CONSERVATION PRACTICE SURVEY GUIDANCE DOCUMENT

Conservation Practice Survey: Collecting and verifying priority conservation practice implementation without state or federal cost share assistance in collaboration with willing farms and reporting of that information into the Partner Database for state phosphorus reduction tracking and accounting.

Scope of Practices for Survey:
While the intent is to verify the implementation of all conservation practices in Vermont, resource constraints require that priorities focus on practices with quantifiable nutrient pollution reductions in place or under development. These priority conservation practices are detailed below in Table 1. Priority Conservation Practices for Verification, Phosphorus Load Reduction Efficiencies, and Data Sources. Agricultural production area management practices are not included as priority conservation practices for this survey work. Agricultural production area management is not attributed nutrient reduction values in the same manner as other practices. Rather than tracking and quantifying nutrient reductions at the practice-level, production area management is assessed at the site-level through VAAFM inspections. Production area includes barnyards, heavy-use areas, waste storage, feed storage, and access roads. Nutrient pollutant reductions are quantified for sites in compliance with farm operational permits and Required Agricultural Practices. This involves utilizing runoff and leachate collection systems, diversions, or other management strategies to prevent the discharge of agricultural waste to surface waters. Upon a compliant determination, an 80% total phosphorus load reduction is applied to the production area.

Survey Process and Data:
All survey data entered into the Partner Database via Conservation Practice Survey (CPS) work area, funded through the AGCWIP program, should be documented according to the Quality Assurance Project Plan (QAPP) for the Partner Database. Additionally, pursuant to 6 V.S.A. § 61, AAFM would only make the practices reported available to the public upon request "in a form which does not disclose the identity of individual persons, households, or businesses from whom the information was obtained, or whose characteristics, activities, or products the information is about." Please note that while the specific conservation practices and location of said practice implementation will be protected under 6 V.S.A. § 61, the farm operation information included in partner database is not subject to the same protections from disclosure.

Timeframe of Survey Efforts:
Practices that occurred in the distant past (prior to January 1, 2010) are neither eligible for reporting nor a priority for this survey work. All nutrient reduction crediting occurs for each state fiscal year period (SFY) from July 1-June 30. For example, if a practice is entered into the Partner Database on July 2, 2020 with an install date of May 10, 2020, it is likely that it will not be reported until the end of the following SFY, or June 30, 2021, but the

associated phosphorus reductions will be attributed to the appropriate SFY based on install date. Please remember that per the QAPP, in order to report a practice that has occurred **more than three months** in the past into the Partner Database, the practice must meet at least one of the following criteria;

a. The conservation practice was field verified by the user; OR
b. Conservation practice implementation was tracked by partner organizations as part of other programs and initiatives prior to launch of the Partner Database on May 1, 2019, no earlier than January 1, 2016, OR
c. Historical data was compiled by state or federal cost share programs since 2016 and these programs continually maintained procedures for field verification of these practices at the time of data generation.

"Practice Lifespan" is included in Table 2. below and indicates the amount of time that a practice is assumed to function properly and will receive nutrient reduction crediting. If it is not an annual practice, and you are unsure of the installation date, or unsure of how much longer that practice will be in place, the practice is not eligible to be reported under these efforts.

Important Links for Reference:

New Farm Request: If you are working with a farm that is not in the Partner Database, we will need to add them as a farm before you can track visits or enter practices for their operation. Please submit all information via the form link.

Quality Assurance Project Plan (QAPP): All Partner Database users must review the QAPP prior to reporting information into the Partner Database.

Partner Database User Instructions: These are user friendly directions that you can print out and have on hand. Please refer to these directions before calling the database administrator for additional assistance.

Field Office Technical Guide: Use this link to reference conservation practice standards for Vermont.

Table 1. Priority Conservation Practices for Verification, Phosphorus Load Reduction Efficiencies, and Data Sources

Practice Type	Total Phosphorus Load Reduction Efficiency (%)	Data Sources
Livestock Exclusion	55%	State and federal cost share programs verified and reported by funding program administrator. **Farmer funded implementation verified and reported by partners providing technical assistance or surveying farms for conservation practice implementation.**
Forested Riparian Buffer	40% plus reduction from converting cropland to forest	
Filter Strip Riparian Buffer	40% plus reduction from converting cropland to grass/hay	
Forested Ditch Buffer	24% plus reduction from converting cropland to forest	
Filter Strip Ditch Buffer	24% plus reduction from converting cropland to grass/hay	
Conservation Crop Rotation, Change in Crop Rotation, Strip Cropping	Average 25% (depends on land use, soil, and slope)	
Conservation Tillage, Reduced Till, No Till	Average 27.5% (depends on land use, soil, and slope)	
Cover Crop, Nurse Crop	Average 28% (depends on land use, soil, and slope)	
Forage and Biomass Planting	Average 80% (depends on land use, soil and slope)	
Crop to Hay	Average 80% (depends on land use, soil and slope)	
Manure Injection	40%	

Conservation Practice Survey Partner Database Documentation Guidance: Below are specific instructions for each information field for purposes of reporting CPS information into the Partner Database. Please note all data fields are required to be completed/ in order for the data to be exported.

Practice: *Choose correct practice (only practices listed in Table 2. Priority Practices and Baseline Standards for Reporting are eligible for this area of work)*

Status: *Enter as PLANNED when reporting planned data and before field check confirms implementation, then update later as INSTALLED. If you have not yet confirmed and verified INSTALLED, please enter as PLANNED)*

Field Verified: *Check this box **once the practice has been field verified** according to the QAPP to meet the baseline standards for reporting (as included in Appendix A. CPS Priority Practices Below)*

Meets NRCS Standard: *Check this box if a baseline standard for reporting **requires that a practice meets NRCS standard and all required practice standard specifications are verified** by reporter (as included in Appendix A. CPS Priority Practices Below)*

Required Ag Practice: *Check this box if the practice was installed by the farm to meet Required Agricultural Practices (RAPs) requirements for nutrient management, field improvements or otherwise.*

Notes: *This is an optional space to provide any information you deem relevant. For Livestock Exclusion, enter date of field verification e.g - "DOV 7/7/2020"*

Funding Program: *Select* **Farmer Funded - CPS** *(this funding program, in combination with the GRANT ID below ties all of your entries to your grant. Without this information, there should be no assumption that practices will be counted as deliverables or performance measures under your agreement)*

Application Date: n/a

Approval Date: n/a

Install Date: *This field is **required** once installed and should indicate the day the practice was installed/implemented by the farm.*

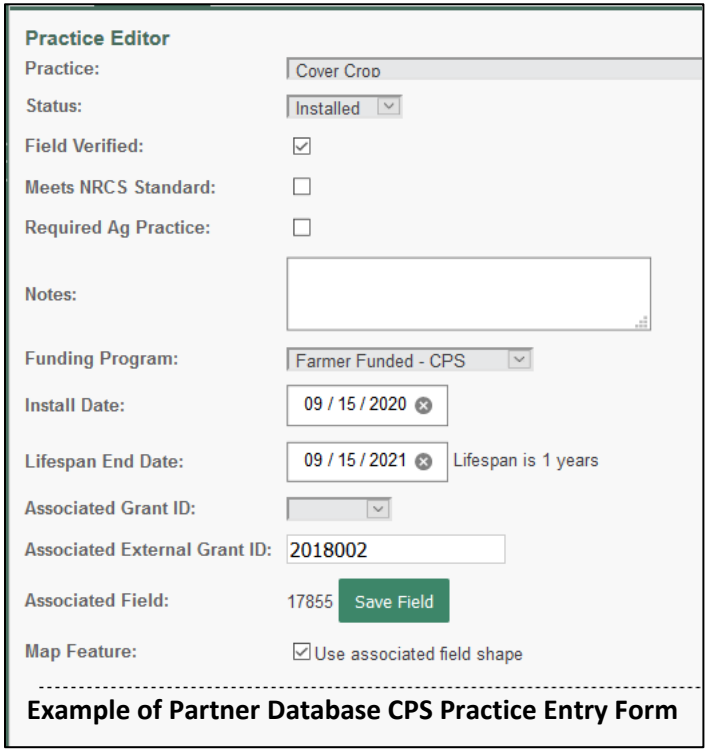
Lifespan End Date: *This field will be **automatically calculated** based on the practice lifespan (as included in Appendix A. CPS Priority Practices Below).*

Grant Status: n/a

Associated External Grant ID: **LAST SEVEN DIGITS OF YOUR FUNDING AGREEMENT** *(this number in combination with "Farmer Funded - CPS" funding program above ties all of your practice entries to your grant)*

Select Associated Field: *Choose the appropriate field where the practice occurred. If the field is not selectable, you need to go to the field tab and add the field to the farm.*

Use Associated Field Shape, or Draw Shape: *If the practice occurred across the entire field, choose "use field shape" and the field will become yellow, otherwise you can draw the polygon where the practice occurred.*



Example of Partner Database CPS Practice Entry Form

Table 2. Priority Practices and Baseline Standards for Reporting

Priority Practice Category	Code	Database Practice Name	Lifespan (Years)	Best Time of Year to Verify	Qualifying Conditions for Reporting	Survey Guidance
Livestock Exclusion	918Vtag	Livestock Exclusion	10	Anytime able to assess access and condition of crossing or access	• Exclusion of livestock from surface waters across the entire pasture area by installing fences or other barriers • Pasture must be adjacent to surface water • If livestock do have access to surface water, it must be at a reinforced stream crossing (NRCS Code 578) or water gap structures (see qualifying conditions for water gap) that provides limited access for watering or crossing. • **Required - Enter Date Of Verification (DOV)in practice notes when recording in database as "DOV 6/26/20"**	What to ask: • Any pastures where livestock had access to streams or ditches but now do not at all, or only have access in improved locations? What to look for: • Check for intact fencing at stream adjacent fields. • Fence must be in good working order and expected to last the full lifespan (at least another 10 years) Any fields that allow limited water access must meet 578 standard – generally an "improved crossing" - intentionally built for livestock crossing with minimal or no erosion around the crossing
Buffers	393	Filter Strip	10	April - October	• Areas of planted filter strips - managed and maintained grasses or hay • Located adjacent to surface waters that filter out pollutants from runoff • 25-foot minimum width for entire field buffer • No manure application • No gully erosion or channelized flow	What to ask: • Any wide or expanded harvestable buffers established adjacent to streams and ditches? What to look for: • Above and beyond RAP requirements buffers only • Focus on fields next to or surrounding ditches and/ or streams • Ensure buffer width of at least 25' and grass/hay buffer has no manure spread on it

						• Verify there has not been any manure application within the filter strip
	391	Riparian Forest Buffer	15	Any	• Areas of installed buffers - managed and maintained woody vegetation (shrubs and trees) located adjacent to surface waters that filter out pollutants from runoff • 35-foot minimum width • No manure application • No gully erosion or channelized flow is present • In a shrub community 450 to 300 plants per acre; in a forest community, 300 to 200 plants per acre	What to ask: • Any riparian forested buffers established adjacent to streams or ditches? What to look for: • Focus on fields next to or surrounding ditches and/ or streams Fields with well-maintained woody buffers around surface waters receive credit for installation
Conservation Tillage, Reduced Till, No Till	329	Residue & Tillage Management, No Till	1	Early spring seeding time	• Only involves an in-row soil disturbance during planting, and a seed row/furrow closing device • No full width tillage from the time immediately following harvest or termination of one cash crop through harvest or termination of the next cash crop in the rotation • A minimum of 30% of the soil surface must be covered with plant residue after the tillage or planting operation	What to ask? • What method of tillage used? • Type of equipment used for planting? What to look for: • Last year's crop residue on the fields (limited bare soil) If verifying right after planting, soil has not been tilled, weeds and other vegetation often present across field
	345	Residue Management, Reduced Till	1	Early spring seeding time	• Can involve tillage operations - such as chisel plowing, field cultivating, tandem disking, or vertical tillage - that disturb the entire soil surface • No primary inversion tillage implements (i.e. moldboard plow) are allowed • The chosen tillage system leaves a minimum of 30% of the soil surface	What to ask? • What method of tillage used? • Type of equipment used for planting? What to look for: • Last year's crop residue on the fields (limited bare soil) If verifying right after planting, soil minimally tilled, weeds and other vegetation often present across field– e.g.

					covered with plant residue after the tillage or planting operation • For silage corn, this could involve required application of a cover crop or use of zip-till, zone-till or minimum tillage equipment	surface level scratching or harrow, but soil has not been entirely turned over
Cover and Nurse Crops	340	Cover Crop	1	Fall - Oct/Nov	• Establishing a seasonal cover on annual cropland for soil erosion reduction and conservation purposes • Seasonal cover consists of a crop of winter rye or other herbaceous plants seeded at the recommended rate per acre to provide effective soil coverage - e.g. 75 - 115 lbs per acre for winter rye, • Cover crops can be single species (i.e. winter rye) or multi-species (i.e. winter rye and vetch) • Cover crop establishment shall be timed so that the soil will be adequately protected during critical erosion periods – typically recommended for planting by 10/1 for broadcast and 10/15 for drilled to ensure adequate soil coverage • Selected cover crops will have the physical characteristics necessary to provide adequate soil loss protection	What to ask: • Species, when they planted it, and whether they broadcast or drilled the seed, and at what rate What to look for: Verify that there are regular, parallel rows if drilled, or visible broad coverage if broadcasted, of sprouting cover crop before frost
	900VTAg	Nurse Crop	1	Summer - July/August	• A nurse crop is an annual crop used to assist in the establishment of a perennial crop; for example, oats might also be planted at time of seeding an annual crop field to perennial forages • Provides soil erosion protection for annual cropland while other crops are established; can also suppress weeds	What to ask: • Species, when they planted it, and whether they broadcast or drilled the seed What to look for: • Nurse crop sprouting in regular, parallel rows if drilled, or visible broad coverage if broadcasted You might see the perennial crop sprouting as well

					• Nurse crop should be seeded at the recommended rate (30-50 lbs per acre) to provide effective soil coverage	
Change in Crop Rotation	327	Conservation Cover	1	Summer - July/August	• Establishment and management of perennial, permanent vegetative cover with the intention to reduce soil erosion, improve long-term soil health, or enhance wildlife habitat; **not** for forage production or a critical area planting • Seeding rate provides full soil coverage, rate and planting method adequate to accomplish the planned purpose for the practice • Field is not dominated by noxious or invasive plant species such as reed canary grass or crown vetch • Examples are vegetative cover in perennial cropping systems (orchards, vineyards, berries, nursery stock); plantings with the objective of enhancing wildlife habitat (i.e. for pollinators) • **This is not seeding down an annual crop field to grass/pasture**	What to ask: • Any fields they will be retiring from annual crop • Species, when they planted it, whether they broadcast or drilled the seed • Confirm field is left fallow/unharvested during growing season. What to look for: • For fruit and vegetable fields, look for grassed/non-bare soils between rows and around perimeter • Credit is available for first year only – confirm the planting occurred that year Confirm no invasive plant species are dominating the field
	585	Strip-cropping	5	Summer - May-August	• Growing planned rotations of erosion-resistant (usually perennial, i.e. hay) and erosion-susceptible (usually annual, i.e. corn or soybeans) crops is a systematic arrangement of strips across a field; minimum of two strips • At least 50% of the rotation must be in erosion-resistant or sediment-trapping cover (i.e. hay) • The orientation of the strips must at angles as close as practical to	What to ask: • Are they planting alternating strips of annual and perennial crops in a single field? What to look for: • Look for fields that have both an annual and perennial crop growing in alternating rows Ensure layout meets standards listed.

					perpendicular to the critical wind and/or water erosion vectors • The intention is to reduce soil erosion and/or improve long-term soil health and quality	
Crop to Hay	917VTAg	Crop to Hay	2	Summer - May-August	• Rotation from an annual crop (i.e. corn, soybeans) to a perennial crop (i.e. hay); the crop rotation must include a minimum of two different crops • Any fields newly seeded to perennial crop will get a credit within the first year of rotation (i.e. a field in its 2nd year of hay in a 3-year hay rotation doesn't get the credit) • Seeding rate provides full soil coverage, and practice completed in a way to minimize erosion • Invasive weeds are managed so as not to out compete forage species • May be reported for the initial conversion or seed down only	What to ask: • Any fields they have recently converted from a continuous annual crop field (usually silage corn) to an annual/perennial rotation? What to look for: • Confirm that the field indicated as perennial has no annual crop growing during the growing season • For a new seed, you should see regular, parallel rows of perennial crop

Forage and Biomass	512	Forage and Biomass Planting	5	Summer - May-August	• Establishing entire field planting with adapted and/or compatible species, varieties, or cultivars of herbaceous species suitable for pasture, hay, or biomass production • Seeding rate provides full soil coverage, and practice completed in a way to minimize erosion - e.g. reseeding existing pasture or hay, drilling or frost seeding • Invasive weeds are managed so as not to out compete forage species • May be reported for the initial conversion or seed down only	What to ask: • Any fields they have retired from annual crop and converted to grass/pasture permanently? What to look for: • Confirm the field has no annual crop growing during the growing season • For a new seed, you should see regular, parallel rows of perennial crop
Manure Injection	901VTAg	Manure Injection	1	May - October: During or soon after injection (ideally within a few days) - Check with farmer when they plan to inject	• Mechanical application of organic nutrient sources (e.g., manures, composted materials) into the root zone • Surface soil closure or minimal soil disturbance at the time of application • Limited to subsurface injection including disk, shank, and grassland manure injection • Injected below soil surface simultaneously with a single implement • Nutrient application rate should be within soil test recommendations • Aeration and manure incorporation is not covered under this practice	What to ask: • Date of injection • Type of equipment used for spreading manure What to look for: • Thin, parallel slits in the soil • Little to no manure on plants/soil surface