is projected to see an increase in precipitation overall, it is expected to come in short, extreme precipitation events in between mild droughts. This represents a major risk to farms, particularly those in low-lying or flood prone areas. Even very local downpours and cloud bursts can cause substantial damage to farms.⁵
5. Regenerative agriculture⁶ regenerates soil health which may be essential to preserve farming globally and in [insert state] as the United Nations Food and Agriculture Organization estimates that, at current rates of degradation, the world could lose most if not all of its arable topsoil in 60 years; and the U.S. Department of Agriculture’s Natural Resource Conservation Service (NRCS) calculated that [insert state] farmland loses on average [insert] tons of soil per acre per year due to erosion by water.⁷
6. Increasing levels of carbon dioxide and other gases in the atmosphere have led to growing interest in national and international forums for implementing measures to slow and reverse the buildup of such atmospheric constituents.⁸

7. The state is a powerhouse agricultural state because of its productive soils and abundant water. However, through the years there has been a depletion of organic matter and trace minerals, making the soil less fertile than it was.⁹

B. The agricultural sector constitutes both a sink for and a source of greenhouse gas emissions.

1. Agriculture contributes about 9% of the nation's total greenhouse gas emissions each year.¹⁰ Agricultural emissions, which incorporates both crop and livestock operations, consist largely of nitrous oxide and methane. Nitrous oxide and methane are far more potent GHGs than carbon dioxide: the average radiative forcing of nitrous oxide is 265-298 times that of carbon dioxide over 100 years,¹¹ and the average radiative forcing of methane is about 28-34 times that of carbon dioxide over 100 years.¹² In 2016 alone, agriculture released an amount of greenhouse gases roughly equal to that produced by 120 million automobiles in a typical year.¹³ The largest source of U.S. agricultural greenhouse gas emissions is agricultural soil management, which includes practices like fertilization, tillage, drainage, irrigation, and fallowing of land.¹⁴ The next largest source of agricultural emissions is enteric fermentation, which is generated by cows, sheep, and other ruminants. Enteric fermentation is responsible for 30% of all agricultural emissions and 26% of methane emissions in the United States.¹⁵ Manure management activities are the third major category of U.S. agricultural emissions, releasing nitrous oxide and methane in quantities that total 15% of total U.S. agricultural emissions.¹⁶ Large-scale, intensive livestock facilities generate the substantial majority of these emissions.
2. Estimates of annual greenhouse gas emissions from agriculture (apart from agricultural energy use, which is classified differently) in the state range from [insert] million metric tons of carbon dioxide equivalent. Manure management is responsible for roughly [insert] of the emissions; emissions from soils are slightly under a [insert] of the total. This represents a major opportunity to reduce emissions.¹⁷
3. Maintaining high organic matter, a cornerstone of good soil health management, stores carbon in soils (organic matter is often more than 60 percent carbon) that otherwise would be in the air as the greenhouse gas, carbon dioxide. In this way, building healthy soils is a natural geoengineering approach for carbon capture and sequestration that can slow the pace of climate change (mitigation), while also improving resilience to some of the uncertainties of weather in a changing climate, such as increased risk of drought or flooding.¹⁸
4. Recent global and national analyses suggest that natural climate solutions which include agroforestry as well as better soil and crop management, could potentially compensate for up to a third of human greenhouse gas emissions.¹⁹ Recent research has found that some agricultural practices will not only reduce greenhouse gas emissions, but they also may help to store carbon in soils and trees. Carbon storage is an important strategy to help meet the state's greenhouse gas emissions targets. In addition,

the state's agricultural lands and rangelands hold the potential to sequester millions of metric tons of carbon, resulting in enhanced agricultural production and increased resilience to climate change and drought.²⁰

5. Terrestrial carbon sinks offer immense potential for removing vast amounts of atmospheric carbon.²¹
6. While forests, rangelands, and agricultural soils have long been recognized as major carbon sinks for removing and storing atmospheric carbon, these terrestrial carbon sinks have become less effective in storing atmospheric carbon in recent decades. Due to sub-optimal management practices on vast acreages, terrestrial carbon sinks are actually releasing previously stored carbon into the atmosphere as carbon dioxide and therefore contributing to atmospheric carbon dioxide loading. In recent years, scientific research has resulted in much better understanding of the dynamics of healthy soil communities that are the active mechanism to sequester atmospheric carbon.²²
7. Opportunities exist to reduce fossil-fuel energy usage on farms and ranches, including that which is embedded in fertilizers, pesticides, and pumped water. Reducing fossil fuel use on farms and ranches will reduce local and global pollution while helping farmers and ranchers save money.²³
8. The legislature finds that opportunities exist to enhance soil health by adopting precision agriculture and regenerative agriculture practices that increase soil organic carbon levels, and to store carbon in standing trees.²⁴

C. Climate smart agriculture offers significant mitigation potential and numerous environmental co-benefits.

1. While a significant focus of state law addressing soil conservation, and the activities of the state's [agricultural and natural resource agencies], is the prevention of soil erosion and the protection of surrounding natural resources affected by agricultural land and activities, many of the best management practices promoted to address those concerns also contribute to improved soil health. The planting of winter cover crops, for example, not only helps to prevent erosion and absorb residual nutrients remaining after summer row crops, but also increases organic matter in the soil, an important soil health property.²⁵ Numerous peer-reviewed, published data have found that climate smart agriculture, including on-farm and ranch soil and vegetation management, can significantly enhance soil carbon sequestration, resulting in a wide range of environmental and agricultural co-benefits, including increased water retention in soils, improved water quality, soil health, and forage quantity and quality, reductions in greenhouse gases, and climate adaptation and resilience.²⁶
2. Appropriate planning and coordination is needed to speed up and coordinate the adoption of conservation practices that rebuild and protect soil carbon to increase water holding capacity and enhance the vitality of the subsurface microbiome for landowners to capitalize on the economic and production benefits of soil health, while simultaneously enhancing water quality,

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capturing carbon, building resilience to drought and pests, reducing greenhouse gas emissions, expanding pollinator and other wildlife habitat, and protecting fragile ecosystems for a more sustainable future.²⁷

3. In recent decades the development and application of advanced forestry, rangeland management, and agricultural practices have been demonstrated conclusively at the experimental, farm, and landscape scale to improve the health of these soil communities, thereby generating a wide range of economic and environmental benefits. These benefits include increased productivity and profitability of lands, restored native bio-diversity, improved watershed health and quality, improved quality and quantity of water, better wildlife habitat, increased resistance to drought, and in the long term, the sequestration of vast amounts of atmospheric carbon in the soil.²⁸
4. The legislature hereby finds and declares that soil and vegetation management can significantly enhance soil and carbon sequestration, resulting in a wide range of environmental and agricultural benefits to [insert state] farmers and residents, including: increased yields; soil health; improved water quality; and reductions in greenhouse gases.²⁹
5. Revised grazing policies have the potential to heal ecosystems and produce a wide range of economic and environmental benefits. Proven advanced forestry practices may substantially improve the health and productivity of forest lands, greatly reduce the risk of catastrophic fire, restore native biodiversity, and generate a wide range of other economic and environmental benefits while vastly increasing the amount of atmospheric carbon being sequestered.³⁰

D. Fostering healthy soils and climate smart agriculture contributes to the long-term viability of agriculture across the state.

1. Healthy soils are a limited natural resource and fundamental for healthy and sustainable food production. Improving soil health means increasing soil's organic matter and diversifying its microbial activity to enhance agricultural productivity and environmental resilience. A commitment to healthy and productive soils and clean water is critical as world population and food production demands rise.³¹
2. Maintaining and improving soil health is key to preventing soil depletion, ensuring long-term agricultural productivity, and protecting the environment in our region, as well as the ongoing health of the rural economy and regional food security.³²
3. The legislature finds that agricultural land management practices that sequester carbon could provide greenhouse gas benefits, enhance the sustainability of the state's agricultural lands, decrease sedimentation of the marine environment, improve the climate resistance of the state's agricultural sector, and create new opportunities for local farmers.³³

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4. Healthy soil contributes to the long-term productivity and viability of agriculture because healthy soil increases crop yields, is more resistant to erosion, and has improved nutrient cycling, water infiltration, and capacity to hold water.³⁴

E. Healthy soil practices help stem erosion, protect water quality, and safeguard bio-diversity.

1. The legislature declares it to be in the public interest to provide (a) for the conservation of the soil, soil health, soil resources, organic matter in soil and plants, water quality and water resources of this State, (b) for the control and prevention of soil erosion, (c) for the prevention of air and water pollution and the improvement of resilience to droughts, floods, and other extreme weather, and (d) for the prevention of erosion, floodwater and sediment damages, and thereby to conserve natural resources, control floods, prevent impairment of dams and reservoirs, assist in maintaining the navigability of rivers and harbors, conserve wild life and forests, protect the tax base, protect public lands, and protect and promote the health, safety and general welfare of the people of this state.³⁵
2. The legislature finds that erosion continues to be a serious problem throughout the state, and that rapid shifts in land use from agricultural to nonagricultural uses, changes in farm enterprises, operations, ownership, construction of housing, industrial and commercial developments, streets, highways, recreation areas, schools, colleges and universities, and other land disturbing activities have accelerated the process of soil erosion and sediment deposition resulting in pollution of the waters of the state and damage to domestic, agricultural, industrial, recreational, fish and wildlife, and other resource uses.³⁶
3. Steps taken by those working in the state's agricultural sector to reduce greenhouse gas emissions and sequester atmospheric carbon can provide other important environmental co-benefits, such as improved air and water quality, water conservation, enhanced wildlife habitat, and healthier rural communities.³⁷ These environmental co-benefits stand to generate significant economic benefits as well by alleviating the costly externalities of agricultural pollution. A 2011 study by the USDA's Economic Research Service concluded that it costs \$1.7 billion a year to treat drinking water contaminated by nitrates from farm fields.³⁸ But cutting nitrates in source water by just 1 percent would decrease treatment costs by over \$120 million a year. A 2015 study found that potential health and environmental damages from nitrogen lost from farm fields cost \$157 billion a year.³⁹ Further, according to the Environmental Protection Agency, the tourism industry loses close to \$1 billion each year because of water bodies affected by nutrient pollution and harmful algal blooms.⁴⁰
4. Implementation of good soil health practices on working lands will minimize sedimentation and nutrient and chemical losses (herbicide, pesticide, fertilizer, manure) into our lakes, streams, and groundwater. This is closely linked with maintaining a supply of safe drinking water and mitigating concerns about harmful blooms, which are increasingly prevalent on many lakes in [insert state].⁴¹

F. Healthy soil practices offer considerable economic benefits to the state’s farmers.

1. There is a significant opportunity for the state’s farmers and ranchers to capitalize on the economic and production benefits of improved soil health, while simultaneously improving surface and ground water quality.⁴² One study found a ~\$40 per acre-increase in profit on corn acres with healthy soil practices—roughly double the current average.⁴³ Another study by researchers at Cornell University and Pennsylvania State University found that planting a winter cover crop following corn increased nitrogen retention and reduced the need for additional fertilizer applications.⁴⁴ Another 2017 study by the National Association of Conservation Districts found that using cover crops and no-till can result in an economic return of over \$100 per acre.⁴⁵
2. Improving the health of the state’s soil is the most effective way for agricultural producers to increase crop and forage productivity and profitability while also protecting the environment.⁴⁶
3. Projected economic losses can be minimized and economic gains realized by the state’s farmers and ranchers taking appropriate adaptive and mitigating strategies. Economic opportunities exist through development of renewable energy from our abundant wind and solar resources, reduction of pollutants through decreased use of fossil fuels, improvements to soil health and water management, development of more resilient crop, range, and livestock systems, and development of new technologies and new products that match the state’s vibrant and changing needs and resources.⁴⁷
4. Contrary to the popular notion that soil health benefits only occur after many years of investment, results indicated that some benefits, such as reduced erosion with cover crops and reduced labor and fuel costs with less tillage, were realized within the first five years of adoption. While other benefits such as higher yields can take longer to come to fruition.⁴⁸
5. Farmers can avoid tax and expense increases associated with water treatment, dredging sediment from waterways, flood control, and repairing damage associated with climate change-related extreme weather events and erosion.⁴⁹
6. Potential off-farm economic benefits of good soil health management include lower food and water prices, increases in land and home values, and maintaining the recreational value of public and private land and water bodies.⁵⁰
7. Farmers in the state face significant economic pressures as the costs of production often exceed prices paid for milk or other products. Many farmers have adopted regenerative farming practices to benefit from reduced input costs, improved yields, and better resilience to climatic extremes. Simultaneously with market conditions, farmers are facing regulatory pressures to improve management of agricultural waste and satisfy standards for the sale of food products. Some of the state’s farmers may benefit economically from adopting regenerative farming practices.⁵¹

G. Healthy soils practices provide considerable economic benefits to the general public.

1. The legislature finds that the state and numerous other states and private industries have established carbon credits that polluters buy to offset their carbon emissions. [Billions] of dollars have been raised by the state alone, and many industries are seeking new places to invest these dollars to offset their carbon emissions.⁵²
2. An ambitious study organized by The Nature Conservancy gathered soil health economic-oriented information from a wide variety of sources for three important field crops: corn, soybean, and wheat. They estimated that for each 1% of U.S. acres of corn-soy-wheat adopting soil health practices, the annual economic benefits would amount to \$226 million of societal value through increased water capacity, reduced erosion and nutrient loss, and reduced greenhouse gas emissions.⁵³

II. DEFINITIONS – As used herein:

- A. “Healthy soil practices” and “regenerative agriculture” shall mean a series of cropland, pastureland, and rangeland management practices that:
 1. sequesters carbon in agricultural soils;
 2. contributes to generating or building soils and soil fertility and health;
 3. increases water percolation, increases water retention, and increases the amount of clean water running off farms; and
 4. increases biodiversity and ecosystem health and resiliency.⁵⁴
- B. “Program” shall mean the healthy soils program created by this Act.
- C. “Department” shall mean the [insert state] department of agriculture.⁵⁵
- D. “Precision agriculture” shall mean site-specific management practices where sensing, information technologies, and mechanical systems enable subfield crop management.⁵⁶
- E. “Task force” shall mean a group of individuals selected and designated per Section XI of this Act tasked with establishing healthy soil benchmarks; identifying measurement criteria for the purpose of the Act’s healthy soils program; identifying activities, policies, and best practices to attain those benchmarks; and other objectives as set forth in this Act.

III. OBJECTIVES AND PURPOSES

- A. The program is created in the department. The department, in consultation with the task force, shall establish and oversee a healthy soils program. The program shall seek to [optimize climate benefits while] supporting the economic viability of the state’s agricultural sector by providing incentives, including, but not limited to, loans, grants, research, and technical assistance, and educational materials and outreach, to farmers whose management practices contribute to healthy soils [and result in net long-term on-farm greenhouse gas benefits.] The program may also include the funding of on-farm demonstration projects that further the goals of the program. The department, with support and advice from the task force, shall administer the program.
- B. The department, in consultation with the task force, may determine priorities for the program and give priority to projects that occur in and benefit disadvantaged communities, show promise of being replicable in other parts of the state, or provide environmental and agronomic co-benefits, such as improved air and water quality, improved crop yield, and reduced soil erosion.⁵⁷
- C. In consultation with the task force, the department shall develop incentives and funding mechanisms for these incentives, including but not limited to loans, tax credits, or grants; research; technical assistance; or educational materials and outreach, to participating agricultural activities, or on-farm demonstration projects that are identified and approved by the task force as those that would promote greenhouse gas benefits, build healthy soils, sequester carbon, increase water-holding capacity, and increase crop yields.⁵⁸ The department, in consultation with the task force, shall also account for the degree of permanence accompanying a particular practice and place higher priority on practices with greater permanence (e.g., alley cropping and silvopasture) in contrast to those with lower permanence (e.g., low tillage).⁵⁹
- D. The department, in consultation with the task force, shall determine whether the healthy soils program may be implemented in a manner to enhance other state, local, and federal programs that provide financial assistance to farmers and ranchers.
- E. The purpose of the program is to:
 - 1. promote and support farming and ranching systems and other forms of land management that increase soil organic matter, aggregate stability, microbiology and water retention to improve the health, yield and profitability of the soils of the state;⁶⁰
 - 2. reduce the greenhouse gas emissions generated by the state’s agricultural sector;
 - 3. enhance the economic viability of farms in the state;

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4. encourage farmers to implement regenerative farming practices (e.g., mixed cover crops, no-till or low-till farming, rotation grazing, crop rotation, enhanced fertilizer management);
 5. reduce the amount of agricultural waste entering the waters of the state;
 6. enhance crop resilience to rainfall fluctuations and mitigate water damage to crops, land, and surrounding infrastructure;
 7. promote cost-effective farming practices;
 8. reinvigorate the rural economy; and
 9. help the next generation of the state's farmers learn regenerative farming practices so that farming remains integral to the economy, landscape, and culture of the state.⁶¹
- F. The department, in consultation with the task force, shall also incentivize as part of this program other climate-friendly agricultural practices, including on-site renewable energy,⁶² manure management at concentrated animal feeding operations, forest and farmland protection, and productivity increase through feed improvements.
- G. The department, in consultation with the task force, shall adopt rules and regulations necessary to carry out the Act.

Producer education and technical assistance

- A. **Department-sponsored education and assistance.** The department, in consultation with the task force, shall provide educational, outreach, and technical assistance to farmers and ranchers seeking to participate in the healthy soils program. The department, in consultation with the task force, shall facilitate on-site, producer-led workshops and training sessions to promote and engender soil health stewardship.
- B. **Technical assistance providers.** In implementing these educational, outreach, and technical assistance efforts, the department shall work through technical assistance providers or eligible entities to:
1. encourage farmers and ranchers and land managers to undertake voluntary soil health measurements;
 2. raise awareness about desirable soil health characteristics;
 3. facilitate on-site, producer-led workshops and training sessions to promote and engender soil health stewardship; and

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4. complete a baseline soil health assessment by testing the organic matter, water infiltration rate, microbiology and aggregate stability of soils, in addition to analyzing phospholipids and monitoring soil cover;
5. develop and share regional, crop-specific recommendations for healthy soils practices, including without limitation the varieties, timing, and management of cover crops and crop rotations and the varieties, species, spacing, and management issues related to agroforestry and silvopasture;
6. create a program to provide ongoing training in soil health stewardship and workshop facilitation for champions [as defined below] and eligible entities;
7. sponsor soil health workshops and training sessions at research centers and learning sites throughout the state; and
8. educate students and the general public about the importance of soil health stewardship.⁶³

C. **Healthy Soil Champions.**

1. The department, in consultation with the task force, shall establish a network of statewide champions to promote soil health stewardship, offer guidance to producers and land managers and encourage teamwork.
2. “Healthy Soil Champion,” for the purposes of the Act, shall mean a land manager that is declared a soil health champion due to the land manager's excellence in applying and promoting soil health principles, as modeled by the soil health champion program of the national association of conservation districts.⁶⁴
3. The department, in consultation with the task force, shall provide financial and technical assistance to Healthy Soil Champions to travel and work within the State and their communities to further their purpose as Healthy Soil Champions and raising awareness about desirable soil health characteristics, the benefits of healthy soil practices, and the most efficient and effective means of adopting those practices.
4. The department, in consultation with the task force, shall issue *Star* Healthy Soil Champion designations for farmers and ranchers who, based on measurement and modeling, achieve carbon neutrality or better in their operation. The department, in consultation with the task force, shall award Star Healthy Soil Champions through additional financial allotments, public recognitions, and other rewards deemed appropriate by the department in consultation with the task force.

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- D. **Equipment loan program.** To promote healthy soil practices and the objectives of this Act, the department, in consultation with the task force, shall provide equipment for loan or rent at low cost to qualifying program participants.⁶⁵

IV. RESEARCH, MONITORING, AND MEASUREMENT

- A. **Challenges and Opportunities.** Accurately monitoring and measuring the variability of carbon content in soils associated with the implementation of healthy soils practices is challenging—especially across a farm- or ranch-size scale. From a scientific perspective, we do not yet fully understand the many factors (and the interaction of those factors) that control carbon content and dynamics in soil across the diversity of managed ecosystems. Further, unlike other energy sectors, the GHG reductions that accompany the implementation of carbon sequestration practices in the agricultural sector can often be easily reversed (e.g., tilling a field, clear-cutting a forest). Regardless of these challenges, reliable and cost-effective quantification methods are critical to designing and implementing healthy soils practices across the state. Those methods continue to improve.⁶⁶ The level of accuracy required for quantification will be greatest for offset projects in which sequestered carbon has a defined volumetric value as a fungible commodity.
- B. **Funding.** In 2016, despite having a larger budget overall, federal funding for agricultural research was at a historical low: less than 2% of USDA’s total budget was devoted to agricultural research.⁶⁷ The department, in consultation with the task force, shall provide funding for the state’s agricultural colleges and related institutions to conduct research on healthy soils practices and effective and efficient outcome measurement techniques.

V. SPECIFIED UPFRONT PAYMENT

- A. **Payment for practice implementation.** Subject to the availability of amounts appropriated for this specific purpose, the department shall develop, in consultation with the task force, a healthy soils incentive program to facilitate the implementation of and payment for the practices set forth in this subsection of the Act.
- B. **Cover crop incentive.**⁶⁸
 - 1. **Additional definitions.**
 - a. “Cover crop,” for the purposes of this Act, shall mean a crop planted on agricultural land and horticultural land primarily to manage soil erosion, soil fertility, soil quality, water quality, water holding capacity, weeds, pests, diseases, biodiversity, or wildlife.
 - b. “Incentive payment,” for the purposes of this Act, shall mean a cash payment made pursuant to the Act.

2. Eligibility.

- a.** The department shall award incentive payments under the healthy soils program in order to encourage farmers in the State to plant cover crops. Beginning in the calendar year [insert], the department shall accept applications for incentive payments for cover crops. No payments shall be made to applicants for the planting of cover crops if the planting occurs after [insert future date].⁶⁹
- b.** Cover crop plantings eligible for payment under this section must be located on agricultural and horticultural land in the state that is owned by the applicant.⁷⁰

3. Payment amounts; limits.

- a.** The commissioner shall make payments to individuals and companies implementing eligible cover crop plantings. The amount of the payment for each eligible cover crop planting awarded to a qualified applicant under the act shall be in an amount equal to:
 - (i)** For a single species cover crop, [insert] dollars multiplied by the number of acres on which the cover crop is planted; or
 - (ii)** For a multi-species cover crop, [insert] dollars multiplied by the number of acres on which the cover crop is planted.
- b.** The maximum amount of incentives that may be approved for a single qualified applicant in any calendar year under this section is [insert] dollars. Total payments under this section to all eligible applicants for cover crop incentive payments in a fiscal year may not exceed the amount necessary for [insert] acres. The commissioner shall award payments on a first-come, first-served basis within the limits of available funding.

4. Crop rotation requirements. Eligible cover crop plantings must meet the practice implementation requirements of the applicable [USDA NRCS Conservation Practice Standards](#)⁷¹ as specified in [State] and as determined by the department.

5. Applications.

- a.** Applications for incentives shall be submitted on a form prescribed by the department and shall include:

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- (i) The name of the qualified applicant;
 - (ii) The location of the agricultural land and horticultural land within the applicable zone and the number of acres on which the cover crop will be planted;⁷²
 - (iii) An indication of whether the cover crop is a single species cover crop or a multi-species cover crop; and
 - (iv) Such other information as is required by the department to determine eligibility for incentives.
- b. If the department determines that the qualified applicant qualifies for incentives, the department shall approve the application within the limits set forth in this section and shall pay the incentives to the qualified applicant.

C. [insert re other practices]⁷³

VI. GRANT PROGRAM WITH SCORING CRITERIA⁷⁴

A. Additional Definitions.

1. For the purpose of this program, an agricultural operation is defined as row, vineyard, field and tree crops, commercial nurseries, nursery stock production, and livestock and livestock product operations.

B. Eligibility.

1. The department shall award incentive payments under the healthy soils incentive program in order to encourage farmers in the State to implement healthy soils practices as specified herein. Farmers, ranchers, and federal and state recognized Native American Indian Tribes located in the state are eligible to apply. Projects must be located on an agricultural operation located within the state.
2. Awards are limited to one per agricultural operation using a unique tax identification number per round of funding.
3. All projects must implement at least one of the eligible agricultural management practices listed under the Eligible Agricultural Management Practices subdivision of this section, on fields or Assessor's Parcel Number (APN)s where said practice was not implemented previously. Program funds cannot be used to implement management practices that are not listed under Eligible Agricultural Management Practices in this grant solicitation. Program funds cannot be used for projects that use potted plants or other plant growth media.

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4. [Projects must result in net GHG benefits (i.e., net positive GHG reductions) from specific eligible agricultural management practices identified in this solicitation for the grant agreement term supported by document(s) of carbon sequestration and GHG estimation report(s).⁷⁵ An estimation of the reduction in GHG emissions from the selected Eligible Agricultural Management Practices must be calculated using the quantification methodology and calculator tools developed by the [task force] as calculated by the technical assistance providers pursuant to Subdivision 3 of this section. A carbon sequestration and GHG estimation report will be generated upon completion of the calculation, which must be included as part of the application, and is required for all eligible agricultural management practice(s) selected. Projects eligible for program funding must achieve net GHG reductions, i.e., GHG reductions estimated using the QM and calculator tool must be positive in consideration of all the practices selected.]⁷⁶
5. To be eligible for funding, applicants must provide baseline data on cropping and management histories directly related to fields identified by APNs where eligible agricultural management practices are proposed for implementation.⁷⁷ Applicants must submit the following baseline data at the time of application:
 - a. Cropping history from the past three years in all APN(s) included in the application.
 - b. Management practice history in the past three years in all APN(s) included in the application.
6. Applicants must lease, own or otherwise control the APNs where project activities are proposed to occur for the entirety of the project duration. If leasing land, applicants must ensure the proposed project does not violate their lease agreement and document approval by the landowner to implement proposed practices(s) from [insert date] through [insert date].
7. If selected for funding, applicants must be able to execute a grant agreement within [30 days] of receiving a notice of award.
8. Eligible agricultural management practices may be implemented alone or in combinations, except where specified by the department or [task force] per statute or regulation, on one APN or several APNs. Multiple APNs within the same agricultural operation may be included in the project. Once awarded, recipients may not change the APNs included in the grant application through the duration of the project. Implementation of eligible management practices will be incentivized based on payment rates provided in the project year's program practices, as developed and adjusted by the [task force].

C. Technical Assistance with Applications.

1. The department shall provide Technical Assistance (one-to-one on-demand assistance) across the state free of cost to all potential applicants.

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2. These technical assistance providers (TAPs) shall consist of experts in agricultural management practices from the state's academic research institutions, resource conservation districts, and non-profit organizations.
3. TAPs shall not charge any additional fees or subsequent commitments (financial or otherwise) to help submit applications. Assistance may include technical aspects of the application process such as baseline data calculations, GHG calculation requirements, practice selection, project design, availability of a computer and internet to prepare the application.

D. Agricultural Management Practices.

1. The following constitute eligible agricultural management practices that sequester carbon, reduce atmospheric GHGs and improve soil health for projects on agricultural lands in the state:
 - a. [insert practices from USDA NRCS CPS practice guides]
2. The [task force] shall update and revise this list pursuant to its obligations to update the program with the most recent scientific studies on soil carbon sequestration.

E. Technical Specifications for Estimation of [GHG/Healthy Soil]⁷⁸ Benefits.

1. To estimate the net [GHG/Healthy Soil] benefits due to a practice implementation, the expected life of the practice is as follows, which is distinct from the grant duration:
 - a. soil management practices: [x] years
 - b. cropland to herbaceous cover practices: [x] years
 - c. grazing lands practices, except silvopasture: [x] years
 - d. wood cover establishment practices and silvopasture: [x] years
2. Implementation of each practice must be consistent with the USDA NRCS Conservation Practice Standards (CPS) as specified in the state.

F. Project Duration and Cost Sharing.

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1. The program will provide funds for the grant duration beginning [insert date duration]. Though not required, applicants are encouraged to provide cost share to the project through the grant duration. Cost sharing can be in the form of matching funds or in-kind contributions. Matching funds refers to a dollar amount committed to a project from a source other than the program. An in-kind contribution is the estimated dollar value of any time, property, or supplies donated to a project, including costs associated with labor for work involved in the implementation of the proposed project. Those who provide cost sharing may receive additional consideration during the project review pursuant to the criteria set for in Subdivision 8 of this section.
2. The timeline for implementation of awarded projects is [insert duration of first project year], [insert duration of second project year], and [insert duration of third project year].⁷⁹

G. Grant Application Process.

1. The program works through a web-based application process. The grant application is a series of questions in one or more of the following formats: a drop-down menu; a check box; a text box with predetermined character limitations; or as a document attachment. Responses to all questions must be submitted in the manner and format required by the application questionnaire electronically without exception.
2. All applicants will be notified by email regarding the status of their grant application. Applicants not selected for funding will receive feedback on their grant application within [60 days] after receiving notification.

H. Review and Evaluation Process.

1. The agency, in consultation with the task force, will conduct multiple levels of review during the grant application process. The first level review is an administrative review to determine whether application requirements were met and if applicable, assess an applicant's past grant performance. All required documentation must be submitted to avoid disqualification. The second level review is a technical review to evaluate the feasibility and overall likelihood of project success, including selection of HSP practices associated with suitable crop/land type, a clear and proper project design, a reasonable implementation timeline (work plan), the correct estimation of GHG emission reductions and carbon sequestration, and the potential for the project to reduce GHG emissions, sequester carbon, improve soil health, and provide other co-benefits (e.g., air and water quality improvement). The technical review committee, as developed by the task force, is made up of academic researchers, extension specialists, and farm advisors affiliated with the state's university system.
2. Applications shall be evaluated based on the following criteria. An application must receive a total score of 60 to be considered eligible for funding.

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- a. project feasibility: [40] points
 - b. project sustainability: [20] points
 - c. GHG emission reduction benefits: [20] points
 - d. soil health and environmental co-benefits: [10] points
 - e. conservation plan: [10] points
3. During the review process, applicants that provide verified matching funds during the grant duration shall be evaluated and considered accordingly.

I. Grant Award Process.

1. After receiving notification of award, each recipient will be contacted by the department, to conduct a preproject consultation. An environmental scientist will discuss with the recipient the project work plan, including management practice(s), APN, field number, acreage, materials and/or plant species (if applicable) associated with practice implementation, and budget. The purpose of the pre-project consultation is to ensure that practices and implementation methods in the funded project are compliant with the program requirements as set forth herein and to allow the department to schedule verification site visits.
2. The department shall initiate the grant agreement process with applicants selected to receive a grant award. Applicants with projects selected for an award of funds will receive a grant agreement package with specific instructions regarding award requirements including information on project implementation, verification, and payment process.
3. Once a grant agreement is executed, the grant recipient may begin implementation of the project. Recipients are responsible for the overall management of the awarded project to ensure all project activities are completed as identified in the grant agreement. Implementation must begin on or after [x], but no later than [x]. Failure to implement the project prior to [x] may result in all or any portion of the grant funding withheld or termination of the grant agreement.

J. Payment Process.

1. Grant payment for program is a flat-rate payment system on a reimbursement basis through yearly invoicing upon practice verification. The department will provide the grant recipient with the necessary grant award and invoicing documents.

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2. If selected for funding, recipients may be eligible for advance payments of up to [x] percent of the grant award as determined by the department.

K. Project Verification.

1. Recipients shall be subjected to verification that the eligible agricultural management practices are implemented in a manner consistent with the program requirements. Verification shall be conducted by environmental scientists who will conduct field evaluations by APN to verify program compliance during the grant agreement term. The department shall be responsible for the expense of verification.
2. The purpose of project verification is to determine whether and when deliverables are being met and evaluate project progress to ensure the eligible agricultural management practice(s) are completed within the grant agreement term. Recipients may be required to submit financial records and project related documentation (such as receipts for payment of services/goods) to ensure program funds are used in compliance with the grant agreement terms and conditions.

L. Post-Project Completion Requirements.

1. Execution of the grant agreement is conditional upon agreement to post-project completion requirements. Recipients are required to maintain implementation of practices incentivized through this program through the term of the grant agreement. However, benefits from implementation of practices are expected to be achieved in the long term. Recipients are encouraged to continue and/or expand these practices on their operations to achieve long-term benefits. Additionally, grant recipients are required to maintain, three years after completion of project, documentation related to their funded projects, including records documenting maintenance of the agricultural management practice(s) and any soil testing reports for the project APNs, to keep records of actual benefits achieved from the project.
2. Failure to work with the department to provide the necessary project-related documentation shall be considered non-performance. In the event of non-performance, the department may take any action deemed necessary to recover all or any portion of the grant funding. The department will contact a subset of awarded projects to collect data including, but not limited to, eligible agricultural management practice implementation and GHG reduction estimates, for three years after project completion.

M. State Audit and Accounting Requirements.

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1. Projects are subject to audit by the state annually and for three (3) years following the final payment of grant funds. If the project is selected for audit, the grantee shall be contacted in advance. The audit shall include all books, papers, accounts, documents, or other records of the grantee, as they relate to the project. All project expenditure documentation should be available for an audit, whether paid with grant funds or other funds.
2. The grantee must have project records, including source documents and evidence of payment, readily available and must provide an employee with knowledge of the project to assist the auditor. The grantee must provide a copy of any document, paper, record, etc., requested by the auditor.

N. [2020] Program Practices.

1. Implementation of eligible management practices shall be incentivized based on payment rates provided in the Healthy Soils Program Practices table developed by the [task force] for the year the given application is submitted. [Insert name of the task force] shall revise the Healthy Soils Program Practices table annually or more frequently as needed.
2. “Practice Implementation Name,” as used in the table, shall correspond to the quantification tool for GHG reduction benefit estimation discussed in Subdivision 2(d) of this section.
3. “Scenario Name,” as used in the table, shall correspond to the agricultural management practice scenario under which a practice may be funded, as determined by the [task force] [in collaboration with USDA-NRCS].
4. “Implementation Guidelines,” as used in the table, shall refer to the agricultural management practices that have additional requirements not be listed by the USDA-NRCS as a requirement in the Conservation Practice Standard (e.g., compost application rates, minimum widths for establishing some herbaceous and woody practices, or minimum tree densities for woody practices). These requirements ensure alignment with the GHG estimation methods.
5. For applications submitted during the calendar year of [2020], the program practices table shall include the following payment rates, implementation guidelines, and verification requirements:

[2020] HEALTHY SOILS Program (HSP) Practices:

Payment Rates, Implementation Guidelines and Verification Requirements

HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
Conservation Crop Rotation (USDA NRCS CPS 328)	Decrease Fallow Frequency OR Add Perennial Crop to Rotations	Basic rotation	Effective implementation of a conservation crop rotation to provide high residue and/or perennial crops.	(1) check if rotation practices followed the plan and (2) the acreage	\$19.62/Ac	3
		Specialty crops	Effective implementation of a rotation of organic or non-organic specialty crops (fruits & vegetables).	(1) check if rotation practices followed the plan and (2) the acreage	\$52.34/Ac	3
Residue and Tillage Management, No-Till (USDA NRCS CPS 329)	Intensive Till to No Till or Strip Till on Irrigated Cropland OR Non-Irrigated Cropland	No-Till or Strip-Till	(1) No tillage; (2) Planting method is no-till drilling or hand planting.	Any time of the year to look evidence of no soil disturbance	\$30.18/Ac	3
Cover Crop (USDA NRCS CPS 340)	Add Non-Legume Seasonal Cover Crop to Irrigated Cropland OR Non-Irrigated Cropland Add Legume Seasonal Cover Crop to Irrigated Cropland OR Non-Irrigated Cropland	Cover Crop: Basic	Cover crop should be allowed to grow to produce as much biomass as possible without delaying planting of the following crop.	(1) Cover crop is visible in the field at verification. (2) Receipts of cover crop seeds purchased.	\$126.44/Ac	3
		Cover Crop: multiple species	Planting multi-species cover crop (two or more species) mix includes a small grain, a legume, and may include other species such as forage sorghum, radishes, buckwheat, etc..	(1) Mixed cover crop species are visible in the field at verification. (2) Receipts of cover crop seeds purchased.	\$147.00/Ac	3
Residue and Tillage Management, Reduced Till (USDA NRCS CPS 345)	Intensive Till to Reduced-Till on Irrigated Cropland OR Non-Irrigated Cropland	Reduced-Till	(1) Mulch or vertical tillage, chiseling or disking to limit soil disturbance, or (2) Fewer tillage operations.	Must meet depth, frequency or percent area of soil disturbance.	\$32.06/Ac	3
Residue and Tillage Management, Reduced Till (USDA	Intensive Till to Reduced-Till on Irrigated Cropland OR Non-	Reduced-Till	(1) Mulch tillage, vertical tillage, chiseling or disking; (2) Fewer	Must meet depth, frequency or percent area of soil disturbance.	\$32.06/Ac	3

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
NRCS CPS 345)	Irrigated Cropland		tillage operations.			
Mulching (USDA NRCS CPS 484)	Add High Carbon Mulch to Croplands	Natural Materials	1-3 inches thickness of straw or other natural materials	(1) ≥ 60% soil surface covered; (2) Receipts of materials purchased.	\$385.70/Ac	3
		Wood Chips	2-3 inches thickness of wood chips	(1) Tree rows (≥ 4’ radius) covered; (2) Receipts of wood chips purchased.	\$1712.14/Ac	3
Strip Cropping (USDA NRCS CPS 585)	Add Perennial Cover Grown in Strips with Irrigated Annual Crops OR Non-Irrigated Annual Crops	Wind and water erosion control	(1) Two or more strips are required; (2) ≥ 50% vegetation cover must be perennial and erosion resistant crops.	(1) Number, width & length of strips; (2) species (perennial and erosion resistant)	\$2.64/Ac	1
Nutrient Management (USDA NRCS CPS 590)	Improved N Fertilizer Management on Irrigated Cropland OR Non-Irrigated Cropland – Reduce Fertilizer Application Rate by 15%	Basic NM	A nutrient management budget will be developed for each field(s) based on soil test analysis and university of California recommendation rates or crop removal rates.	Receipts and farm log of nitrogen fertilizers showing application rates is 15% less than what was used in the past 3 years or UC recommended rates.	\$14.26/Ac	3
Conservation Cover ((USDA NRCS CPS 327)	Convert Irrigated Cropland to Permanent Unfertilized Grass Cover or Grass/Legume Cover OR Convert Non-Irrigated Cropland to Permanent Unfertilized Grass Cover or Grass/Legume Cover	Introduced species	Introduced cool season perennial grass to reduce soil erosion, runoff and dust emissions.	(1) Receipts of seeds purchased; species; (3) good growth	\$203.16/Ac	1
		Introduced species with foregone income	Introduced, cool season perennial grass for organically managed lands.	(1) Receipts of seeds purchased; species; (3) good growth; (4) Previous cropland used	\$607.74/Ac	1
		Monarch species - mix	(1) Mix of native grass and forbs for specialized purposes (wildlife, pollinators or ecosystem restoration); Species not readily available and/or difficult to produce.	(1) Receipts of seeds purchased; species; (3) good growth.	\$2,222.26/Ac	1
		Monarch species - mix	A mix of native grass and forbs for specialized purposes; Species not readily available and/or difficult to	(1) Receipts of seeds purchased; species; (3) good	\$2,465.00/Ac	1

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
		with foregone income	produce.	growth.		
		Native species	Mixture of native and warm season perennial grass to reduce soil erosion, water/sediment runoff and dust emissions.	(1) Receipts of seeds purchased; species; (3) good growth.	\$280.74/Ac	1
		Native species with foregone income	Mixture of native & warm season perennial grass.	(1) Receipts of seeds purchased; species; (3) good growth.	\$701.98/Ac	1
		Pollinator species	Permanent vegetation, including a mix of native grasses, legumes, and forbs to provide habitat for pollinators.	(1) Receipts of seeds purchased; species; (3) good growth.	\$1,571.88/Ac	1
		Pollinator species with foregone income	Permanent vegetation, including a mix of native grasses, legumes, and forbs to provide habitat for pollinators.	(1) Receipts of seeds purchased; species; (3) good growth.	\$1,993.12/Ac	1
Contour Buffer Strips (USDA NRCS CPS 332)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR Unfertilized Grass/Legume Cover	Introduced Species, Foregone Income	(1) Introduced cool season perennial grass; (2) Area of strips is taken out of production.	(1) Visible: cool season perennial grass in previous cropland. (2) Receipts of seeds purchased.	\$620.10/Ac	1
		Native Species, Foregone Income	(1) Native warm season perennial grass; (2) Area of strips is taken out of production.	(1) Visible: warm season perennial grass in previous cropland. (2) Receipts of seeds purchased.	\$615.08/Ac	1
		Wildlife Pollinator, Foregone Income	(1) Three or more native warm season perennial that are pollinator friendly species; (2) Area of strips is taken out of production.	(1) Visible: ≥ 3 species of native, warm season, pollinator friendly, perennials species. (2) Receipts of seeds purchased.	\$832.26/Ac	1

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
Field Border (USDA NRCS CPS 386)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR Permanent Unfertilized Grass/Legume Cover	Field Border, Introduced Species	(1) Introduced, cool season perennial grass; (2) Around the perimeter of a crop/rangeland.	(1) Visible: cool season perennial grass. (2) Receipts of seeds purchased.	\$136.64/Ac	1
		Field Border, Native Species	Untreated, warm season, native perennial around the perimeter of an agricultural land.	(1) Visible: warm season, native perennials. (2) Receipts of seeds purchased.	\$184.88/Ac	1
		Field Border, Pollinator	Mixed species, native Forb around perimeter of agricultural lands.	(1) Visible: mixed, native forbs. Receipts of seeds purchased.	\$1,510.22/Ac	1
Filter Strip (USDA NRCS CPS 393)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR to Permanent Unfertilized Grass/Legume Cover	Filter Strip, Native species	Native, warm season perennial grass	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of seeds purchased.	\$248.54/Ac	1
		Filter Strip, Introduced species	Introduced, cool season perennial grass and/or legume mix		\$268.16/Ac	1
Forage and Biomass Planting (USDA NRCS CPS 512)	Conversion of Annual Cropland to Irrigated Grass/Legume Forage/Biomass Crops OR Conversion of Annual Cropland to Non-Irrigated Grass/Legume Forage/Biomass Crops	Nonnative high seeding rate, no lime	(1) Seeding rate: ≥ 30 lb/acre PLS (pure live seed); (2) Planting method: No-Till/grass drill.	(1) Receipts of seeds purchased; species; (3) good growth	\$313.28/Ac	1
		Nonnative standard seeding rate, no fertilizer	(1) Seeding rate: ≥ 9 lb/acre PLS (pure live seed); (2) Planting method: No-Till/grass drill	(1) Receipts of seeds purchased; species; (3) good growth	\$152.00/Ac	1
		Nonnative standard seeding rate with fertilizer	(1) Seeding rate: ≥ 9 lb/acre PLS (pure live seed); (2) Planting method: No-Till/grass drill	(1) Receipts of seeds purchased; species; (3) good growth	\$218.50/Ac	1
		Non-native high seeding rate, lime	(1) Seeding rate is ≥ 30 lb/acre PLS (pure live seed); (2) No-Till/grass drill is used to seed.	(1) Receipts of seeds purchased species; (3) good growth	\$428.20/Ac	1

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
Grassed Waterway (USDA NRCS CPS 412)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass/Legume Cover OR Convert Strips of Non-Irrigated Cropland to Permanent Unfertilized Grass /Legume Cover	Base Waterway	Waterways area measured from top of bank to top of bank. Typical practice is 1200' long, 12' bottom, 8:1 side slopes, and 1.5' depth.	(1) Success of grassed waterway with suitable vegetation; (2) Receipts of materials purchased.	\$2,164.42/Ac	1
		Base waterway with checks	Area measured from top of bank to top of bank. Fabric or stone checks installed every 100 feet along the waterway perpendicular to waterflow and 2/3 the waterway top width to reduce maintenance and provide temporary protection until vegetation is established. Fabric Checks are installed 18" deep with 12" laid over on the surface.	(1) Success of grassed waterway with suitable vegetation; (2) Receipts of materials purchased.	\$3,372.00/Ac	1
Herbaceous Wind Barriers (USDA NRCS CPS 603)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover OR to Permanent Unfertilized Grass/Legume Cover	Cool Season Perennial Species	Width of the Herbaceous Wind Barrier must be at least 2 feet.	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of seeds purchased.	\$0.14/Ft	1
Riparian Herbaceous Cover (USDA NRCS CPS 390)	Convert Irrigated Cropland to Permanent Unfertilized Grass Cover Near Aquatic Habitats; OR Convert Irrigated Cropland to Permanent Unfertilized Grass/Legume Cover Near Aquatic Habitats	Broadcast Seeding with Foregone Income	(1) Area is removed from crop production; (2) Six species mix, native Forb; (3) Existing plant community is disturbed.	(1) Visible: six or more native, pollinator friendly perennial species planted; (2) Receipts of seeds purchased.	\$3,481.40/Ac	1
		Plug Planting with Foregone income	(1) Area is removed from crop production; (2) Native aquatic plants, emergent or submerged.	(1) Visible: native, aquatic perennial species plug planted; Receipts of seedlings purchased.	\$40,689.76/Ac	1
		Combination Broadcast Seeding and Plug Planting	(1) Area is removed from crop production; (2) One species native forb and native aquatic plants, emergent or submerged.	(1) Visible: native, aquatic perennial species planted; (2) Receipts of seedlings & seeds purchased.	\$21,662.22/Ac	1

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
		with Foregone Income				
		Pollinator Cover with Foregone Income	(1) Area is removed from crop production; (2) 2-12 native forbs that bloom sequentially during the growing season and at least 2 species in bloom at any given time during the growing season.	(1) Visible: ≥ 4 native forbs bloom at different times in growing season planted in area of previous cropland. (2) Receipts of seedlings & seeds purchased.	\$4,764.60/Ac	1
Vegetative Barrier (USDA NRCS CPS 601)	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass Cover	Seeded Barrier	A strip or strips of stiff, dense vegetation is established by seeding with width ≥ 3 feet.	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of seeds purchased.	\$0.02/Ft	1
	Convert Strips of Irrigated Cropland to Permanent Unfertilized Grass/Legume Cover	Vegetative Planting	Permanent strips of stiff, dense vegetation established along the general contour of slopes with width ≥ 3 feet.	(1) Visible: perennial species planted in area of previous cropland. (2) Receipts of sprigs purchased.	\$11.34/Ft	1
Alley Cropping (USDA NRCS CPS 311)	Replace 20% of Annual Cropland with Woody Plants	Tree-planting, single row	(1) Potted or balled and burlapped hardwood tree size: 2-3 gal.	(1) Receipts of seedlings purchased; (2) species, (3) number of live plants	\$33.26/Ea	1
Hedgerow Planting (USDA NRCS CPS 422)	Replace a Strip of Cropland with 1 Row of Woody Plants	Single Row	(1) Inclusion of pollinator-friendly shrubs and perennial wildflowers; Combination of cool and warm season perennial species; (3) ≥200 plants/acre; (2) Row width ≥ 8 feet; Average height ≥ 3 feet at maturity; (4) Planting protection.	(1) Visible: ≥200 live tree/shrubs plants/acre. (2) Receipts of seedlings purchased.	\$8.58/Ft	1
	Replace a Strip of Grassland with 1 Row of Woody Plants					
Tree/Shrub Establishment	Conversion of Annual Cropland OR Grassland to a Farm	Conservation , hand	Planting density ≥ 150 trees/acre. Bare root hardwood seedling or transplant:	(1) Receipts of seedlings; (2) species, (3) number of live	\$915.3/Ac	1

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
(USDA NRCS CPS 612)	Woodlot	planting, browse protection	shrubs 6-18" tall trees 18-36" tall. Seedlings protection.	plants		
Windbreak/ Shelterbelt Establishment (USDA NRCS CPS 380)	Replace a Strip of Cropland with 1 Row of Woody Plants	1-row, trees, containers, hand planted, protected	(1) Minimum width of tree row is 8 feet; (2) Plant protection is required; (3) ≥200 plants/acre.	(1) Visible: live tree/shrubs plants. (2) Receipts of seedlings purchased.	\$1.22/Ft	1
	OR Replace a Strip of Grassland with 1 Row of Woody Plants	1-row, Tree or Shrub, Wind Protection Fence	Minimum width 8 feet for tree row and 4 feet for shrubs; Plant protection is required; (3) ≥200 plants/acre.	(1) Visible: live tree/shrubs plants. (2) Receipts of seedlings purchased.	\$1.78/Ft	1
Riparian Forest Buffer (USDA NRCS CPS 391)	Replace a Strip of Cropland Near Watercourses or Water Bodies with Woody Plants OR Replace a Strip of Grassland Near Watercourses or Water Bodies with Woody Plants	Bare-root, hand planted	General: (1) Plantings consist of hand planted bare-root shrubs and trees; (2) ≥ 35 plantings per acre; and (3) Tree protection is required. Materials: (1) Hardwood trees: 18- 36" tall; (2) Conifer trees: 1-1 (2 years old).	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$2,367.00/Ac	1
Riparian Forest Buffer (USDA NRCS CPS 391)	Replace a Strip of Cropland Near Watercourses or Water Bodies with Woody Plants OR Replace a Strip of Grassland Near Watercourses or Water Bodies with Woody Plants	Bare-root, machine planted	(1) Bare-root shrubs and trees; (2) ≥35 plants/acre; (3) Tree Protection. Materials: (1) Hardwoods: 18-36" tall; (2) Conifer: 1-1 (2 yrs old).	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$2,223.16/Ac	1
		Cuttings, Small to Medium	(1) Hand planting; (2) ≥ 35 plantings per acre; and (3) Tree protection. Materials: 1/4"-1" diameter and 24-48" long.	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$2,784.48/Ac	1
		Cuttings, Medium to Large	(1) Hand planting; (2) ≥ 35 plants/acre; (3) Trees: from 1/4-1" diameter & 24-48" long to 2-6" diameter & 6' long. (4) protection.	(1) Visible: ≥35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$7,183.68/Ac	1

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
		Small container, hand planted	(1) Shrubs and trees; (2) ≥ 35 plants/acre; (3) Tree protection. Potted shrub or tree size: 1 quart.	(1) Visible: ≥ 35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$3,749.36/Ac	1
		Small container, machine planted	(1) Planting: machine planted shrubs and trees; (2) ≥ 35 plantings per acre; and (3) Tree protection. Potted shrub/tree size: 1 quart.	(1) Visible: ≥ 35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$3,238.12/Ac	1
		Large container, hand planted	(1) Planting: hand planted shrubs and trees; (2) ≥ 35 plantings per acre; and (3) Tree protection. Potted or balled shrub or tree size: 2-3 gal.	(1) Visible: ≥ 35 live tree/shrubs plants per acre. (2) Receipts of seedlings purchased.	\$9,427.38/Ac	1
Multistory Cropping (USDA NRCS CPS 379)	Replace 20% of Annual Cropland with Woody Plants	Free trees or shrubs	For enhancement of multi-story agroforests or improvement of overstory on existing cropland.	(1) species names, (2) number of live plants	\$5.20/Ea	1
		Native shrub planting	Seedling size is no less than 1 qt.	(1) Receipts of seedlings purchased; (2) number of plants	\$9.86/Ea	1
		Native tree planting	Seedling size is no less than 1 qt.	(1) Receipts of seedlings purchased; (2) number of plants	\$9.86/Ea	1
		Non-native shrubs	(1) Bare root tree size is 6-18" tall, band pots of common species trees or shrubs, and/or (2) tree or shrub seedling size is ≥ 10 cu. in..	(1) Receipts of seedlings purchased; (2) number of e plants	\$7.74/Ea	1
		Non-native tree planting	(1) Bare root tree size 6-18" tall, band pots of common species trees or shrubs, and/or (3) Seedling containerized size is ≥ 10 cu. in..	(1) Receipts of seedlings purchased; (2) number of live plants	\$7.74/Ea	1
Prescribed Grazing	Grazing Management to Improve Irrigated Pasture	Pasture, basic	A grazing management plan by a certified professional range manager	(1) Records of grazing dates and stubble height after	\$22.06/Ac	1

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
(USDA NRCS CPS 528)	Condition OR Rangeland OR Non-Irrigated Pasture Condition	Range, basic	to enhance rangeland health & ecosystem function; optimize efficiency & economic return through monitoring & record.	grazing; (2) short term monitoring- photos and forage production; (3) sensitive area protection.	\$5.00/Ac	1
Range Planting (USDA NRCS CPS 550)	Seeding forages to improve rangeland condition	Native species broadcast	(1) Mainly native adapted perennial species (native forb, cool season and native perennial grass); (2) Seeding rate is 18 lb/acre PLS.	(1) Receipts of seeds purchased; species; (3) good growth.	\$575.56/Ac	1
		Native species high forb drilled	(1) Native adapted perennial species (native forb, cool season and perennial grass); and (2) No-till or range drill.	(1) Receipts of seeds purchased; species; (3) good growth.	\$526.38/Ac	1
		Native species low forb drilled	(1) Predominately native adapted perennial species (native forb, cool season and native perennial grass); and (2) no-till drill or range drill.	(1) Receipts of seeds purchased; species; (3) good growth.	\$351.22/Ac	1
		Nonnative species broadcast	(1) Three Species Mix - cool season and introduced perennial grass; (2) Seedbed preparation; and (3) Seeding rate is 18 lb/acre PLS.	(1) Receipts of seeds purchased; species; (3) good growth.	\$212.90/Ac	1
		Nonnative species drilled	Three Species Mix - cool season and introduced perennial grass; and No-till drill or drill to plant.	(1) Receipts of seeds purchased; species; (3) good growth.	\$169.90/Ac	1
		Shrub plugs	(1) Shrub seedling or transplant, bare root shrubs 3 to 5 feet tall; (2) Planting density: 1000 plants/acre.	(1) Receipts of shrubs purchased; (2) species; (3) good growth.	\$2,578.46/Ac	1
Silvopasture (USDA NRCS CPS 381)	Tree/Shrub Planting on Grazed Grasslands	Establish Trees, Existing Grasses	≥20 plants/acre is required.	(1) Visible: live tree/shrubs plants. (2) Receipts of seedlings purchased.	\$193.90/Ac	
Compost	Compost (C:N ≤ 11) application	Compost	Application rate must be between 3-5 tons/Acres	(1) Receipts of total compost	\$50.00/ton	3

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HSP Agricultural Management Practice Name	Practice Implementation NameError! Reference source not found. (COMET –Planner)	Scenario NameError! Reference source not found.	Implementation Guidelines	Verification Requirements	Payment Rate (\$/Unit)	Years to be paid
Application to Annual Crop (CDFA)	to annual crops	from Certified Composting Facility	Application rate must be between 6-8 tons/Acres	<p>purchased from a certified composting facility; (2) conversion factor for compost measured in volume to weight; Compost analysis report including carbon and nitrogen contents and moisture content; Must meet the total dry tonnages in the project; (5) Compost is spread or visible on the ground at verification.</p>	\$50.00/ton	3
	Compost (C:N > 11) application to annual crops					
Compost Application to Perennials, Orchards and Vineyards (CDFA)	Compost (C:N ≤ 11) application to annual crops	Compost from Certified Composting Facility	Application rate must be between 2-4 tons/Acres		\$50.00/ton	3
	Compost (C:N > 11) application to annual crops		Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
Compost Application to Grassland (CDFA)	Compost (C:N > 11) application to grazed, irrigated pasture	Compost from Certified Composting Facility	Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
	Compost (C:N > 11) application to grazed rangeland		Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
Compost Application to Annual Crop (CDFA)	Compost (C:N ≤ 11) application to annual crops	On-farm produced compost	Application rate must be between 3-5 tons/Acres		\$50.00/ton	3
	Compost (C:N > 11) application to annual crops		Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
Compost Application to Perennials, Orchards and Vineyards (CDFA)	Compost (C:N ≤ 11) application to annual crops	On-farm produced compost	Application rate must be between 2-4 tons/Acres		\$50.00/ton	3
	Compost (C:N > 11) application to annual crops		Application rate must be between 6-8 tons/Acres		\$50.00/ton	3
Compost Application to Grassland (CDFA)	Compost (C:N > 11) application to grazed, irrigated pasture	On-farm produced compost	Application rate must be between 6-8 tons/Acres	\$50.00/ton	3	
	Compost (C:N > 11) application to grazed rangeland		Application rate must be between 6-8 tons/Acres	\$50.00/ton	3	

VII. OUTCOME FOCUSED PROGRAM⁸⁰

- A. Result oriented payment system.** Unlike practice-based payment systems that award payments based on the implementation of certain healthy soil practices, this payment system awards payments based on the outcomes of the implementation of those practices. Specifically, the department, in consultation with the task force, shall design and implement a healthy soil payment system that awards financial payments to farmers and ranchers based on the amount of carbon they sequester or GHG emissions reduced over a certain period of time.
- B. Baseline.** The department, in consultation with the task force, shall conduct initial baseline measurements for all program participants to establish each participant's (a) soil carbon content and (b) overall operational GHG emissions prior to entering the program. In consultation with the task force, the department shall also determine the average operational GHG emissions per agricultural acre. At the conclusion of each programmatic year, the department, in consultation with the task force, shall re-measure the soil carbon content and operational GHG emissions of each program participant, quantifying the difference between the pre-program measurement and the post-program measurement.
- C. Payment scheme [option 1].**
- 1. Net-zero carbon outcomes.** Program participants who, over the course of the program, generate net-zero or negative GHG emissions across the participant's given operation shall be awarded [the highest financial payment as determined by the department]. The operational emission calculation shall account for both the GHG emissions produced by the operation (e.g., fossil fuel fired tractors) and the amount of carbon sequestered in the operation's soils.
 - 2. Below state average outcomes.** Program participants who, over the course of the program, generate GHG emissions across the participant's given operation that are lower than the state's average operational GHG emissions per agricultural acre shall be awarded [the medium-sized financial payment as determined by the department].
 - 3. Above state average outcomes.** Program participants who, over the course of the program, generate GHG emissions across the participant's given operation that are higher than the state's average operational GHG emissions per agricultural acre shall be awarded [the lowest financial payment as determined by the department].
- D. Payment scheme [option 2].** At the conclusion of each programmatic year, the department shall pay each program participant for the difference between the pre-program GHG operational measurement and the post-program GHG operational measurement. Program

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participants that reduce their operational GHG emissions by the conclusion of the programmatic year shall receive \$[insert] per ton of GHGs reduced.

- E. Permanence.** The department, in consultation with the task force, shall implement mechanisms and methods to ensure that the GHG emission reductions achieved through this outcome-focused program are not reversed by future land-use changes.

VIII. FUNDING

A. Healthy soils program fund⁸¹

There shall be established and set upon the books of the state a separate fund to be known as the [State] Healthy Soils Program Fund (“the program fund”). The fund shall be administered by the [department director].

1. **Appropriation.** Notwithstanding any general or special law to the contrary, there shall be credited to the fund (a) any revenue subject to appropriation from [specific fund(s) to draw from, e.g. Cap-and-Trade, Gaming, etc.⁸²], (b) any revenue subject to appropriations or other money authorized by the legislature and specifically designated to be credited to the fund, (c) any revenue generated by the mechanisms outlined in subsections [5-7] of this section, and (d) any gifts, grants, private contributions, investment income earned by the fund’s assets, and any other sources of funds so designated. No expenditure from the fund shall cause the fund to be in deficiency at the close of the fiscal year. Money in the fund at the end of the fiscal year shall not revert to the General Fund and shall be available for expenditure in the subsequent year.
2. **Existing funding sources.**⁸³ The program fund shall be created and maintained with funds made available from existing resources within the department to the extent they are available. The task force shall additionally identify other funding sources that may be used for the program, including state, federal, and private sources.
3. **Initial allocation.** The sum of [initial allocation] dollars shall be credited to the program fund, upon appropriation by the Legislature, from the [General or other] Fund.
4. **Use of funds.** Amounts credited to the fund shall be used to further the purposes of the Healthy Soils Program, without further appropriation, for the costs associated with administering and implementing the program and may also be used to provide grants or loans on a competitive basis to public, private and charitable entities to finance projects in furtherance of the Healthy Soils Program, as well as tax credits to individuals and corporations in furtherance of the Healthy Soils Program. Expenditures from the fund for this purpose shall complement and not replace existing local, state, private or federal funding for related training and educational programs.

5. **Property tax increase.**⁸⁴ [Relevant tax code section(s)] is amended to insert the following:
 - a. [OPTION 1] Any land designated for agricultural use [above a certain acreage] that fails to adopt at least [number] of healthy soil practices, as defined by the task force, by January 1, [year] shall be assessed at its market value, rather than its value based on the land's capacity to produce agricultural products.
 - b. [OPTION 2] Any land designated for agricultural use [above a certain acreage] that fails to adopt at least [number] of healthy soil practices by January 1, [year] will be assessed at its value based on the land's capacity to produce agricultural products, plus [insert number]% of the difference between the market value of the land and the value of the land based on its capacity to produce agricultural products.⁸⁵
 - c. [Insert percentage] of revenue collected by the [state revenue department] under this section shall be credited to the Healthy Soils Program fund.
 - d. Individuals and corporations paying property tax on any agricultural land must submit proof of compliance with subsection (a/b) by [date] in order to maintain the land appraisal and the land's value based on its capacity produce agricultural products.
 - e. Individuals and corporations paying tax on any land subject to this subsection may petition the [State Controller] to maintain the assessed value of the land based on its capacity to produce agricultural products. The individual or corporation must demonstrate that the increased property tax payment would create an unreasonable tax burden. Petitions must be filed with the [state revenue department] by the taxpayer within 30 days of receiving the finalized property assessment and notice of property taxes owed.
6. **Fertilizer fee**⁸⁶
 - a. A Healthy Soils fertilizer fee of [insert number] cents per ton shall be paid to the department for all fertilizers or soil conditioners sold or distributed in this state. For peat or peat moss, the inspection fee shall be [insert number of cents] per cubic yard. This fee does not apply to registered specialty fertilizers or soil conditioners sold or distributed only in packages of 10 pounds or less.
 - b. Payment of the inspection fee shall be made on the basis of tonnage reports setting forth the number of tons of each grade of fertilizer and soil conditioner and the number of cubic yards of peat or peat moss sold or distributed in this state. The reports shall cover the periods of the year and be made in a manner specified by the director in rules, and

shall be filed with the department not later than 30 days after the close of each period. The time may be extended for cause for an additional 15 days only on written request to, and approval by, the department. Remittance to cover the inspection fee shall accompany each tonnage report. Payments due of less than \$5.00 are waived, and refunds of less than \$5.00 will not be processed, unless requested in writing. For any report not filed with the department by the due date, a penalty of \$50.00 or 10% of the amount due, whichever is greater, shall be assessed. Unpaid fees and penalties constitute a debt and become the basis of a judgment against the licensee. Records upon which the statement of tonnage is based, including those described in this section, are subject to department audit.

- c. When more than 1 person is involved in the distribution of fertilizer or soil conditioners, the last person who is licensed or has the fertilizer or soil conditioner registered and who distributes to a nonlicensee or nonregistrant is responsible for reporting the tonnage and paying the inspection fee.
- d. The Healthy Soils fertilizer fee will be paid in addition to any existing inspection fees due on the purchase of fertilizers, soil conditioners, peat or peat moss.
- e. The fees collected by the department under this section, including any interest or dividends earned, shall be forwarded to the state treasurer for deposit into the Healthy Soils Program fund.
- f. The fee shall take effect beginning [insert date].

7. Pesticide fee⁸⁷

- a. Any person required to register a pesticide in the state shall pay an annual Healthy Soils fee to the department for each product to be registered. The Healthy Soils fee is [insert dollar amount] per product.
- b. The fee shall be due in the office of the director before July 1.
- c. The fees collected under this section, including any interest or dividends earned, shall be forwarded to the state treasurer for deposit into the Healthy Soils Program fund.
- d. The fee shall take effect beginning [insert date].

8. Additional fees. The task force may recommend additional fees on agricultural practices or products which have a detrimental impact on overall soil health. The department may assess the impact and projected revenue of such fees and shall include any

recommendations to the director and the legislature each year. The proposed fees collected shall be forward to the state treasurer for deposit into the Healthy Soils Program fund.

Financing tools. The department shall utilize the following financing tools to provide financial support to projects in furtherance of the Healthy Soils Program:

9. **Healthy soils grant program.**⁸⁸ The department, in consultation with the task force, shall establish a Healthy Soils grant program. The program will be supported by the Healthy Soils Program Fund and will support the activities described in the Act's grant program. The grants shall be distributed pursuant to the provisions set forth in this Act.
10. **Healthy soils loan program.**⁸⁹ The department shall administer a Healthy Soils loan program to support the adoption of healthy soils practices.
 - a. **Initial Allocation.** Within the Healthy Soils Program Fund, [insert amount] shall be designated to provide the loans described in this section.
 - b. **Purpose.** For a loan made pursuant to this section, the department shall expend the allocated funds to provide loans to public and private entities for in-state infrastructure projects or other projects that increase capacity for carbon sequestration in soils and increase overall soil health by any of the practices described in the grant program of this Act.
 - c. **Loan Terms.** For a loan made pursuant to this section, both of the following apply:
 - (i) The terms and conditions of an approved loan shall be specified in a loan agreement and related documents between the borrower and the department. These terms and conditions shall include reporting requirements that include, but are not limited to, reporting the information specified in [any relevant code section(s) about expenditures/reporting requirements].
 - (ii) The department shall approve only those loan applications that demonstrate the applicant's ability to repay the loan.
 - d. **Additional Requirements.** The department may establish additional requirements that it determines to be necessary or useful to achieve the revolving loan program's objectives, including, but not limited to, ensuring repayment ability.

- e. **Repayment and Expansion.** Payments collected by the department under this section, including any interest or dividends earned, shall be forwarded to the state treasurer for deposit into the Healthy Soils Program fund. The director, in consultation with the task force, may adjust the annual program fund allocation for the loan program based on the projected revenues from outstanding loans made under this section.

11. Healthy soils practices tax credit.⁹⁰ [Relevant revenue code section(s)] is amended to read the following:

- a. **Allowance of credit.** A taxpayer that is an agricultural business that produces farm products shall be allowed a credit against the income tax for the adoption of healthy soils practices.
- b. **Value of tax credit.**⁹¹ Such credit shall be calculated based on the economic value of the healthy soils practice as determined by the task force, in consultation with the [department director].
- c. **Certification required.** The taxpayer shall attach to its tax return its final certificate of eligibility issued by the department. In no event shall the taxpayer be allowed a credit greater than the amount of the credit listed on the final certificate verifying the emissions reductions to be credited to the taxpayer.
- d. **Carryover credit.** If the amount of the credit allowable under this subdivision for any taxable year shall exceed the taxpayer's tax for such year, any amount of credit not deductible in such taxable year may be carried over to the following [insert number] years, and may be deducted for the taxpayer for such year.
- e. **Applicability.** The credit will be made available to eligible taxpayers in the assessment year following the published tax credit rate by the task force.

12. Conservation easement tax credit.⁹² [Relevant revenue code section(s)] is amended to read the following:

- a. **Allowance of credit.** For taxable years beginning on or after January 1, [Year after act enacted], there shall be allowed as a credit against the tax liability imposed by [relevant tax code section(s)], an amount equal to [value greater than or equal to 50] percent of the fair market value of any land or interest in land located in [state] that is conveyed for the purpose of agricultural and forestal use, open space, natural resource, and/or biodiversity conservation, or land, agricultural, watershed and/or historic preservation, as an unconditional donation by the landowner/taxpayer to a public or private conservation agency eligible to hold such land and interests therein for conservation or preservation purposes.

- (i) If the State or an instrumentality thereof operates a facility on a conveyance, including charging fees for the use of such facility, such operation shall not disqualify the conveyance from eligibility for the tax credit, so long as any fees are used for conservation or preservation purposes.
 - (ii) If the State or an instrumentality thereof enters into an agreement with a third party to lease or manage a facility on a conveyance, the fact that such third party is operated primarily as a business with intent for profit shall not disqualify the conveyance from eligibility for the tax credit, so long as such agreement is for conservation or preservation purposes.
- b. **Fair market value.** The fair market value of qualified donations made under this section shall be determined by the appraisal methods defined in [relevant revenue code section(s)].
- c. **Limit of tax credit.** The amount of the credit that may be claimed by each taxpayer shall not exceed [insert rules about credit caps, e.g. \$50,000 in year one, \$60,000 in year two, etc.]. In addition, for each taxpayer, in any one taxable year the credit used may not exceed the amount of individual, fiduciary or corporate income tax otherwise due. Any portion of the credit that is unused in any one taxable year may be carried over for a maximum of [insert max years] consecutive taxable years following the taxable year in which the credit originated until fully expended. A credit shall not be reduced by the amount of unused credit that could have been claimed in a prior year by the taxpayer but was unclaimed.
- d. **Qualified donations.** Qualified donations shall be eligible for the tax credit herein described if such donations are made to the [State/Commonwealth] of [state], an instrumentality thereof, or a charitable organization described in § 501(c)(3) of the United States Internal Revenue Code of 1986, as amended, if such charitable organization (i) meets the requirements of § 509(a)(2) or (ii) meets the requirements of § 509(a)(3) and is controlled by an organization described in § 509(a)(2).
- e. **Transfer of tax credits.** Any taxpayer who receives the tax credit herein described will retain the right to sell such credit to another taxpayer. Any taxpayer to whom a credit has been transferred may use such credit for the taxable year in which the transfer occurred and unused amounts may be carried forward to succeeding taxable years, but in no event may such transferred credit be used more than [insert number] years after it was originally issued by the Department or in any taxable year of such taxpayer that ended prior to the date of transfer. Such a taxpayer may use such credit for the taxable year in which the transfer occurred and unused amounts may be carried forward to succeeding taxable years, but in no event may such transferred credit be used more than [insert number] years after it was originally issued by the Department or in any taxable year of such taxpayer that ended prior to the date of transfer.

- f. **Application.** The taxpayer must submit to the department an application for the tax credit. The application shall be developed by the department. All credits shall be issued in the order that each complete application is filed. Applications must be postmarked by [date].
- g. **Annual Allocation.** Tax credits shall be issued on a calendar year basis, and in no case shall the Department issue more than the maximum allowed for the calendar year. The maximum amount of credits that may be issued in a calendar year shall be [annual budget] plus any credits previously issued under this article but subsequently disallowed or invalidated by the Department. Credits previously issued but subsequently disallowed or invalidated shall be reissued in a subsequent calendar year.

13. **Healthy soils equipment tax credit.**⁹³ [Insert revenue code section(s)] is amended to include the following:

- a. **Allowance of credit.** Any taxpayer shall be allowed a credit against the tax imposed by [insert revenue code section(s)] of an amount equaling [insert number] percent of all expenditures made for the purchase and installation of equipment used in adopting a healthy soils practice, as determined by the task force.
- b. **Value of credit.** The amount of such credit shall not exceed [dollar amount] or the total amount of tax imposed by [the state revenue code], whichever is less, in the year of purchase. If the amount of such credit exceeds the taxpayer's tax liability for such tax year, the amount which exceeds the tax liability may be carried over for credit against the income taxes of such individual in the next five taxable years until the total amount of the tax credit has been taken.
- c. **Partnerships and Corporations.** For purposes of this section, the amount of any credit attributable to the purchase and installation of carbon farming equipment by a partnership or electing small business corporation (S corporation) shall be allocated to the individual partners or shareholders in proportion to their ownership or interest in the partnership or S corporation.

14. **Healthy soils property tax reduction.**⁹⁴ [Relevant tax code section(s)] is amended to read the following:

- a. **[OPTION 1] Healthy Soils Reduction.** Any land designated for agricultural use which employs a healthy soils practice as defined in Section IV will be eligible for a [insert percentage or dollar amount] reduction in assessed property taxes.
- b. **[OPTION 2] Healthy Soils Assessment.** Any land designated for agricultural use which employs a healthy soils practice as defined in Section IV shall be assessed at its [insert percentage] of its value to produce agricultural goods,

rather than its market value. Any relevant property taxes owed against the property will use this assessment as its base value.

- c. **Proof of adoption.** To qualify for the tax exemption, the taxpayer shall provide to the property tax assessor a certificate of adoption (“certificate”) provided by the department. The department shall establish the procedure by which taxpayers may apply for a certificate. The procedure shall verify that the taxpayer has adopted a healthy soils practice.
- d. **Carryover of credit.**⁹⁵ The taxpayer may apply the tax reduction for any one tax year within three years of the date of issuance of the certificate.

IX. TASK FORCE.

- A. **Creation of task force.** The [department/secretary of agriculture] shall convene a [insert number]-member task force to advise and assist farmer, ranchers, and federal, state, and local government agencies on issues relating to healthy soil practices. The task force shall review data on the impact that agriculture has on the environment and recommend to the department and appropriate state agencies data that the task force approves as scientifically valid. Based on that data, the department shall identify and study agricultural practices, public land use policies, and on-farm management practices that would increase climate resiliency and improve carbon sequestration in the state, advising the department on those findings.
- B. **Composition of task force.** The task force shall consist of the following voting members, [all of whom shall be highly qualified and professionally active or engaged in the conduct of scientific research on healthy soils]:
 - 1. Two representatives of natural resources districts in the state, appointed by [the secretary/Governor];
 - 2. [Two] academic experts in agriculture and natural resources in the state, appointed by [the secretary/Governor];
 - 3. [Six] representatives from production agriculture, including at least two producers that are using healthy soil practices, appointed by [the secretary/Governor];
 - 4. Two representatives from agribusiness, appointed by [the secretary/Governor]; and
 - 5. Two representatives from environmental organizations in the, appointed by [the secretary/Governor].

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6. The [secretary/Governor] may also appoint, in consultation with the task force, ex officio nonvoting members to the task force.⁹⁶

C. [Alternative] composition of task force.

1. Five members shall be appointed by the [secretary/Governor] as follows:
 - a. At least two members shall have a minimum of five years of training and experience in the field of agriculture and shall represent production agriculture.
 - b. At least one member shall have training and field experience in on-farm management practices that reduce greenhouse gas emissions, sequester carbon, or both.
 - c. At least one member shall be certified as a producer pursuant to the federal Organic Foods Production Act of 1990 (7 U.S.C. Sec. 6501 et seq.).
 - d. At least one member shall have technical expertise in agricultural conservation planning and management.
2. Two members shall be appointed by the [Secretary for Environmental Protection.] One member, who has a minimum of five years of training and experience in the field of human health or environmental science, and another member, who has expertise in greenhouse gas emissions reductions practices related to agriculture, shall be appointed by the [Secretary for Environmental Protection.]
3. One member, who have has a minimum of five years of training and experience in the field of resource management, shall be appointed by the [Secretary of the Natural Resources Agency].⁹⁷

- D. Term of task force members.** Of the members first appointed to the task force, [insert] shall serve for a term of two years and [insert] shall serve for a term of three years, as determined by lot. Thereafter, members shall be appointed for a term of three years.⁹⁸
- E. Committees.** The task force may establish ad hoc committees, which may include professionals, scientists, or representatives of nongovernmental entities, to assist it in performing its functions.
- F. Update science.** In light of the evolving science on decarbonization in the agricultural sector and the best means of measuring carbon intake in soils at scale, the task force shall update, on an annual basis, the state’s healthy soils program—including the incentive

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payment criteria and the associated compliance certification process—using the best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices.⁹⁹

- G. Benchmarks.** The task force shall work with public and private stakeholders to establish short- and long-term benchmarks for increasing carbon sequestration in the State’s agricultural and natural environment.
- H. Identification and removal of barriers.** The task force shall identify barriers to the adoption of healthy soils practices (e.g., lack of a reliable market for cover crops). The task force shall work with the department and other applicable local, state, and federal agencies to removing those barriers (e.g., facilitating access to regional, national, or international markets for cover crops when local markets do not exist). Within eighteen (18) from the enactment of this Act, the task force shall prepare a report to the state legislature on its work to identify and remove barriers to the adoption of healthy soils practices. The task force shall prepare subsequent reports every three (3) thereafter.
- I. Tenant farmers.** The task force shall identify ways for all farmers—those who own their farm and/or rangeland and those who lease their farm and/or rangeland—to participate in the program.
- J. Recommendations.** The task force shall make recommendations to the legislature and governor on measures that would increase climate resiliency, build healthy soils, or provide greenhouse gas benefits.¹⁰⁰

¹ See Gowda, P., J.L. Steiner, C. Olson, M. Boggess, T. Farrigan, and M.A. Grusak, 2018: Agriculture and Rural Communities. In *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, pp. 391–437. doi: 10.7930/NCA4.2018.CH10, <https://nca2018.globalchange.gov/chapter/10/>.

² NE LB283 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB283.pdf>) (direct quote).

³ NE LB283 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB283.pdf>) (direct quote w minor modifications).

⁴ NE LB283 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB283.pdf>) (direct quote w minor modifications).

⁵ NYS Climate Resilient Farming (CRF) Program (<https://www.nys-soilandwater.org/programs/crf.html>) (direct quote w minor modifications).

⁶ Defined as “farming and grazing practices that, among other benefits, reverse climate change by rebuilding organic matter in soil and restoring degraded soil biodiversity, resulting in carbon drawdown, improved retention of water in the soil, and improved water quality.” VT H.903 (<https://legislature.vermont.gov/bill/status/2018/H.903>).

⁷ VT H.903 (<https://legislature.vermont.gov/bill/status/2018/H.903>) (direct quote).

⁸ OK 27A-3-4-101 (https://www.ok.gov/conservation/Agency_Divisions/Water_Quality_Division/WQ_Carbon/Carbon_Sequestration_Enhancement_Act.html) (direct quote).

⁹ NE LB243 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB243.pdf>) (direct quote w minor modifications).

¹⁰ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks*, <https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks> (last updated Apr. 12, 2018).

¹¹ Intergovernmental Panel on Climate Change, *Climate Change 2013: The Physical Science Basis* 714 (2014). Table 8-7 presents these and other “global warming potential” values.

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- ¹² EPA, *Understanding Global Warming Potentials*, <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>.
- ¹³ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, at 5-1 (2018) (EPA 430-R18-003); EPA, *Greenhouse Gas Emissions From a Typical Passenger Vehicle* (2014) (a typical passenger vehicle emits 4.7 metric tons of carbon dioxide annually).
- ¹⁴ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, at 5-21, 5-22 (2018) (EPA 430-R18-003).
- ¹⁵ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, at ES-7 tbl. ES-2, 5-2 tbl. 5-1 (2018) (EPA 430-R18-003).
- ¹⁶ EPA, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2016*, at 5-2 tbl. 5-1 (2018) (EPA 430-R18-003).
- ¹⁷ NYS Climate Resilient Farming (CRF) Program (<https://www.nys-soilandwater.org/programs/crf.html>) (direct quote w minor modifications).
- ¹⁸ NYSH Roadmap, p. 15 (https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2019/02/NYSH_roadmap_2019feb15_web-23n3qcx.pdf) (modified language).
- ¹⁹ NYSH Roadmap, p. 15 (<https://blogs.cornell.edu/soilhealthinitiative/2019/02/13/new-york-soil-health-roadmap-2019/#.XRvcdUxFxaR>) (direct quote).
- ²⁰ CA SB1350 (https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB1350) (direct quote w minor modifications).
- ²¹ UT HCR008 (<https://le.utah.gov/~2015/bills/static/HCR008.html>) (direct quote w minor modifications). *See also* OK 27A-3-4-101 (https://www.ok.gov/conservation/Agency_Divisions/Water_Quality_Division/WQ_Carbon/Carbon_Sequestration_Enhancement_Act.html).
- ²² UT HCR008 (<https://le.utah.gov/~2015/bills/static/HCR008.html>) (direct quote w minor modifications).
- ²³ WA SB 5947 (<http://lawfilesex.leg.wa.gov/biennium/2019-20/Htm/Bills/Senate%20Bills/5947-S2.htm>) / HB 2095 (<http://lawfilesex.leg.wa.gov/biennium/2019-20/Pdf/Bills/House%20Bills/2095.pdf>) (direct quote).
- ²⁴ WA SB 5947 (<http://lawfilesex.leg.wa.gov/biennium/2019-20/Htm/Bills/Senate%20Bills/5947-S2.htm>) / HB 2095 (<http://lawfilesex.leg.wa.gov/biennium/2019-20/Pdf/Bills/House%20Bills/2095.pdf>) (direct quote).
- ²⁵ MD Fiscal note http://mgaleg.maryland.gov/2017RS/fnotes/bil_0003/hb1063.pdf
- ²⁶ CA SB1350 (https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB1350) (direct quote).
- ²⁷ NE LB243 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB243.pdf>) (direct quote). *See also* CO Bill 10 (https://leg.colorado.gov/sites/default/files/images/committees/2017/bill_10_19-0140.pdf) (referencing drought-risk mitigation potential).
- ²⁸ UT HCR008 (<https://le.utah.gov/~2015/bills/static/HCR008.html>) (direct quote w minor modifications).
- ²⁹ NY A02718 (https://nyassembly.gov/leg/?default_fld=&leg_video=&bn=A02718&term=2019&Summary=Y&Text=Y) (direct quote w minor modifications).
- ³⁰ UT HCR008 (major modifications). *See also* NYSH Roadmap.
- ³¹ NE LB243 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB243.pdf>) (direct quote). *See also* NYSH Roadmap (https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2019/02/NYSH_roadmap_2019feb15_web-23n3qcx.pdf)
- ³² WA Soil Health Initiative (<http://csanr.wsu.edu/program-areas/soil-health-initiative/>) (direct quote).
- ³³ HI HB 1578 (<https://legiscan.com/HI/text/HB1578/2017>) (direct quote w minor modifications).
- ³⁴ CO Bill 10 (https://leg.colorado.gov/sites/default/files/images/committees/2017/bill_10_19-0140.pdf) (direct quote).
- ³⁵ IL SB1980 (<http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=007004050K2>) / HB2737 (<http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=007004050K>) (direct quote w minor modifications).
- ³⁶ IL SB1980 (<http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=007004050K2>) / HB2737 (<http://www.ilga.gov/legislation/ilcs/fulltext.asp?DocName=007004050K>) (direct quote w minor modifications).
- ³⁷ CA SB1350 (https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB1350) (direct quote w minor modifications).
- ³⁸ Ribaud, Marc et al., “Nitrogen in Agricultural Systems: Implications for Conservation Policy” (Sept. 11), USDA Economic Research Report No. (ERR-127) (<https://www.ers.usda.gov/publications/pub-details/?pubid=44919>).
- ³⁹ Sobota, Daniel J. et al., “Cost of reactive nitrogen release from human activities to the environment in the United States” (Feb. 17, 2015), IOP Science (<https://iopscience.iop.org/article/10.1088/1748-9326/10/2/025006/meta;jsessionid=2D65E22B7A06785FCFF66ECE11C3453F.c5.iopscience.cld.iop.org>).
- ⁴⁰ EPA, Nutrient Pollution, The Effects: Economy (<https://www.epa.gov/nutrientpollution/effects-economy>).

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- ⁴¹ NYSH Roadmap (https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2019/02/NYSH_roadmap_2019feb15_web-23n3qcx.pdf) (modified language). *See also* CO Bill 10 (https://leg.colorado.gov/sites/default/files/images/committees/2017/bill_10_19-0140.pdf).
- ⁴² NE LB243 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB243.pdf>) (direct quote w minor modifications).
- ⁴³ The Nature Conservancy. “rethink Soil: A Roadmap for U.S. Soil Health.” (November 1, 2016) (<https://www.nature.org/content/dam/tnc/nature/en/documents/rethink-soil-executive-summary.pdf>).
- ⁴⁴ Ketterings, Q.M., S.N. Swink, S.W. Duiker, et al., Integrating cover crops for nitrogen management in corn systems on northeastern U.S. dairies, *Agronomy Journal*, 2015, 107, at 1,371.
- ⁴⁵ National Association of Conservation Districts, Soil Health Research (<https://www.nacdnet.org/soil-health-research/>).
- ⁴⁶ NE LB243 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB243.pdf>) (direct quote w minor modifications).
- ⁴⁷ NE LB283 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB283.pdf>) (direct quote w minor modifications). *See also* Understanding and Assessing Climate Change: Implications for Nebraska, a 2014 report by the University of Nebraska-Lincoln; the Implications of Climate Change for Nebraska: Summary Report of Sector-Based Roundtable Discussions, 2015; HI HB 1578 (<https://legiscan.com/HI/text/HB1578/2017>).
- ⁴⁸ NYSH Roadmap (https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2019/02/NYSH_roadmap_2019feb15_web-23n3qcx.pdf) (direct quote).
- ⁴⁹ NYSH Roadmap (https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2019/02/NYSH_roadmap_2019feb15_web-23n3qcx.pdf) (modified language).
- ⁵⁰ NYSH Roadmap (https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2019/02/NYSH_roadmap_2019feb15_web-23n3qcx.pdf) (direct quote w minor modifications).
- ⁵¹ VT H.903 (<https://legislature.vermont.gov/bill/status/2018/H.903>) (direct quote w minor modifications).
- ⁵² HI HB 1578 (<https://legiscan.com/HI/text/HB1578/2017>) (direct quote w minor modifications). *See also* OK 27A-3-4-101 (https://www.ok.gov/conservation/Agency_Divisions/Water_Quality_Division/WQ_Carbon/Carbon_Sequestration_Enhancement_Act.html).
- ⁵³ NYSH Roadmap (https://cpb-us-e1.wpmucdn.com/blogs.cornell.edu/dist/6/7573/files/2019/02/NYSH_roadmap_2019feb15_web-23n3qcx.pdf) (direct quote).
- ⁵⁴ VT H.525 (<https://legislature.vermont.gov/Documents/2020/Docs/ACTS/ACT064/ACT064%20As%20Enacted.pdf>) (direct quotes w minor modifications).
- ⁵⁵ Some states may elect to locate the healthy soils program with the state’s department of natural resources/environmental protection. Illinois, for example, has tabled a bill that would give the Department of Natural Resources (not the Department of Agriculture) the authority to establish soil health practices on leases of land used for agricultural purposes.
- ⁵⁶ WA SB 5947 (direct quote) (<http://lawfilesexet.leg.wa.gov/biennium/2019-20/Htm/Bills/Senate%20Bills/5947-S2.htm>).
- ⁵⁷ CA SB-1350 (https://leginfo.legislature.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB1350).
- ⁵⁸ HI HB1578 (<https://legiscan.com/HI/text/HB1578/id/1605370/Hawaii-2017-HB1578-Amended.html>).
- ⁵⁹ Given the ease with which the carbon sequestration benefits of certain practices can be undone, the legislation should place higher priority on practices with greater permanence. While no-till fields can later be tilled and cover crops abandoned, other practices that reduce current GHG emissions achieve a permanent savings. Similarly, incorporating trees—via agroforestry, silvopasture, buffer zones, perennial crops, and the like—is much closer to permanent and irreversible, and easier to monitor.
- ⁶⁰ NM HB 0204 (<https://www.nmlegis.gov/Sessions/19%20Regular/final/HB0204.pdf>) (direct quotes w minor modifications).
- ⁶¹ VE H.525, (<https://legislature.vermont.gov/Documents/2020/Docs/ACTS/ACT064/ACT064%20As%20Enacted.pdf>).
- ⁶² Preliminary studies suggest that solar PV panel projects can increase biomass growth on farmland for sheep and other livestock. *See* <https://pv-magazine-usa.com/2018/11/12/solar-panel-increase-sheep-and-cow-grasses-by-90/> (Nov. 12, 2018).
- ⁶³ NM HB204 (<https://www.nmlegis.gov/Sessions/19%20Regular/final/HB0204.pdf>).
- ⁶⁴ NM HB204 (<https://www.nmlegis.gov/Sessions/19%20Regular/final/HB0204.pdf>).
- ⁶⁵ *See* MD’s Prince George Soil Conservation District’s rental equipment program for an example of a successful rental equipment program (<http://pgscd.org/rental.html>). The cost of new equipment and equipment rentals can also be factored into the grant application detailed in Section VII.
- ⁶⁶ *See, e.g.*, the COMET-Planner, an online tool developed by USDA and Colorado State University that provides approximate net emissions reductions for a number of practices recognized by the USDA Natural Resources Conservation Service (NRCS); Amy Swan et al., COMET-Planner: Carbon and Greenhouse Gas Evaluation for NRCS Conservation Practice Planning.

⁶⁷ Jim Monke, Congressional Research Service, Agricultural Research: Background and Issues (2016).

⁶⁸ We modeled this approach on NB LB729 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Intro/LB729.pdf>).

⁶⁹ This date will likely be extended as the program progresses, but including may be advisable until funding is secured for additional iterations of the program.

⁷⁰ This date should be set far enough in the future to incentivize new crop rotations in the given state—that is, crop rotations that would not have occurred sans this incentive.

⁷¹ NRCS Conservation Practice Standard, Conservation Crop Rotation, Code 328, CA (August 2016).

⁷² This could also be structured as a retroactive payment, such that the farmer would receive the payment only after the cover crop was planted and certified as meeting the program’s qualifications.

⁷³ Several other practices could be incentivized through the same structure (e.g., no-till or low-till farming, strip and buffer cropping, rotational grazing), where the number of acres covered by the practice is multiplied by a pre-established number.

⁷⁴ We modeled this approach on California’s 2018 Healthy Soils Program, Incentives Program, which was developed pursuant to CA SB-1350 (https://www.cdfa.ca.gov/oefi/healthysoils/docs/2018-HSPIncentives_RGA.pdf).

⁷⁵ Wording/inclusion of this will hinge on how the verification of practice versus outcome is explicated in the findings and objectives sections.

⁷⁶ An alternative would be to develop a quantification tool that applicants could access from directly from the web. California’s version of this was developed by the California Air Resources Board, available [here](#).

⁷⁷ In order to prevent this baseline requirement from disincentivizing farmers from submitting applications, the program could offer a free/discounted service by the state to perform the baseline certification. The application fee could cover part of this cost as well. Subdivision 3, Technical Assistance with Applications, is meant to address this issue.

⁷⁸ The language here should be adjusted per the language used in the findings section—namely, whether the language focuses explicitly on GHG and climate change mitigation or whether it focuses on implicit climate language like “organic content of the soil.” See New Mexico legislation for the latter.

⁷⁹ The number of years forecasted should be adjusted based on allocated funding secured at legislation implementation outset.

⁸⁰ This type of outcome based approach will become more viable and attractive as soil carbon quantification methods improve.

⁸¹ MA H873 (<https://malegislature.gov/Bills/191/HD3065>) (adapted)

⁸² In the MA bill, this is the lottery fund (Gambling Economic Development Fund)

⁸³ CA SB859 (http://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB859) (adapted)

⁸⁴ This section is not present in any current legislation. It reflects our attempt to remove the preferential property tax treatment that farms receive unless they participate in the Healthy Soils program. It is designed to only target large farms, through either 1) removing preferential treatment altogether or 2) reducing preferential treatment. Based on how properties are assessed within the given state, substantial changes may need to be made to fit with the established assessment procedures.

⁸⁵ Both Option 1 and 2 could be structured so as to increase the number of practices required over time. Option 2 could also be structured so as to increase increase value over time – i.e. to go from a 10% increase in year 1, 15% in year 2, etc.

⁸⁶ MI Act 451 (1994) ([https://www.legislature.mi.gov/\(S\(2f2na1pigwojgf0vib12h541\)\)/mileg.aspx?page=getObject&objectName=mcl-324-8506](https://www.legislature.mi.gov/(S(2f2na1pigwojgf0vib12h541))/mileg.aspx?page=getObject&objectName=mcl-324-8506)) (adapted)

⁸⁷ MI 451 (1994) (<http://198.109.173.11/documents/mcl/pdf/mcl-451-1994-II-2-87.pdf>) (adapted)

⁸⁸ The purpose and implementation of the grant program is primarily outlined in the Directives section [Section IV(C)] of the bill.

⁸⁹ CA SB-859 (http://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB859) (adapted)

⁹⁰ NY A02718 (https://nyassembly.gov/leg/?default_fld=&leg_video=&bn=A02718&term=2019&Summary=Y&Actions=Y&Committee%26nbspVotes=Y&Text=Y) (adapted)

⁹¹ This could be drawn from Section IV (C)

⁹² VA Land Conservation Incentives Act of 1999 (<https://law.lis.virginia.gov/vacode/title58.1/chapter3/section58.1-512/>) (adapted)

⁹³ VA 984 (<https://lis.virginia.gov/cgi-bin/legp604.exe?021+ful+HB984>) (adapted)

⁹⁴ This tax reduction is also not present in any current Healthy Soils bills. It is designed to incentivize farmers to adopt healthy soils practicing by reducing property tax overall, or lowering the property’s assessed value. This section could be employed separately from or in tandem with the Property Tax Increase in Section IV(A).

⁹⁵ This provision would likely only apply if Option 1 is adopted.

This document has been prepared as part of the implementation project of Legal Pathways to Deep Decarbonization (Michael B. Gerrard and John C. Dernbach, eds. Environmental Law Institute [2019]) (LPDD). For background information on the project, see <https://lpdd.org>

⁹⁶ See NB Bill 243 (<https://nebraskalegislature.gov/FloorDocs/106/PDF/Slip/LB243.pdf>); CA SB-1350 (https://leginfo.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB1350); HI HB 1578 (<https://legiscan.com/HI/text/HB1578/id/1605370/Hawaii-2017-HB1578-Amended.html>); CO Bill 10 (https://leg.colorado.gov/sites/default/files/images/committees/2017/bill_10_19-0140.pdf).

⁹⁷ CA SB-1350 (https://leginfo.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB1350).

⁹⁸ CA SB-1350 (https://leginfo.ca.gov/faces/billCompareClient.xhtml?bill_id=201520160SB1350).

⁹⁹ Language adopted from the Safe Water Drinking Act, 42 U.S.C. § 300g-1(b)(3)(A)(i) (“In carrying out this section, and, to the degree that an Agency action is based on science, the Administrator shall use the best available, peer-reviewed science and supporting studies conducted in accordance with sound and objective scientific practices.”).

¹⁰⁰ HI HB 1578 (<https://legiscan.com/HI/text/HB1578/id/1605370/Hawaii-2017-HB1578-Amended.html>).

State	Name of & Link to Legislation	Summary of Legislation	Funding Mechanism/Amount	Status	Other Notes
California	California Healthy Soils Program (SB1350)	The Healthy Soils Program stems from the California Healthy Soils Initiative, a collaboration of state agencies and departments to promote the development of healthy soils on California's farmlands and ranchlands." Two components: the HSP Incentives Program (which provides "financial assistance for implementation of conservation management that improve soil health, sequester carbon and reduce greenhouse gas (GHG) emissions") and the HSP Demonstration Projects (which "showcase[s] California farmers and rancher's implementation of HSP practices").	5 million in 2017 from cap and trade proceeds from California Climate Investments 0 million from the California Drought, Water, Parks, Climate, Coastal Protection and Outdoor Access for all Act of 2018 million from the California Climate Investments, authorized by the Budget Act of 2018	Passed (2016)	<ul style="list-style-type: none"> No longer accepting applications.
Colorado	Bill 10	<ul style="list-style-type: none"> Creates a "Healthy Soil Task Force." Goals: establish healthy soil benchmarks; identify measurement criteria; and identify activities, policies, and best practices to reach the benchmarks. 	<ul style="list-style-type: none"> "Members of the task force serve without compensation and without reimbursement for expenses." Administrative staff may provide support within the 	Not recommended to legislative council in 2018 session	

		<ul style="list-style-type: none"> • Defines “healthy soil” as “soil with an enhanced and continued capacity to: (a) function as a biological system; (b) hold water, nutrients, and organic matter; and (c) maintain soil structure.” 	Department of Agriculture’s existing budget.		
Connecticut	HB6647	<ul style="list-style-type: none"> • “To establish a regenerative agriculture program in the state that will improve soil health, conservation, rainwater absorption, drought resiliency and water quality.” • Requires Commissioner of Agriculture to “adopt regulations . . . to require the achievement of minimum carbon and water content for soil,” including adopting a definition for “regenerative agriculture.” 	<ul style="list-style-type: none"> • Unclear 	Introduced (as of 6/4/19)	
Hawaii	HB1578	<ul style="list-style-type: none"> • Establishes and appropriates funds for the Carbon Farming Task Force to “to identify agricultural or aquacultural activities and best practices that provide carbon sequestration benefits that may be used 	<ul style="list-style-type: none"> • \$25,000 appropriated from Hawaii’s general revenues for 2017-2018. • The Task Force will develop further “incentives and funding 	Passed (2017)	

		<p>to establish a carbon farming certification.”</p> <ul style="list-style-type: none"> • Defines “healthy soils” as “soils that enhance their continuing capacity to function as a biological system, increase soil organic matter, improve soil structure and water- and nutrient-holding capacity, and result in net long-term greenhouse gas benefits.” • Specifically mentions compost and agroforestry, among other practices. • Ends in 2025. 	<p>mechanisms for these incentives, including but not limited to loans, tax credits, or grants.”</p>		
Illinois	SB1980 / HB2737	<ul style="list-style-type: none"> • Amends The Soil and Water Conservation Districts Act to explicitly address improving soil health, among other things. • Defines “soil health” as “the overall composition of the soil, including the amount of organic matter stored in the soil, and the continued capacity of soil to function as a vital living ecosystem that sustains plants, animals, and humans.” 	<ul style="list-style-type: none"> • Funding mechanism not amended. • The Act permits the State Soil and Water Conservation Districts Advisory Board to “make grants subject to annual appropriation from the Build Illinois Bond Fund or any other sources, including the federal government, <p>47</p>	Passed	both houses (5/29/2019)

		<ul style="list-style-type: none"> Includes developing plans for “cropping programs, tillage practices, incorporation of perennial plants, and changes in use of land.” Makes machinery/equipment available for landowners for soil health improvement. 	to Soil and Water Conservation Districts and the Soil Conservation Service.”		
Illinois	HB2819	<ul style="list-style-type: none"> Amends Section 5 of the Department of Natural Resources Act to allow the Department of Natural Resources to “require the establishment of soil health practices on leases of land used for agricultural purposes.” 	<ul style="list-style-type: none"> Funding mechanism not amended. The Act established the Natural Resources Fund to be “used for the purposes of this Act.” 	Tabled (as of 6/7/2019)	
Iowa	HSB78 / SSB1123	<ul style="list-style-type: none"> Establishes a “partial property tax exemption for certain agricultural land planted with cover crops.” Exempts from taxation 50% “of the assessed value of that portion of the owner’s agricultural land planted with cover crops during the growing 	<ul style="list-style-type: none"> Makes Code section 25B.7 inapplicable, meaning that the exemption is to be available even “if a state appropriation made to fund the [] exemption is not sufficient to fully fund” it. 	Introduced (as of 6/7/2019)	

		<p>season of the assessment year.”</p> <ul style="list-style-type: none"> Establishes penalties for false claims 			
Iowa	HF102	<ul style="list-style-type: none"> Provides “a statewide soil resource health and recovery monitoring system” to “receive data regarding the continued capacity of this state’s soils to permanently sustain plant and animal life.” Data that must be collected include the soil’s: nutrient retention capacity, fertility, physical and chemical characteristics, nutrient value, and ability to harbor earthworms and microbes. Allows maintenance agreements or easements with participating landowners. 	<ul style="list-style-type: none"> Funding mechanism not addressed in text of bill. 	Introduced (as of 6/10/2019)	<ul style="list-style-type: none"> “The division” referenced in the text of the bill refers to the Division of Soil Conservation & Water Quality of the Iowa Department of Agriculture. “The center” referenced in the text of the bill refers to Iowa State University’s Iowa Nutrient Research Center.
Kansas	SB153	<ul style="list-style-type: none"> Provides for Department of Health and Environment response operations for water and soil pollutant release, discharge or escape. 	<ul style="list-style-type: none"> None required. 	Introduced (as of 6/12/2019)	<ul style="list-style-type: none"> Kansas is marked as “drafted” on the legislative status map from soil4climate.org.

					<ul style="list-style-type: none"> • This bill appears to be the most closely related to soil health currently pending in Kansas.
Kentucky					<ul style="list-style-type: none"> • Kentucky is marked as “drafted” on the legislative status map from soil4climate.org; unclear what this refers to.
Massachusetts	S.438 / H.873	<ul style="list-style-type: none"> • “An Act to promote healthy soils and agricultural innovation within the Commonwealth” • Establishes the Massachusetts Healthy Soils Program, to “optimize climate benefits while supporting the economic viability of agriculture in the commonwealth by providing incentives . . . to farmers whose management practices will contribute to healthy soils and agricultural 	<ul style="list-style-type: none"> • Establishes the Massachusetts Healthy Soils Fund, to which revenue will be appropriated from the Gaming Economic Development Fund and other sources. 	In Committee (as of 6/10/2019)	

		<p>innovation and result in net long-term on-farm greenhouse gas benefits.”</p> <ul style="list-style-type: none"> • Defines “healthy soils” as “soils that enhance their continuing capacity to function as a biological system, increase soil organic matter, improve soil structure and water- and nutrient-holding capacity, and result in net long-term greenhouse gas benefits.” • Includes a results-oriented definition of “healthy soils practices.” 			
Maryland	Maryland Healthy Soils Program	<ul style="list-style-type: none"> • Established the Maryland Healthy Soils Program within the Maryland Department of Agriculture (MDA). • Goals: “to (1) improve the health, yield, and profitability of the soils of the State; (2) increase biological activity and carbon sequestration in the soils of the State by promoting practices based on emerging soil science, including planting mixed cover crops, adopting no- 	<ul style="list-style-type: none"> • According to the corresponding fiscal and policy note, it can be “implemented with existing resources, continuing and building upon existing MDA activities.” 	Passed (2017)	

		<p>till or low-till farming practices, and rotation grazing; and (3) promote widespread use of healthy soils practices among farmers in the State.”</p> <ul style="list-style-type: none"> • Directs the MDA to “provide incentives, including research, education, technical assistance, and, subject to available funding, financial assistance to farmers.” • Defines “healthy soils” as “the continuing capacity of soil to (i) function as a biological system; (ii) increase soil organic matter; (iii) improve soil structure and water and nutrient holding capacity; and (iv) sequester carbon and reduce greenhouse gas emissions.” 			
Minnesota	SF0003	<ul style="list-style-type: none"> • Appropriations bill • Article 3 Section 3(h) funds the Forever Green Agriculture Initiative “to protect the state’s natural resources while increasing the efficiency, profitability, and 	<ul style="list-style-type: none"> • For the Forever Green Agriculture Initiate: \$2,300,000 for the first year and \$2,000,000 for the second year; available until 2024. 	Passed (2019)	

		<p>productivity of Minnesota farmers by incorporating perennial and winter-annual crops into existing agricultural practices”</p> <ul style="list-style-type: none"> • Article 2 Section 7(g) provides funds for “permanent conservation easements . . . to permanently protect groundwater supply sources . . . as described under alternative management tools in the Department of Agriculture's Nitrogen Fertilizer Management Plan, including low-nitrogen cropping systems or implementing nitrogen fertilizer best management practices.” • Article 2 Section 7(g) provides funds for tracking soil erosion, including “tracking adoption of conservation measures, including cover crops, to address erosion” 	<ul style="list-style-type: none"> • For the groundwater protection easements: \$2,000,000 the first year and \$2,000,000 the second year. • For tracking soil erosion: \$425,000 the first year and \$425,000 the second year. 		
Minnesota	Agricultural Growth, Research, and	<ul style="list-style-type: none"> • Not specifically about soil, but provides grants to farmers, agricultural businesses, and schools 	<ul style="list-style-type: none"> • \$250,000 is available for the 2019 application cycle. 	Passed (2009)	<ul style="list-style-type: none"> • The AGRI program expires in 2025.

	Innovation (AGRI) Program	<p>for “projects that explore sustainable agriculture practices and systems that could make farming more profitable, resource efficient, and personally satisfying.”</p> <ul style="list-style-type: none"> • Examples of eligible projects include “farm diversification using traditional and non-traditional crops and livestock;” “cover crops and crop rotations;” “conservation tillage;” “input reduction strategies, including nutrient and pesticide management;” and “other creative ideas that focus on environmental benefits.” 	<ul style="list-style-type: none"> • Up to \$50,000 per project. 		
Minnesota	Agricultural Fertilizer Research and Education Council (AFREC)	<ul style="list-style-type: none"> • “Purpose: A farmer-led program to advance soil fertility research, technology development, and education.” • “Mission: To fund research and education on agricultural fertility that is environmentally and economically sound.” 	<ul style="list-style-type: none"> • Initially established with a one-time general fund of \$600,000. • The MN legislature established long-term funding (maximum \$800,000 per year) by increasing the MN Department of 	Lapsed (2008-2018)	

		<ul style="list-style-type: none"> Examples of funded projects include conservation tillage, fertilizer management, water drainage, and crop rotation. 	<p>Agriculture’s fertilizer inspection fee (paid by farmers) by 40 cents per ton of fertilizer, corresponding to about 5 cents per acre of cropland per year.</p>		
Missouri					<ul style="list-style-type: none"> Missouri is marked as “drafted” on the legislative status map from soil4climate.org; unclear what this refers to.
Nebraska	LB243	<ul style="list-style-type: none"> Creates the Healthy Soils Task Force within the Department of Agriculture, made up of representatives from government, academia, production agriculture, agribusiness, and environmental organizations. The Task Force will develop a “comprehensive healthy soils initiative” and an 	<ul style="list-style-type: none"> Paid from the Nebraska Fertilizers and Soil Conditioners Administrative Fund. Allows a maximum of \$10,000 of that Fund to “defray costs incurred by the department directly related to administrative and budgetary support 	Passed (2019)	

		<p>action plan for carrying out that initiative.</p> <ul style="list-style-type: none"> • Defines “Improving soil health” as “increasing soil's organic matter and diversifying its microbial activity to enhance agricultural productivity and environmental resilience.” 	<p>of the Healthy Soils Task Force.”</p>		
Nebraska	LB283	<ul style="list-style-type: none"> • Requires the University of Nebraska to “develop an evidence-based, data-driven, strategic action plan to provide methods for adapting to and mitigating the impacts of climate change.” • Agriculture is one of 8 sectors the action plan will address. • Soil moisture, resources, and health are mentioned in the background, but the action plan does not have an explicitly soil-related directive. 	<ul style="list-style-type: none"> • Up to \$250,000 transferred from the Waste Reduction and Recycling Incentive Fund. 	Introduced (as of 6/10/2019)	
Nebraska	LB729	<ul style="list-style-type: none"> • Would be known as the Soil Health and Productivity Incentive Act. 	<ul style="list-style-type: none"> • Funding to come from “federal, state, and local grants and any other funds designated for the 	Introduced (as of 6/10/2019)	<ul style="list-style-type: none"> • Would run from 2020-2025.

		<ul style="list-style-type: none"> • Purposes: “(1) improve soil health and productivity throughout the state through the planting of diverse cover crops, (2) incentivize farmers to plant cover crops, (3) increase farmer yields and profitability through improved soil health farming practices, and (4) improve degraded waterways.” • Incentives are cash payments. • Defines specific geographic regions that would qualify for funding depending on the calendar year. 	<p>purposes of the act.”</p> <ul style="list-style-type: none"> • Incentive for a single-species cover crop: \$20 per acre. • Incentive for a multi-species cover crop: \$45 per acre. • Maximum incentives per year per claimant: \$45,000. 		
New Mexico	SB218 / HB204	<ul style="list-style-type: none"> • “Healthy Soil Act”; creates the Healthy Soil Program within the New Mexico Department of Agriculture, administered by New Mexico State University. • Purpose: “to promote and support farming and ranching systems and other forms of land management that increase soil organic matter, 	<ul style="list-style-type: none"> • Appropriates funds to New Mexico State University. • Text of bill does not state a specific amount, but the Fiscal Impact Report states that it will be a one-time appropriation of \$5.2 million. 	Passed (2019)	

		<p>aggregate stability, microbiology and water retention to improve the health, yield and profitability of the soils of the state.”</p> <ul style="list-style-type: none"> • Defines “healthy soil” to mean “soil that enhances its continuing capacity to function as a biological system, increases its organic matter and improves its structure and water- and nutrient-holding capacity.” • Establishes a “statewide network of soil champions,” who are land managers deemed to be excellent in “applying and promoting soil health principles.” • Includes grants, education, training workshops, and outreach. 			
New York	A02718	<ul style="list-style-type: none"> • “Carbon Farming Act” • Establishes a “carbon farming tax credit to reward and incentivize farmers to maintain or adopt practices that help maximize New York’s 	<ul style="list-style-type: none"> • The Commissioner of Environmental Conservation and the Commissioner of Agriculture and Markets will calculate the <p>58 “economic value of</p>	In committee (as of 6/10/2019)	

		carbon sequestration potential.”	carbon farming,” which will inform the amount of credit given.		
New York	Climate Resilient Farming (CRF) Program	<ul style="list-style-type: none"> • Run by the New York State Soil & Water Conservation Committee, which operates within the New York State Department of Agriculture. • Goal: “to reduce the impact of agriculture on climate change (mitigation) and to increase the resiliency of New York State farms in the face of a changing climate (adaptation).” • The Committee’s 2017 Annual Report states that CRF funded five projects to improve soil health in 2017, including converting annual, cropland to pasture and implementing cover crops. 	<ul style="list-style-type: none"> • Funded through the Agricultural Environmental Management (AEM) Framework’s base funds, which was established in 2004 as a partnership between the New York State Department of Agriculture and Markets and the United States Department of Agriculture. • 13 projects totaling \$1.52 million were funded in 2017. 	Active since 2015	<ul style="list-style-type: none"> • Not a piece of legislation, but an example of a relevant and currently-active government-funded state-level program.
New York	New York Soil Health Initiative	<ul style="list-style-type: none"> • Provides “a communication and collaboration framework to encompass the full diversity of interests, 	<ul style="list-style-type: none"> • Funded by the NYS Environment Protection Fund (EPF), which was 	Active	<ul style="list-style-type: none"> • Not a piece of legislation, but an example of a relevant and currently-active

		<p>events, resources, and priorities of the many stakeholder groups involved in the soil health movement.”</p> <ul style="list-style-type: none"> Administered by the New York State Department of Agriculture and Markets; coordinated by Cornell University. 	<p>York’s Environmental Protection Act in 1993.</p> <ul style="list-style-type: none"> EPF “is financed primarily through a dedicated portion of real estate transfer taxes.” 		<p>government-funded state-level program.</p>
Ohio					<ul style="list-style-type: none"> Ohio is marked as “drafted” on the legislative status map from soil4climate.org; unclear what this refers to.
Oklahoma	Oklahoma Carbon Sequestration Enhancement Act	<ul style="list-style-type: none"> Directs the Oklahoma Conservation Commission to “to establish and administer the carbon sequestration certification program.” Includes practices such as decreasing tillage, managing vegetated areas, and reforestation. 	<ul style="list-style-type: none"> Established and is funded by the Carbon Sequestration Assessment Cash Fund. The Fund receives money by appropriation from the state legislature and through gifts and grants. 	Passed (2001)	
Oregon	HB2020	<ul style="list-style-type: none"> Establishes the Climate Policy Office (CPO) within Oregon 	<ul style="list-style-type: none"> Establishes the Oregon Climate Action Program 	In Committee (as of 6/10/2019)	

		<p>Department of Administrative Services (DAS), and directs the CPO to adopt the Oregon Climate Action Program.</p> <ul style="list-style-type: none"> • Broad subject matter; soil health is a relatively minor component. • Addresses soil health in these contexts: funding of transportation projects to use vegetation to minimize roadside soil erosion; funding for agricultural fertilizer and soil management and carbon sequestration programs; and prioritizing soil health, among other subjects, when considering which projects to fund. 	<p>Operating Fund, the Climate Investments Fund, and others (summarized in the Fiscal Impact paper)</p> <ul style="list-style-type: none"> • Most of the soil-related initiatives would likely fall under the Climate Investments Fund (Section 46), which is funded by auctions. 		
Utah	Concurrent Resolution on Carbon Sequestration on Rangelands	<ul style="list-style-type: none"> • “[C]alls on the President of the United States to direct federal agencies that implement management practices that increase soil carbon sequestration to develop comprehensive plans that achieve the maximum amount of carbon sequestration possible and 	<ul style="list-style-type: none"> • None mentioned. 	Passed (2015)	

		increase the economic and environmental productivity of rangelands and urges similar action within each state.”			
Vermont				Passed (2008?)	<ul style="list-style-type: none"> Vermont is marked both as “drafted” and “passed (2008)” on the legislative status map from soil4climate.org; unclear what 2008 legislation this refers to.
Vermont	H525	<ul style="list-style-type: none"> Makes “multiple miscellaneous amendments to agricultural subjects,” including several that relate to soil. Establishes the Environmental Stewardship Program, which provides assistance to farmers to implement regenerative farming practices. Establishes the Conservation Reserve Enhancement Program and the Ecosystem 	<ul style="list-style-type: none"> Uses funds already available to the Agency of Agriculture, Food and Markets. 	Passed (2019)	

		<p>Services Incentive Program, which provide farmers with financial assistance to implement “alternative nutrient reduction practices that improve soil quality.”</p> <ul style="list-style-type: none"> • Defines “healthy soil” as “soil that has a well-developed, porous structure, is chemically balanced, supports diverse microbial communities, and has abundant organic matter.” 			
Vermont	S160	<ul style="list-style-type: none"> • “An act relating to agricultural development.” • Soil health is only one component; other parts deal with slaughterhouses, water quality, etc. • Requires the Secretary of Agriculture, Food and Markets to “develop a strategic plan for the stabilization and revitalization of the dairy industry in Vermont.” • Requires the Farm and Forest Viability Program of the Vermont Housing 	<ul style="list-style-type: none"> • Financial incentives funded by the net proceeds or royalties from the Vermont Clean Water Affinity Card Program. • However, the corresponding Fiscal Note states that “the cost to manage [the affinity card program] would likely be greater than any revenues.” 	Passed (2019)	

		<p>and Conservation Board to recommend financial incentives for farmers to improve soil health, enhance crop resilience, <i>or</i> reduce agricultural runoff to waters.</p> <ul style="list-style-type: none"> • Requires an assessment of market viability of dairy products produced using healthy soil practices, among other things. 			
Vermont	H903	<ul style="list-style-type: none"> • Establishes the Vermont Environmental Stewardship Program “to provide technical and financial assistance to Vermont farmers to adopt and implement regenerative farming practices and achieve certification as an outstanding environmental steward.” • Defines “regenerative agriculture” as “a series of cropland management practices” that, among other things “contributes to generating or building soils and soil fertility and health” and “sequesters 	<ul style="list-style-type: none"> • Allows the use of funds appropriated from the Clean Water Fund. 	Introduced last session; passed by the House	<ul style="list-style-type: none"> • “Will probably be taken up again,” according to soil4climate.org

		carbon in agricultural soils.”			
Washington	Soil Health Initiative	<ul style="list-style-type: none"> • “Funding is provided for new soil health research and extension activities to develop, evaluate and incentivize best management practices across the agricultural systems in Washington.” • “The initiative will build a network that must include a Mount Vernon REC [Research & Extension Center] site.” • Jointly managed by Washington State University, the Washington State Department of Agriculture, and the Washington State Conservation Commission. 	<ul style="list-style-type: none"> • “\$250,000 of the general fund—state appropriation for fiscal year 2020 and \$250,000 of the general fund—state appropriation for fiscal year 2021 are provided solely for the university’s soil health initiative and its network of long-term agroecological research and extension (LTARE) sites.” 	Passed as part of state budget (2019)	
Washington	SB5947 / HB2095	<ul style="list-style-type: none"> • Establishes the Sustainable Farms and Fields grant program to “provide financial assistance to voluntary farmers and ranchers who adopt practices that reduce fossil fuel inputs in their operations and 	<ul style="list-style-type: none"> • Establishes a dedicated account in the state treasury to which an unspecified amount of money will be appropriated. 	In Committee (as of 6/11/2019)	

		<p>increase the quantity of carbon stored on their land.”</p> <ul style="list-style-type: none">• Eligible activities include, among others: agroforestry, carbon farming, and reducing use of fossil fuel-based fertilizers.• Defines “carbon farming” as “[a]ny activity or technology that increases the quantity of organic carbon in top soil, such as cover cropping, no-till and low-till practices, manure application, biochar application, compost application, and changes in grazing practices.”• Provides quantitative guidance on how to prioritize grant recipients in order to maximize reduction in atmospheric carbon dioxide.			
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