

Administrative Procedures – Economic Impact Statement

Instructions:

In completing the economic impact statement, an agency analyzes and evaluates the anticipated costs and benefits to be expected from adoption of the rule. This form must be completed for the following filings made during the rulemaking process:

- Proposed Rule Filing
- Final Proposed Filing
- Adopted Rule Filing
- Emergency Rule Filing

Rules affecting or regulating public education and public schools must include cost implications to local school districts and taxpayers in the impact statement (see 3 V.S.A. § 832b for details).

The economic impact statement also contains a section relating to the impact of the rule on greenhouse gases. Agencies are required to explain how the rule has been crafted to reduce the extent to which greenhouse gases are emitted (see 3 V.S.A. § 838(c)(4) for details).

All forms requiring a signature shall be original signatures of the appropriate adopting authority or authorized person.

Certification Statement: As the adopting Authority of this rule (see 3 V.S.A. § 801 (b) (11) for a definition), I conclude that this rule is the most appropriate method of achieving the regulatory purpose. In support of this conclusion I have attached all findings required by 3 V.S.A. §§ 832a, 832b, and 838(c) for the filing of the rule entitled:

Rule Title: Required Agricultural Practices Rule for The Agricultural Nonpoint Source Pollution Control Program

_____, on 5/12/2016.
(signature) (date)

Printed Name and Title:

Charles R. Ross, Jr., Secretary

BE AS SPECIFIC AS POSSIBLE IN THE COMPLETION OF THIS FORM, GIVING FULL INFORMATION ON YOUR ASSUMPTIONS, DATABASES, AND ATTEMPTS TO GATHER OTHER INFORMATION ON THE NATURE OF THE COSTS AND BENEFITS INVOLVED. COSTS AND BENEFITS CAN INCLUDE ANY TANGIBLE OR INTANGIBLE ENTITIES OR FORCES WHICH WILL MAKE AN IMPACT ON LIFE WITHOUT THIS RULE.

1. TITLE OF RULE FILING:

Required Agricultural Practices Rule for The Agricultural Nonpoint Source Pollution Control Program

2. ADOPTING AGENCY:

The Vermont Agency of Agriculture, Food and Markets

3. CATEGORY OF AFFECTED PARTIES:

LIST CATEGORIES OF PEOPLE, ENTERPRISES, AND GOVERNMENTAL ENTITIES POTENTIALLY AFFECTED BY THE ADOPTION OF THIS RULE AND THE ESTIMATED COSTS AND BENEFITS ANTICIPATED:

This rule requires management changes and targeted conservation practice implementation on farms in order to protect water quality. The economic impact of these changes depend largely on the size and type of the farm and their specific obligations under the rule. In general, livestock farms and farms growing annual crops in floodplain areas will be most affected by the rules. Provisions in this rule that we expect to have an economic impact include:

- Development and implementation of Nutrient Management Plans for Certified Small Farms Operations.
- Increase in vegetated buffer width on streams from 10 feet to 25 feet for Small Farm Operations.
- Implementation of 10 foot wide vegetated buffers on field ditches for all farms.
- Implementation of cover crops on frequently flooded soils for all farms.
- Increase in vegetated buffer width from 25 feet to 100 feet for all annual cropland that has a slope greater than or equal to 10%.

There are a number of federal and State programs that offer technical and financial assistance to farmers and landowners seeking to implement the management changes and conservation practices required by this rule. These programs will lessen the economic impact to farmers who choose to participate, and will also have an impact on the organizations administering the programs. Additionally, other stakeholders will be affected by the implementation of this rule, either directly or indirectly.

This section outlines the parties expected to be affected by the implementation of this rule, and estimates the economic costs and benefits affecting each party.

Permitted Medium and Large Farm Operations (MFOs, LFOs) - There are currently 180 permitted Medium and Large Farm Operations in Vermont, which manage an estimated half of Vermont's agricultural land.

We estimate that an average MFO of 536 acres would need to implement approximately 17 acres of vegetated buffers on their farm ditches as a result of the 10 foot wide buffer on farm ditches requirement in this rule, costing the average medium sized farm \$9,872.24 (\$580.72 per acre). This cost includes foregone income from lost corn production (the crop in this State that is the most impacted by this rule), and is likely a high estimate since this calculation assumes no buffers are currently in place on ditches.

For annual cropland that has a slope greater than 10%, MFOs and LFOs will need to increase their vegetated buffer widths from 25 feet to 100 feet, costing the average sized MFO \$10,580.71 to implement an estimated 18.22 acres of additional vegetated buffer. Exceptions to the required vegetative buffer zone widths may be considered upon request on a site specific basis according to standards approved by the Secretary, but in no case shall a buffer zone be less than 10 feet in width.

Another provision of this rule requires the establishment of cover crops on farm fields that have frequently flooded soils, as designated by the USDA NRCS soil survey. We estimate that roughly 16% of farm fields would require cover crops under this provision, and would require the average sized MFO to implement approximately 86 acres of cover crop as a result of this rule, costing them \$7,641.96 per year (\$88.86 per acre).

In order for MFOs and LFOs to establish cover crops in the aforementioned areas, they may need to shift to planting shorter season corn on their frequently flooded corn fields. However, studies conducted by the University of Vermont Extension service have shown that shorter season corn varieties can produce equally as well, if not better, than typical longer season varieties. Therefore, we estimate that there will be no significant economic impact from MFOs and LFOs planting shorter season corn in order to establish cover crop by October 1st (broadcast seed) or October 15th (drilled seed) on their frequently flooded soils.

In addition to cover crop requirements on land that is classified as frequently flooded, MFOs and LFOs will be restricted from applying manure and other agricultural wastes to that land from October 15th to April 15th, or about 2 ½ months longer of a restriction on applying these wastes than land not

classified as frequently flooded. While this does reflect a change in management, we do not foresee this as having a significant economic impact on the majority of farms, as the adoption of no-cost management changes prioritizing spreading of manure on frequently flooded lands will satisfy the requirements of the proposed rule. Farms that have a disproportionately large amount of frequently floodable land will be allowed to apply for a waiver to this requirement if they can demonstrate that they can manage the land in a way that prevents significant sediment and nutrient losses from their land.

This rule requires that all gully erosion be stabilized and controlled. The most common conservation practice used for gully erosion is the implementation of a grassed waterway. However, MFOs and LFOs should already be addressing their gully erosion through the implementation of their Nutrient Management Plans, per the NRCS 590 practice standard. Therefore, we do not expect a significant economic impact to MFOs and LFOs regarding gully stabilization as a result of this rule.

Small Farm Operations and Certified Small Farm Operations (SFOs, CSFOs) - There are approximately 7,000 small farms, 1,500 of which will likely be required to certify their Small Farm Operations under this rule. We estimate that small farms operate roughly 50% of all agricultural land in Vermont.

This rule requires CSFOs to develop and implement nutrient management plans on their land to the USDA NRCS 590 practice standard. We estimate the development of an NMP on an average small farm to cost \$2,938.00, and the implementation of this plan to cost an average CSFO of 107 acres an additional \$2,675.00. However, it should be noted that there will likely be a significant economic benefit to implementing these nutrient management plans as a result of optimized yields, and a reduced need to purchase fertilizer and better soil health and retention.

We estimate that an average SFO that owns 107 acres would need to implement approximately 3.4 acres of vegetated buffers on their farm ditches as a result of the 10 foot wide buffer on farm ditches requirement in this rule, costing them \$1,974.45 (\$580.72 per acre). This cost includes foregone income from lost corn production, and is likely a high estimate since this calculation assumes no buffers are currently in place on ditches.

All small farms will be required to increase their vegetated buffer width on surface water from 10 feet to 25 feet. We estimate that this will require the average sized small farm to implement 4.27 acres of vegetated buffer, costing them approximately \$2,479.67.

For annual cropland that has a slope greater than 10%, SFOs will need to increase their vegetated buffer widths from 25 feet to 100 feet, costing the average sized SFO \$2,113.82 to implement an estimated 3.64 acres of additional vegetated buffer.

Another provision of this rule requires the establishment of cover crops on annual crop fields that have frequently flooded soils, as designated by the USDA NRCS soil survey. We estimate that roughly 16% of farm fields would require cover crops under this provision, and would require the average sized SFO to implement approximately 17 acres of cover crop as a result of this rule, costing them \$1,510.96 per year (\$88.86 per acre).

Following the same rule which applies to MFOs and LFOs, SFOs will be restricted from applying manure and other agricultural wastes to frequently flooded cropland from October 15th to April 15th, or about 2 ½ months longer of a restriction on applying these wastes than land not classified as frequently flooded. While this does reflect a change in management, we do not foresee this as having a significant economic impact on the majority of farms, as the adoption of no-cost management changes prioritizing the spreading of manure on frequently flooded lands will satisfy the requirements of the proposed rule. Again, farms that have a disproportionately large amount of frequently floodable land will be allowed to apply for a waiver to this requirement if they can demonstrate that they can manage the land in a way that prevents significant sediment and nutrient losses from their land.

SFOs will be required to stabilize gully erosion where it exists on their land (MFO and LFOs are assumed to have already addressed these issues as part of existing permit rules). While we are not able to estimate how many acres of cropland will need gully stabilization, the most common practice used to address this issue is the implementation of grassed waterways, which we estimate to cost \$0.25 per square foot.

We estimate that there will be a significant economic benefit to implementing the management changes required under this rule from improvements in soil fertility and soil health, and reduced risk of crop loss as improved soil health increases crop resiliency to climatic extremes. There are substantial benefits to the farm from managing these areas of erosion due to the retention of soils in the field as well.

Technical Service Providers - Technical service providers will likely see an increase in business as a result of this rule, as farmers seek technical assistance in changing farm management. Custom manure applicators will see an economic cost of needing certification to apply manure on farms. We anticipate that this cost will be negligible, as it requires eight hours of training every five years. A legislative proposal yet to be approved

would require an annual certification fee of \$30.00 for each full-time employee of a custom manure applicator business.

USDA Natural Resources Conservations Service (NRCS) - The proposed rule will likely increase participation in the NRCS programs, especially the Environmental Quality Incentives Program (EQIP). NRCS programs could significantly reduce the cost of implementation of this rule for farmers who choose to participate in their programs.

The Agency of Natural Resources (ANR) - ANR may have increased costs as a result of this rule. These costs are a result of additional coordination that may be required with the Agency of Agriculture and the re-drafting of the Memorandum of Understanding for that Ag Nonpoint Source Pollution Reduction Program, and coordinating program, policy, and compliance efforts.

Fishing Industry - We expect there to be a positive long-term economic impact to the State's fisheries and fishing industry as a result of this rule. Water quality improvements associated with the implementation of this rule should improve fish habitat, and reduce algal blooms that can result in large fish kills.

The General Public - The general public will benefit from this rule through improved water quality.

Vermont Association of Conservation Districts (VACD) - VACD may have increased costs as a result of an increased demand for outreach, technical assistance, and educational activities. However, the organization may benefit from increased opportunities for grants and contracts to assist with these activities.

Natural Resources Conservation Districts (NRCDS) - The NRCDS may have increased costs as a result of an increased demand for outreach, technical assistance, and educational activities. However, the organization may benefit from increased opportunities for grants and contracts to assist with these activities.

University of Vermont Extension Service (UVM Ext.) - UVM Ext. may have increased costs as a result of an increased demand for outreach, technical assistance, and educational activities. However, the organization may benefit from increased opportunities for grants and contracts to assist with these activities.

Environmental Organizations - Environmental organizations will benefit from improved water quality and aquatic habitat as a result of this rule as well as increased opportunities for grants and contracts for local implementation and education efforts.

4. IMPACT ON SCHOOLS:

INDICATE ANY IMPACT THAT THE RULE WILL HAVE ON PUBLIC EDUCATION, PUBLIC SCHOOLS, LOCAL SCHOOL DISTRICTS AND/OR TAXPAYERS:

This rule is not expected to have any significant impact on schools.

5. COMPARISON:

COMPARE THE ECONOMIC IMPACT OF THE RULE WITH THE ECONOMIC IMPACT OF OTHER ALTERNATIVES TO THE RULE, INCLUDING NO RULE ON THE SUBJECT OR A RULE HAVING SEPARATE REQUIREMENTS FOR SMALL BUSINESS:

Requirements established through Act 64 of 2015 and existing rules for agricultural water quality do not allow for the consideration of no rule for the sake of comparison. The intent of the RAP rule is to set a standard to be followed by farms in managing land and infrastructure to reduce or eliminate adverse water quality impacts and represents a significant change in accomplishing that goal. The Agency strives to establish standards that are achievable through enhanced land management practices while limiting the economic impact of those practices to the farm.

Another alternative is one that was entertained while drafting this rule, and represents requiring more stringent environmental standards generally. For example, complete livestock exclusion on all surface waters could be required, the animal thresholds to trigger small farm certification could be lowered thus impacting substantially more farms, opportunities for alternative management methods could be prohibited and a one size fits all rule could be established. The Agency believes that this approach would not succeed in meeting the goals of the programs involved and would result in less compliance and therefore less improvement in water quality.

The proposed rule prioritized the water quality impacts and the associated economic impacts in order to obtain the highest water quality benefits without creating unreasonable economic burdens.

6. FLEXIBILITY STATEMENT:

COMPARE THE BURDEN IMPOSED ON SMALL BUSINESS BY COMPLIANCE WITH THE RULE TO THE BURDEN WHICH WOULD BE IMPOSED BY ALTERNATIVES CONSIDERED IN 3 V.S.A. § 832a:

Many requirements in this rule have the ability to request an alternative standard from the Secretary on a case-by-case basis by demonstrating how the requirement impacts the farm and the proposed alternative could still maintain water quality goals. This allows for a significant amount of flexibility in how farmers are able to manage their land.

7. GREENHOUSE GAS IMPACT: *EXPLAIN HOW THE RULE WAS CRAFTED TO REDUCE THE EXTENT TO WHICH GREENHOUSE GASES ARE EMITTED, EITHER DIRECTLY OR INDIRECTLY, FROM THE FOLLOWING SECTORS OF ACTIVITIES:*

a. TRANSPORTATION —

IMPACTS BASED ON THE TRANSPORTATION OF PEOPLE OR PRODUCTS (e.g., “THE RULE HAS PROVISIONS FOR CONFERENCE CALLS INSTEAD OF TRAVEL TO MEETINGS” OR “LOCAL PRODUCTS ARE PREFERENTIALLY PURCHASED TO REDUCE SHIPPING DISTANCE.”):

This rule is expected to have little to no effect on greenhouse gas emissions related to transportation.

b. LAND USE AND DEVELOPMENT —

IMPACTS BASED ON LAND USE AND DEVELOPMENT, FORESTRY, AGRICULTURE ETC. (e.g., “THE RULE WILL RESULT IN ENHANCED, HIGHER DENSITY DOWNTOWN DEVELOPMENT.” OR “THE RULE MAINTAINS OPEN SPACE, FORESTED LAND AND /OR AGRICULTURAL LAND.”):

The implementation of this rule is expected to result in a significant reduction of greenhouse gasses relating to land use and development. These reductions are primarily driven by carbon sequestration and reduced fuel use resulting from on-farm land management changes. Specifically, using the NRCS COMET planner tool, the statewide implementation of 75,000 acres of cover crops and 42,000 acres of filter strips/buffers alone are expected to result in the reduction of 80,750 tonnes of CO₂ equivalent per year, which is similar to removing 21,400 cars from the road.

c. BUILDING INFRASTRUCTURE —

IMPACTS BASED ON THE HEATING, COOLING AND ELECTRICITY CONSUMPTION NEEDS (e.g., “THE RULE PROMOTES WEATHERIZATION TO REDUCE BUILDING HEATING AND COOLING DEMANDS.” OR “THE PURCHASE AND USE OF EFFICIENT ENERGY STAR APPLIANCES IS REQUIRED TO REDUCE ELECTRICITY CONSUMPTION.”):

This rule is not expected to have a direct impact on greenhouse gas emissions relating to building infrastructure. However, it is expected to increase farmer enrollment in USDA - NRCS programs, which could lead to some farms taking advantage of financial assistance for energy audits and energy efficiency retrofits offered in their EQIP program. This could lead to a significant reduction in greenhouse gasses emissions from increased building infrastructure efficiency on Vermont farms. The impact from this is impossible to estimate at this point in time.

d. WASTE GENERATION / REDUCTION —

IMPACTS BASED ON THE GENERATION OF WASTE OR THE REDUCTION, REUSE, AND

RECYCLING OPPORTUNITIES AVAILABLE (e.g., “THE RULE WILL RESULT IN REUSE OF PACKING MATERIALS.” OR “AS A RESULT OF THE RULE, FOOD AND OTHER ORGANIC WASTE WILL BE COMPOSTED OR DIVERTED TO A ‘METHANE TO ENERGY PROJECT’.”):

This rule is not expected to have a direct impact on greenhouse gas emissions relating to waste generation/reduction. However, this rule is expected to increase farmer enrollment in USDA - NRCS programs, which may lead to some farms taking advantage of federal programs offering financial assistance for on-farm methane digesters, which could lead to a significant reduction in greenhouse gasses emissions from waste on Vermont farms. The impact from this is impossible to estimate at this point in time.

e. OTHER —

IMPACTS BASED ON OTHER CRITERIA NOT PREVIOUSLY LISTED:

This rule is not expected to have any other significant impacts on greenhouse gas emissions.

Data Sources

Several data sources were used to generate the estimated economic impact of this rule. The number of farms and size of farms were estimated using a combination of the 2012 USDA NASS Agricultural Census Data, and existing VAAFM data from our MFO and LFO permit programs. Our estimate of SFOs managing half of the land, and MFOs and LFOs managing the other half was based on information from the same Agricultural Census Data, and reaffirmed by the same conclusion reached for the Missisquoi Bay Watershed in a 2012 Critical Source Area report by Stone Environmental, Inc. Cost data on the implementation of conservation practices, such as cover crop, grassed filter strips, and grassed waterways, were taken from the Vermont NRCS Estimated Practice Costs 'Gray Box' Data From Program Payment Schedules Fiscal Year 2016. Estimates for needed cover crop and vegetated buffer implementation were generated using a combination of available Soil GIS data, stream data, enhanced hydrology data, and the results of a 2015 VAAFM ditch network study in St. Albans Bay.