

Update: Payment for Ecosystem Services and Soil Health Working Group

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PAYMENT FOR ECOSYSTEM SERVICES AND SOIL HEALTH WORKING GROUP
FINAL REPORT

Prepared for the Vermont General Assembly in Accordance with

Act No. 83, Section 3 (2019)

Act No. 129, Section 24 (2020)

Act No. 47, Section 3 (2021)

Submitted to the

Senate Committee on Agriculture

House Committee on Agriculture, Food Resiliency, and Forestry

Healthy Soils & Regenerative Farming

- **Act 64 of 2015:** Definition of 'Healthy Soils'
- **S.159 of 2016:** Regenerative agriculture certification program
- **S.43 of 2017:** Regenerative soils program
- **S.430 of 2017:** Regenerative soils program
- **H.903 of 2018:** Regenerative farming
- **H.661 of 2018:** Regenerative organic farming

- **Act 64 of 2019:** Regenerative Farming
- **Act 83 of 2019:** PES Working Group
- **Act 129 of 2020:** PES Working Group
- **Act 47 of 2021:** PES Working Group

Statutory Definitions

6 V.S.A. § 4802(4) "**Healthy soil**" means soil that has a well-developed, porous structure, is chemically balanced, supports diverse microbial communities, and has abundant organic matter.

6 V.S.A. § 4962(2) "**Regenerative farming**" means a series of cropland management practices that:

- (A) contributes to generating or building soils and soil fertility and health;
- (B) increases water percolation, increases water retention, and increases the amount of clean water running off farms;
- (C) increases biodiversity and ecosystem health and resiliency; and
- (D) sequesters carbon in agricultural soils.

A Proposal to Explore how to Value Agriculture Ecosystem Services in Vermont

To develop a system which monitors, evaluates, and monetizes Ecosystem Services (ES) provided by agriculture and delivers both environmental and food security to the Vermont community well into the future.



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Seven-year average reductions: 95%+ Agriculture

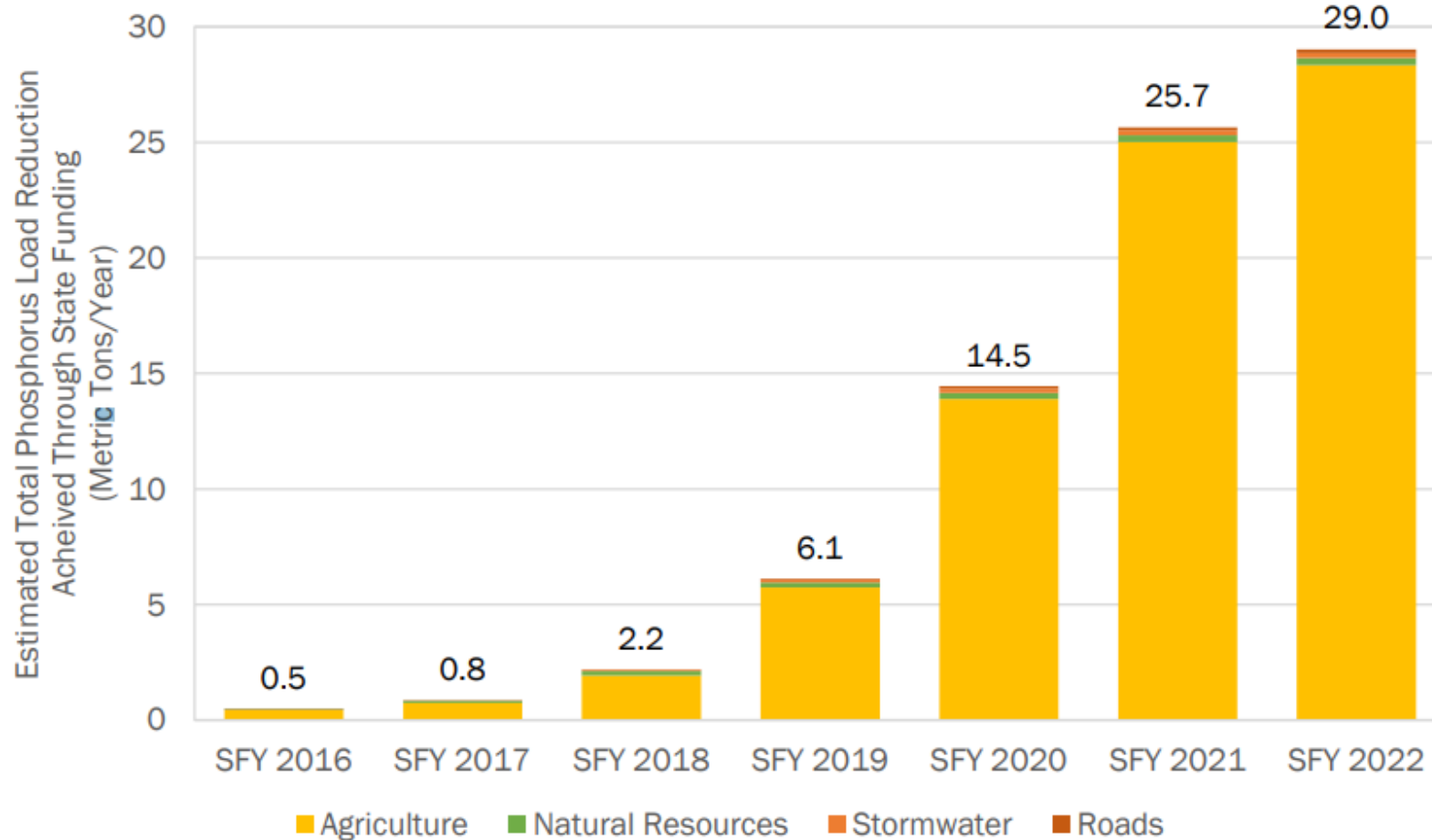


Figure 21. Annual estimated total phosphorus load reductions (metric tons per year) associated with state-funded clean water projects in the Lake Champlain and Lake Memphremagog basins by land use sector, SFY 2016–2022.³²

Agriculture = Most cost effective

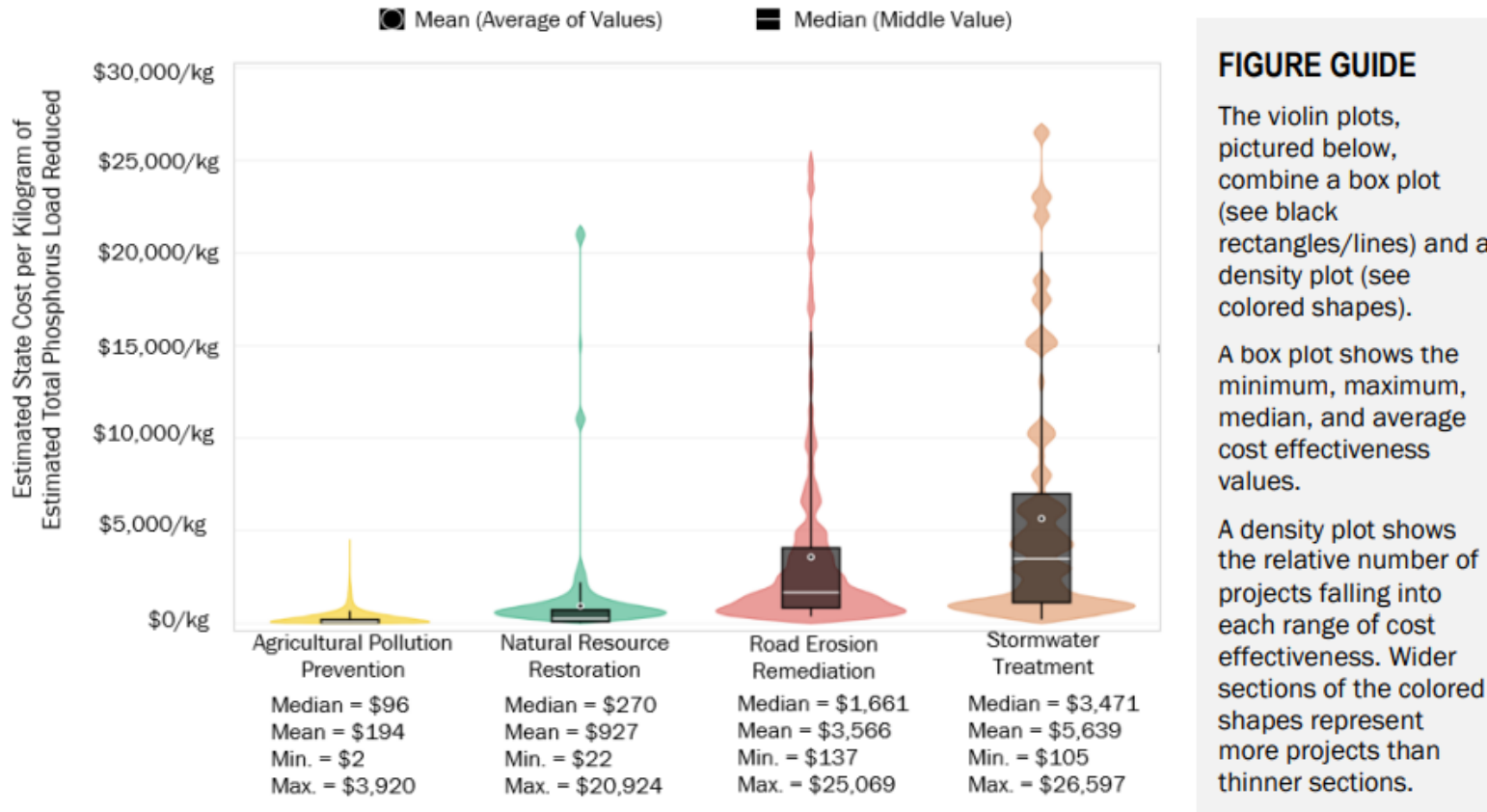


FIGURE GUIDE

The violin plots, pictured below, combine a box plot (see black rectangles/lines) and a density plot (see colored shapes).

A box plot shows the minimum, maximum, median, and average cost effectiveness values.

A density plot shows the relative number of projects falling into each range of cost effectiveness. Wider sections of the colored shapes represent more projects than thinner sections.

Figure 22. State investment per estimated kilogram of total phosphorus load reduced over the design life of each project type, based on clean water projects funded through State of Vermont agencies completed SFY 2016–2022 (excludes local and federal leveraged funds).³⁵

PES Working Group Legislative Purpose

The PES Working Group is established to recommend **financial incentives** designed to **encourage farmers** in Vermont to **implement agricultural practices...** that:

1. improve soil health,
2. enhance crop resilience,
3. increase carbon storage and stormwater storage capacity, and
4. reduce agricultural runoff to waters.

PES Working Group Legislative History

- **Act 83 of 2019:** Soil Conservation Practice & PES Working Group Formed
 - Original charge
- **Act 129 of 2020:** PES & Soil Health Working Group Amendment
 - Changed name to PES & Soil Health Working Group
 - Added Members
 - Farmer other than dairy farming
 - Statewide environmental organization
 - Ag Economist
 - Ecosystem service specialist from UVM
 - Soil Scientist
 - Added deliverables for PES report
- **Act 47 of 2021:** PES Working Group Amendment
 - Extended deadline for report deadline to **January 15, 2023**

Reports

Jan 2020: [Soil Conservation Practice & PES Working Group Report](#)

Feb 2022: [PES & Soil Health Working Group Interim Report](#)

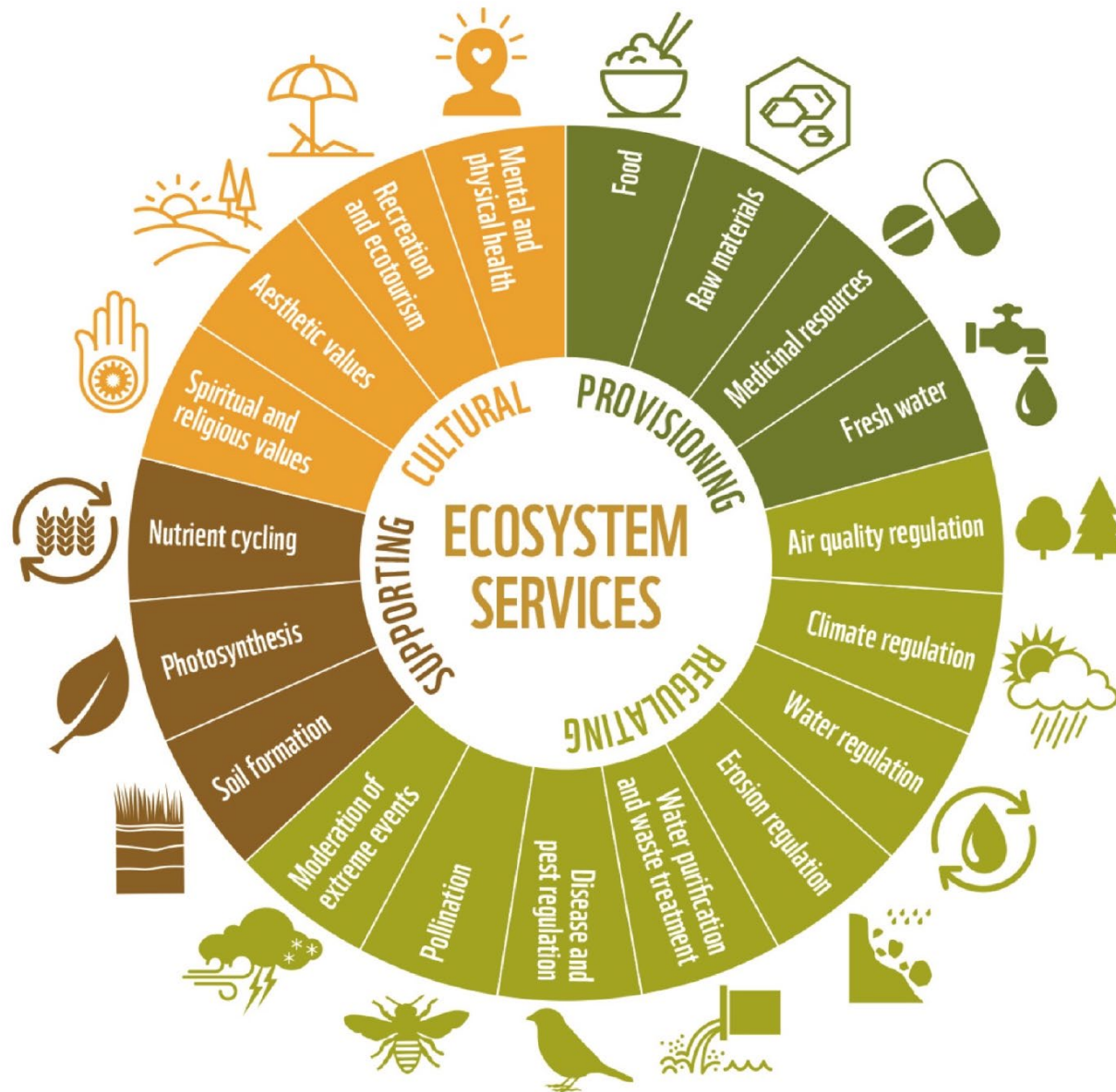
What are ecosystem services? Ecosystem services (ES) are “the conditions and processes through which natural ecosystems, and the species that make them up, sustain and fulfill human life” 1 i.e. “the set of ecosystem functions that are useful to humans.”²

a major Climate Smart Agricultural practice – throughout the state, with cover crop adoption rates rising from [7% in 2014](#) to [48% in 2021](#) on eligible cropland.

Members: 18

Section 24 of Act 129 of 2020
The Working Group shall include the following members:

- 1) the Secretary of Agriculture, Food and Markets or designee;
 - a) Deputy Secretary Alyson Eastman
- 2) the Secretary of Natural Resources or designee;
 - a) Marli Rupe (DEC)
- 3) a representative of the Vermont Housing and Conservation Board;
 - a) Stacy Cibula
- 4) a member of the former Dairy Water Collaborative;
 - a) Brian Kemp (CVFC)
- 5) two persons representing farmer’s watershed alliances in the State;
 - a) Paul Doton (CRWFA)
 - b) Scott Magnan; (FWA)
- 6) a representative of the Natural Resources Conservation Council;
 - a) Jill Arace (VACD)
- 7) a representative of the Gund Institute for Environment of the University of Vermont;
 - a) Alissa White
- 8) a representative of the University of Vermont (UVM) Extension;
 - a) Joshua Faulkner
- 9) two members of the Agricultural Water Quality Partnership;
 - a) Matt Vaughan (LCBP)
 - b) Vicky Drew (NRCS-VT)
- 10) a representative of small-scale, diversified farming;
 - a) Maddie Kempner (NOFA-VT)
- 11) a member of the Vermont Healthy Soils Coalition
 - a) Cat Buxton / Didi Pershouse
- 12) a person engaged in farming other than dairy farming;
 - a) Ed Pitcavage (Philo Ridge Farm)
- 13) a representative of an environmental organization with a statewide membership that has technical expertise or fundraising experience;
 - a) Heather Furman, The Nature Conservancy in Vermont
- 14) an agricultural economist from a university or other relevant organization within the State;
 - a) David Conner, University of Vermont
- 15) an ecosystem services specialist from UVM Extension; and
 - a) Juan Alvez
- 16) a soil scientist
 - a) Meredith Albers (NRCS-VT)



**Act 9 of 2021 Sec. 22. NATURAL RESOURCES
AND AGRICULTURE**

- **\$250,000.00** to the Agency of Agriculture for continuation of work in soil conservation practice and payment for ecosystem services including the costs of the task force established by 2019 Acts and Resolves No. 83.

**Act 185 of 2022 Sec. B.1100 FISCAL YEAR 2023
ONE-TIME GENERAL FUND APPROPRIATIONS**

- **\$1,000,000** for the development of an agricultural Payment for Ecosystems Services Program to support the work of the Payment for Ecosystem Services and Soil Health Working Group (PES WG) – as authorized by 2019 Acts and Resolves No. 83, amended by 2020 Acts and Resolves No. 129 and 2021 Acts and Resolves No. 47 – to enable Payment for Ecosystem Services Program development to retain facilitation services, contract identified research needs, fund pilot program development, and deliver payments to farmers for quantified ecosystem services

PES Working Group Work Undertaken & Proposed Program

1. Develop and Retain Facilitation Services: **33 PES Working Group Meetings since 2019**
 - a. Consensus Building Institute (CBI) 2019 (*5 meetings*)
 - b. CBI 2021 & 2022 (*28 Meetings*)

2. Contract Identified Research Needs
 - a. UVM: Technical Services Contract for the Payment of Ecosystem Services and Soil Health Working Group
 - i. **7 Technical Research Reports authored by the Contractor**

3. Fund Pilot Program Development
 - a. **6 Pilot Program Concepts Developed and Analyzed**

4. Deliver Payments to Farmers for Ecosystem Services
 - a. **1 Pilot Program Adopted by Consensus:**

Vermont Farmer Ecosystem Stewardship Program

Program is an ***enhancement*** to the NRCS Conservation Stewardship Program (**CSP**) program to ***incentivize*** farmer enrollment in the program and to ***accelerate and compensate*** conservation through farmer adoption of practice enhancements required for CSP enrollment.

Program Principles:

1. **Threshold Program** to start [using NRCS Conservation Assessment Ranking Tool (**CART**)];
2. **Pay to Plan and Upfront Payment** for 5 years for state portion into First year;
3. Not targeted at any particular resource concern (RCC) but **Provide Farmers Flexibility** and allow farmers to select within the CSP framework what is needed/makes sense for them.
4. Necessary **End of 1st Year Review** to address:
 - a. how the program worked,
 - b. what the program learned,
 - c. how much additionality did the State of Vermont gain,
 - d. how did farmers and TA providers experience this program,
 - e. what needs to be tailored or improved for Phase II.

1

Fill out the CSP application form



2

Read about the enhancements



3

Answer the CART questions with your NRCS representative



4

WAIT – NRCS will rank your application



5

Make a conservation plan



6

Carry out the plan



7

Do the Reporting



8

Get the money



PES Working Group Proposed CSP Payment & TA Interventions

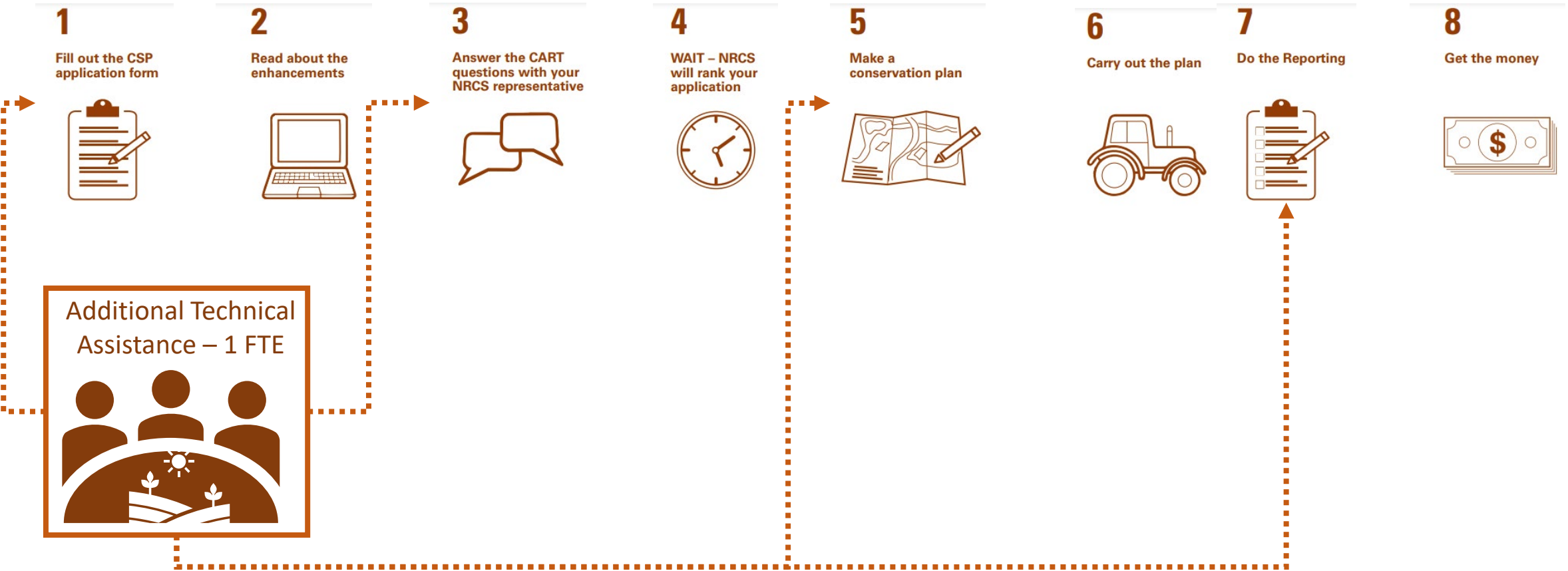


Illustration From: <https://sustainableagriculture.net/wp-content/uploads/2020/11/CSP-2020-draft3-interactive-1-1.pdf>

Photo From: <https://www.nrcs.usda.gov/getting-assistance/conservation-technical-assistance>

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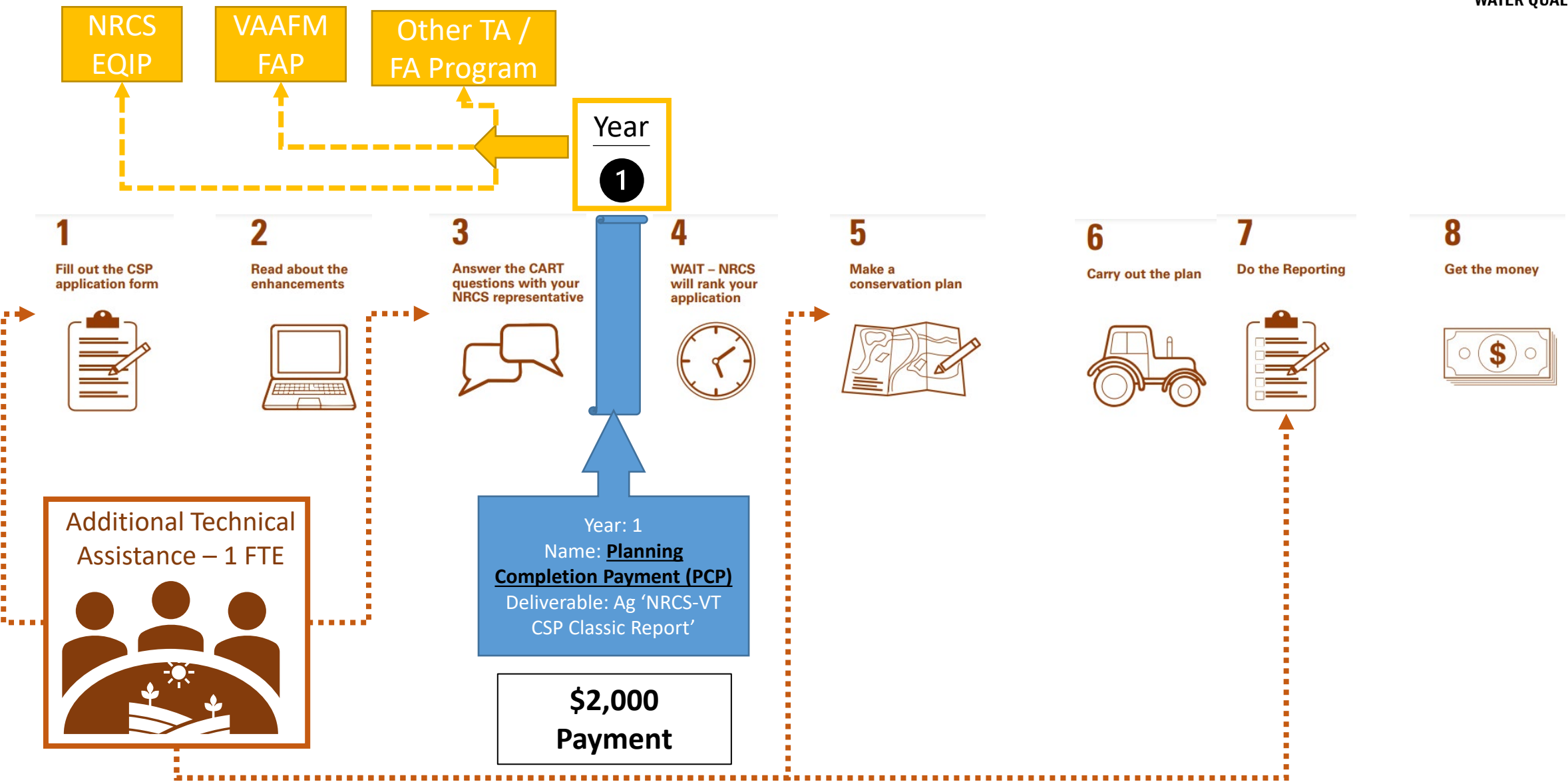


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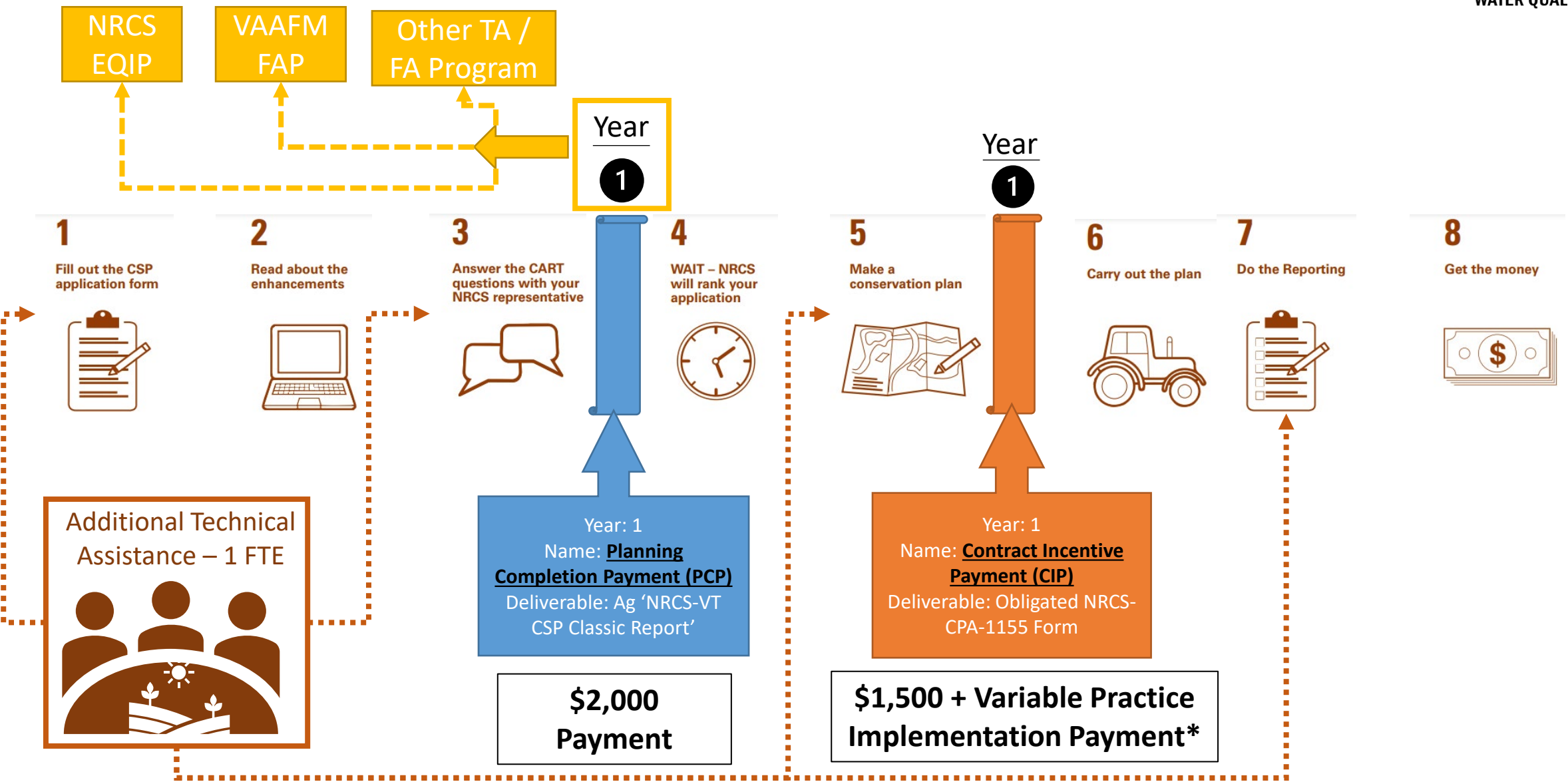


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PES Working Group Proposed CSP Payment & TA Interventions

NRCS EQIP VAAFM FAP Other TA / FA Program

Year 1

PCP Payment = \$2,000
 CIP Payment = \$1,500
 PIP Payment = \$1,500 - \$6,000^A
^A(depending on signups)
 Total = \$4,500 - \$9,500 per farm

1 Fill out the CSP application form



2 Read about the enhancements



3 Answer the CART questions with your NRCS representative



4 WAIT - NRCS will rank your application



5 Make a conservation plan



6 Carry out the plan



7 Do the Reporting



8 Get the money



Additional Technical Assistance – 1 FTE

Year: 1
 Name: **Planning Completion Payment (PCP)**
 Deliverable: Ag 'NRCS-VT CSP Classic Report'

\$2,000 Payment

Year: 1
 Name: **Contract Incentive Payment (CIP)**
 Deliverable: Obligated NRCS-CPA-1155 Form

\$1,500 + Variable Practice Implementation Payment*

Planning Payment = \$2,000
 Contract Signing = \$1,500
 Practice Implementation Payment = \$ Variable (number of signups)

**Farms already actively enrolled in Ag-CSP prior to the start of this program will receive a \$3,500 Practice Implementation Payment*

Outcome: Phasing

Phase 1: CSP-PES Enrollment and Incentive Payments

- Pilot as proposed with:
 - Planning Completion Payment (PCP)
 - Contract Incentive Payment (CIP)
 - Practice Incentive Payment (PIP)

Phase 2: Targeted CSP Incentives for Resource Concern Categories

- Funding Potential: RCPP-Classic Application
- Social Recognition Component

Phase 3: Targeted Payment for Performance Outcomes

- Funding Potential: RCPP-AFA Application
- Requires further analysis of CART & Vermont agriculture & environmental goals

Contact

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